



PHAROS UNIVERSITY IN ALEXANDRIA

# EXPO GRADUATION PROJECTS

FACULTY OF ENGINEERING



ACADEMIC YEAR

2023 - 2024

**Dear PUA Prospective graduates**

Your engineering graduation project acts as a pivotal stepping stone, bridging the gap between theoretical knowledge and real-world application. It motivates you to delve deeper into a specific area of interest, applying learned principles to solve a novel problem. This research journey comprises critical thinking, problem-solving abilities, communication skills, and teamwork. All those skills are essential for a successful engineering career.

At PUA, we are concerned to provide you with an education environment where you can practice data analysis, experimentation, interpretation, and hands-on experience. Learning to navigate the complexities of research while contributing new knowledge and understanding to your field of study, the BSc thesis is your transformer from passive learners to active contributors, preparing you to tackle future challenges with confidence.

Finally, the BSc thesis serves as a springboard for innovation: It encourages you to explore the frontiers of your field, venturing beyond established knowledge to propose new solutions and approaches.

Best of Luck ...

**Prof. Mohamed Abdel Rahman****Deans' Consultant for Graduate Studies & Research**



**Pharos University in Alexandria**

**Faculty of Engineering**

**جامعة فاروس بالإسكندرية**

**كلية الهندسة**



**Dear PUA future engineers,**

Your BSc thesis is not merely a final academic hurdle, but a transformative experience that ignites your passion for the profession.

Firstly, the thesis throws open the doors to self-learning, a cornerstone of engineering practice. This hands-on approach fosters critical thinking and problem-solving skills, as they grapple with unforeseen complexities and navigate the uncertainties inherent in research.

Here, at PUA- faculty of engineering, you will learn to analyze data objectively, draw sound conclusions, and interpret findings with a critical eye. Beyond technical milestones, the thesis cultivates soft skills, crucial for collaborating with colleagues, presenting ideas to clients, navigating complex projects, and ensuring successful outcomes in the professional world.

Finally, your thesis journey fosters personal growth and resilience. It builds confidence, self-reliance, and a growth mindset, qualities that will serve you well throughout your professional and personal lives; ready to tackle the challenges and contribute to the advancements of tomorrow.

Wishing you a successful journey ...

**Prof. Mahmoud M. El Meligy**

**Dean of the Faculty of Engineering**



Pharos University in Alexandria

Faculty of Engineering

جامعة فاروس بالإسكندرية

كلية الهندسة



# **Computer Engineering Department (EC400-1 & EC400-2)**



Pharos University in Alexandria

Faculty of Engineering

جامعة فاروس بالإسكندرية

كلية الهندسة





## 1. Flame Detection Sensor

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|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |
| <b>Project Title</b>         | Flame Detection Sensor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                 |
| <b>Supervisor(S)</b>         | DR. Hossam moustafa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |
| <b>Goals / Objectives</b>    | <p>Our flame detection sensor holds immense significance across diverse industries. From safeguarding manufacturing facilities to protecting homes, it plays a pivotal role in fire prevention.</p> <p><b>Our project aims to:</b></p> <ul style="list-style-type: none"> <li>• Real-time data transmission for remote monitoring and control.</li> <li>• Integration with building automation systems for quick response.</li> <li>• Reduced false alarms through advanced sensor technology.</li> <li>• High sensitivity for early detection of even small flame sparks.</li> <li>• Potential for predictive maintenance, increasing sensor lifespan.</li> </ul> |                                 |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Name</b>                     |
|                              | 202004411                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Khaled Ayman Ibrahim Saleh      |
|                              | 201900307                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mohamed Abdelwahab Elmorsi Aly  |
|                              | 201900314                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Youssef Elsayed Abdelkader Nasr |
|                              | 201901434                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Ibrahim Elsayed Abdelkader Nasr |
|                              | 201501299                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Marwan Fawzy Shehat Mahmoud     |



## 2. Arabic Sentiment analysis

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|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |
| <b>Project Title</b>         | Arabic Sentiment analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |
| <b>Supervisor(S)</b>         | DR. Saleh elshehaby                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |
| <b>Goals / Objectives</b>    | <p>Attendance management is a crucial aspect of any organization institution. Traditional attendance systems are prone to errors and can be time-consuming. This proposal outlines the implementation of a real-time face recognition attendance system, which offers an efficient and accurate method for tracking attendance.</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>• The main objectives of implementing a real-time face recognition attendance system are as <b>follows</b>:</li> <li>• Accuracy: Ensure accurate attendance recording by utilizing advanced face recognition algorithms.</li> <li>• Efficiency: Reduce manual effort and save time by automating the attendance process.</li> <li>• Security: Enhance security by authenticating individuals based on facial features.</li> <li>• Real-time Monitoring: Enable real-time attendance monitoring for immediate insights and reporting.</li> <li>• Scalability: Develop a system that can handle a large number of users and accommodate future growth.</li> </ul> |                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>            |
|                              | 201900804                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Khaled Waleed Shehata  |
|                              | 202101303                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ahmed Gaber Saad       |
|                              | 201901664                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mahmoud Zayed          |
|                              | 201900437                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ibrahim Ibrahim Fetouh |
|                              | 201902503                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Rawan Mohamed Mostafa  |





### 3. Integrated School Management System for Enhanced Student-Teacher Collaboration and Resource Accessibility

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|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |
| <b>Project Title</b>         | Integrated School Management System for Enhanced Student-Teacher Collaboration and Resource Accessibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |
| <b>Supervisor(S)</b>         | DR Wessam salama                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |
| <b>Goals / Objectives</b>    | <p>Educational platforms play an important life in facilitating the communication between students and teachers. Therefore, our proposed graduation project aims to develop an integrated school management system that will serve as a comprehensive platform connecting students and teachers while facilitating the dreamless upload and download of educational resources in PDF format. This system will enhance communication, collaboration, and resource accessibility within educational institutions.</p> <p>The main contribution of our project is to:</p> <ul style="list-style-type: none"><li>• To create a user-friendly web-based platform for students and teachers to connect.</li><li>• English to Arabic: make all system available for all cultures.</li><li>• Introduction video to the students to know how to use the platform.</li><li>• By making QR code for every student to announce his parent his child arrived.</li></ul> |                          |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Name</b>              |
|                              | 201901116                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sohaib Khaled Abdelmaged |
|                              | 201902309                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mohab Mohamed Ahmed      |
|                              | 201900043                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ahmed Hassan Dawood      |
|                              | 201900108                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ahmed Hesham Anwar       |
|                              | 201900178                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Zead Mahmoud Abouzahra   |

#### 4. A virtual pet for children with autism spectrum disorders (ASD)

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| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
| <b>Project Title</b>         | A virtual pet for children with autism spectrum disorders (ASD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |
| <b>Supervisor(S)</b>         | DR. Abdelghafar Refat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |
| <b>Goals / Objectives</b>    | <p>Children with communication difficulties often face challenges in school and in their social lives. They may have difficulty expressing themselves, understanding what others are saying, or following social cues. This can lead to frustration, isolation, and academic underachievement. This project proposes to develop a virtual assistant for children with communication difficulties in Egypt. The virtual assistant will use augmented reality (AR) to create a more engaging and interactive experience for children. The AR environment will be built using a preferred game engine and Media Pipe. Artificial intelligence (AI) will be used to train the virtual assistant to adapt to a child's needs and communication style. The virtual assistant will help children with communication difficulties to learn and grow. It will be fun and easy to use for children of all ages and customizable to meet each child's individual needs. This project has the potential to have a significant impact on the lives of children with communication difficulties in Egypt. It can help them to communicate more effectively with their peers, family, and teachers. It can also help them to learn and grow, and to reach their full potential.</p> |                              |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Name</b>                  |
|                              | 201900460                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Abadeer Zareef Ishak         |
|                              | 201901425                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Ayda Mohammed Ali            |
|                              | 201801283                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Maryam Abd El-Monaim Mohamed |
|                              | 201901402                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mahmoud Mohamed Abdul-basir  |
|                              | 201801745                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mohamed Hamdy Mohamed        |



## 5. Esp.-Voice Assistant

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| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
| <b>Project Title</b>         | Esp.-Voice Assistant                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
| <b>Supervisor(S)</b>         | DR. Hicham elmongui                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |
| <b>Goals / Objectives</b>    | <p>Technology is the golden key in facilizing our life. Therefore, our project aims to develop a smart system based on mobile application.</p> <p>The main objective of our project is:</p> <ul style="list-style-type: none"><li>• Design, develop, and implement an intuitive and user-friendly mobile application.</li><li>• Our proposed mobile application is utilized to facilitate centralized control and automation of smart home devices.</li></ul> <p>The application will aim to simplify daily routines, enhance energy efficiency, and improve the overall quality of life for homeowners.</p> |                              |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Name</b>                  |
|                              | 201900442                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Khaled Eldesouky Mohammed    |
|                              | 201900643                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mohamed Ahmed Abd El Aal     |
|                              | 201901472                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Ahmed Bilal Zaki             |
|                              | 201901507                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Abdelmeniem nasr abdelmeniem |
|                              | 201901013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mahmoud Mohamed Abdo         |

## 6. AgriBot Guardian: Precision Field Sentry

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| <b>Program</b>                                                                                                 | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |
| <b>Project Title</b>                                                                                           | AgriBot Guardian: Precision Field Sentry                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         |
| <b>Supervisor(S)</b>                                                                                           | DR Wessam salama                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                         |
| <b>Goals / Objectives</b><br> | <p>In the ever-evolving world of agriculture, the issue of harmful or poisonous plants presents a significant challenge for crop cultivation. These invasive plants can lead to substantial losses for farmers. To address this problem, we propose the development of a small robot, not exceeding 20 cm in length, equipped with cutting-edge machine learning capabilities. This robot will autonomously patrol agricultural fields, identify harmful plants, and notify farm owners via a dedicated mobile application. The robot will navigate the fields in four directions to comprehensively monitor the entire area. By reducing the reliance on human labour and enhancing accuracy, this solution promises to revolutionize the agricultural sector.</p> <p><b>The primary objectives of this project are as follows:</b></p> <ul style="list-style-type: none"> <li>• Design and develop a compact agricultural field monitoring robot capable of moving in four directions.</li> <li>• Implement machine learning algorithms to enable the robot to identify harmful plants accurately.</li> <li>• Create a user-friendly mobile application for real-time notifications to farmers.</li> <li>• Reduce the need for manual monitoring and enhance the accuracy of harmful plant detection in agricultural fields.</li> </ul> |                         |
| <b>Student Names and IDs</b>                                                                                   | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>             |
|                                                                                                                | 201900640                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Bssem Ibrahim           |
|                                                                                                                | 201900169                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Omar Ahmed Mohamed      |
|                                                                                                                | 201900862                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Osama Abdulhakem Moftah |
|                                                                                                                | 201900453                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nagham Tarek Adel       |
|                                                                                                                | 201900184                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Niveen Shaheen Fathy    |

## 7. Intelligent Heartbeat Tracking Based on time Series Analysis

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|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |
| <b>Project Title</b>         | Intelligent Heartbeat Tracking Based on time Series Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |
| <b>Supervisor(S)</b>         | DR. Abdelghafar Refat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |
| <b>Goals / Objectives</b>    | <p>This project proposes a smart heart monitoring system that is based on the concepts of the Internet of Things (IOT) and cloud computing. The aim is to provide a convenient,</p> <ul style="list-style-type: none"> <li>• Easy-to-use, and cost-effective health care system to support senior citizens, athletes, and people from all walks of life enabling them to be remotely monitored and diagnosed from the comfort of their homes without having to travel to hospitals.</li> <li>• Intelligent heartbeat tracking through time series analysis involves continuously monitoring and analysing heart data from sources like ECGs and wearable devices, or smartphone applications to provide real-time insights into heart health.</li> <li>• The process begins with data collection, the users Electrocardiogram (ECG) data is collected using a simple-to-use 3-lead sensor set and is transmitted directly to the cloud using WIFI.</li> <li>• Data pre-processing techniques are applied to eliminate noise and ensure data quality to extract heart rate. The time series data is segmented to isolate individual heartbeat cycles, enabling detailed analysis. In case of abnormal heart activities, an emergency email addressed to pre-selected contact people and the user doctor.</li> <li>• The doctor could hypothetically manage the health of multiple patients from his/her application.</li> </ul> |                                 |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Name</b>                     |
|                              | 201802576                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Manar Ashraf Rashed             |
|                              | 201802562                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Ahmed Magdy Elkoumy             |
|                              | 201802567                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Shreif Ashraf Badr              |
|                              | 201801333                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Abdelrahaman Samir Lotfey Badwy |
|                              | 201900538                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | El-Hassan Mohanned Farid        |

## 8. Human violence detection

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|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |
| <b>Project Title</b>         | Human violence detection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |
| <b>Supervisor(S)</b>         | DR. Marwan Tori                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |
| <b>Goals / Objectives</b>    | <p>Violence may happen anywhere. One of the ways to know and oversee the violence in some places is by installing Closed-circuit Television (CCTV). The recorded video captured by CCTV can be used as proof in a law court. Surveillance cameras play a crucial role in curbing crime and violence in public spaces by serving as a deterrent.</p> <p><b>Our project aims to:</b></p> <ul style="list-style-type: none"> <li>To enhance their effectiveness, there is a growing need for automated tools that can detect crimes in real time.</li> <li>Our objective is to enhance one of the detection techniques which is to detect violent activity automatically from CCTV in various stages such as object detection, action detection, and video classification.</li> <li>We are in the aim of developing a system that is used to detect violent activities without the presence of humans.</li> <li>We are looking to employ a deep learning model and use a dataset to effectively create a system capable of distinguishing between violent and non-violent human activities.</li> <li>In the initial stages, the CCTV system will identify instances of violence, capturing both video and images.</li> <li>This process is critical to promoting enhanced security measures and increasing the overall effectiveness of law enforcement. Upon detection, the system will generate a loud alert, aiming to enhance the awareness of the aggressor and potentially discourage further violent actions.</li> <li>Furthermore, the system is developed to immediately initiate an emergency call, contacting the police and ambulance services if needed.</li> </ul> <p>The integration of these measures is intended to shape a system that actively contributes to the safety and well-being of the community.</p> |                                 |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                     |
|                              | 201900285                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ahmed Mahmoud Hamida            |
|                              | 201701429                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Merna Adel Fathy                |
|                              | 201900729                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mariam Makram Najib             |
|                              | 201901494                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Habeba Ahmed Elshpasy           |
|                              | 201900232                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Maher Sherif Mohamed Ali Shoman |

**9. Attendance and Personal Protective Equipment Checker**

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                        |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
| <b>Project Title</b>         | Attendance and Personal Protective Equipment Checker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
| <b>Supervisor(S)</b>         | DR. Lamiaa Ali                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |
| <b>Goals / Objectives</b>    | <p>The implementation of this system is expected to yield improvements in safety standards, attendance management, and access control capabilities within the manufacturing premises.</p> <p><b>The main contribution of our project is to:</b></p> <ul style="list-style-type: none"> <li>Utilize artificial intelligence and computer vision technologies in order to develop a comprehensive solution that effectively solves the following essential functionalities:</li> <li>Facial recognition technology is utilized for the purpose of attendance tracking.</li> <li>The proposed system aims to incorporate access control capabilities in order to govern and monitor admission into designated zones inside the industrial premises.</li> <li>The system employs facial recognition technology and access control lists to ascertain the authorization of an individual to gain entry into a specific area.</li> <li>In the event that individuals lacking proper authorization make an effort to obtain entry, the system will expeditiously notify security staff and exhibit a notification indicating "Access Denied."</li> </ul> |                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Name</b>            |
|                              | 201900397                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yara Ahmed Yehia       |
|                              | 201902502                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Tasnim Adel Abdelrhman |
|                              | 201900402                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Sherif Khaled Abdo     |
|                              | 201701441                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Hager Mahmoud Moussa   |
|                              | 201901668                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Amr Ali Marzouk        |

## 10. Currency Detection System

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |
| <b>Project Title</b>         | Currency Detection System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                |
| <b>Supervisor(S)</b>         | DR. Lamiaa Ali                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                |
| <b>Goals / Objectives</b>    | <p>The main objective of this work is to detect the cancerous lung nodules from the given input lung image. and to classify the lung cancer and its severity. To detect the location of the cancerous lung nodules, this work uses novel Deep learning methods.</p> <p>The main objective of this work is to detect the cancerous lung nodules from the given input lung image and to classify the lung cancer and its severity. To detect the location of the cancerous lung nodules, this work uses novel Deep learning metho.</p> <p>The creation and circulation of counterfeit notes are on the rise right now, as a result of advances in colour printing technology. This is a serious issue that affects practically all of the nations. The economy is impacted. Such fake money fuels evil intentions, typically involving terrorist actions.</p> <p><b>The contribution of our project is:</b></p> <ul style="list-style-type: none"> <li>• This project leverages state-of-the-art image processing techniques, deep learning algorithms, and real-time data analysis to detect, classify, and verify various denominations of currency.</li> <li>• The core objective of this project is to address the challenges associated with counterfeit currency detection.</li> </ul> |                                |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Name</b>                    |
|                              | 201801183                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ahmed khaled elmenofy          |
|                              | 201801818                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Maryam tarek elsayed           |
|                              | 201801702                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Rana Abdelmoneam mohamed       |
|                              | 201701407                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Moustafa Sobhy Moustafa Hassan |





## 11. Blind and Visually Impaired Assistance System

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |
| <b>Project Title</b>         | Blind and Visually Impaired Assistance System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |
| <b>Supervisor(S)</b>         | DR. Hossam moustafa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |
| <b>Goals / Objectives</b>    | <p>Designing a Blind and Visually Impaired Assistance System as a project involves creating a system that utilizes technology to assist individuals with visual impairments in various aspects of their daily lives. The objective of our project:</p> <ul style="list-style-type: none"><li>• Enhanced Safety: The system reduces the risk of accidents and hazards for visually impaired individuals.</li><li>• Improved Mobility: Users can navigate complex environments and public spaces more effectively.</li><li>• Access to Information: The system converts printed text into audible information, broadening accessibility.</li><li>• Social Inclusion: It enables active participation in social activities and reduces social isolation.</li><li>• Emotional Well-Being: Users experience increased confidence and emotional well-being.</li><li>• Education and Employment: Opportunities in education and employment are expanded.</li><li>• Cost-Efficiency: It offers a cost-effective alternative to personal assistance or guide dogs.</li></ul> |                     |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Name</b>         |
|                              | 201900782                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yehia ayoub         |
|                              | 201901047                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Samah ayman         |
|                              | 201900403                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Ammar yasser sallam |
|                              | 201901422                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | osama abdelmohsen   |
|                              | 201901702                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | abdelrahmen waleed  |



## 12. Hotel Reservation Application

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |
| <b>Project Title</b>         | Hotel Reservation Application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |
| <b>Supervisor(S)</b>         | DR. Hicham elmongui                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |
| <b>Goals / Objectives</b>    | <p>Hotels have been around manually for a very long time, involving traditional methods such as logbooks to track room vacancies. This method is tedious, time-consuming, and prone to human error.</p> <p><b>Our proposed project aims to:</b></p> <ul style="list-style-type: none"><li>• Developing an online hotel reservation system is proposed to make the reservation process more efficient and less error. To handle reservation inquiries, single reservations, group reservations, and cancel reservations.</li><li>• The system will require details of the customers, type of room required, and number of rooms required.</li><li>• The system will create unoccupied rooms and display the results.</li><li>• Moreover, information such as rent of rooms and details of rooms available is provided in our project.</li><li>• This will make hotel operations easier for the receptionist as all data and information will be stored in the database and can be accessed anytime.</li></ul> |                      |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Name</b>          |
|                              | 201901668                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Amr Ali Marzouk      |
|                              | 201901470                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mina Adel Gad        |
|                              | 201901981                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Omar Azaz            |
|                              | 201801230                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Eslam Mohamed Hassan |



### 13. Accident Anticipation System

|                              |                                                                                                                                                                                                                                                                                                                             |                            |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                        |                            |
| <b>Project Title</b>         | Accident Anticipation System                                                                                                                                                                                                                                                                                                |                            |
| <b>Supervisor(S)</b>         | DR. Marwan Torki                                                                                                                                                                                                                                                                                                            |                            |
| <b>Goals / Objectives</b>    | The primary objective of this project is to increase the time of pre-accident detection to allow drivers sufficient time to take appropriate actions. We aim to extend the current average detection time of 4.87 seconds, providing a larger window of opportunity to respond effectively to potential accident scenarios. |                            |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                   | <b>Name</b>                |
|                              | 201901201                                                                                                                                                                                                                                                                                                                   | Mohamed Ahmed Hussain      |
|                              | 201900087                                                                                                                                                                                                                                                                                                                   | Hesham Hesham Gaber        |
|                              | 201900565                                                                                                                                                                                                                                                                                                                   | Mohamed Adel Mohamed Ahmed |
|                              | 201901883                                                                                                                                                                                                                                                                                                                   | Sama khatab                |
|                              | 201901914                                                                                                                                                                                                                                                                                                                   | Sandra atef                |

## 14. Attendance Taking and Tracking System

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Program</b>               | Computer Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |
| <b>Project Title</b>         | Attendance Taking and Tracking System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |
| <b>Supervisor(S)</b>         | DR. Hossam moustafa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            |
| <b>Goals / Objectives</b>    | <p>Counting can be straightforward when dealing with a small number of items, such as papers or toys on the floor, or even a moderate number of students in a lecture room. However, it becomes considerably challenging when applied to a factory generating thousands of products daily or a bustling mall with hundreds of customers constantly moving around. Our project is a comprehensive endeavour, encompassing both hardware and software components.</p> <ul style="list-style-type: none"> <li>• Its primary capability lies in its capacity to accurately count a substantial quantity of items, using either photos or videos as input data sources.</li> <li>• Counting items represents a significant advantage of our project; however, it goes beyond mere counting. It promptly delivers precise results to your device or securely stores them in the cloud, accompanied by relevant information such as date, time, and title, for your convenience and future reference.</li> <li>• Our project is highly versatile and can be seamlessly implemented in various settings, including factories, malls, or as a portable solution for individual users.</li> <li>• The installation process is simplified to a quick download and straightforward setup, making it accessible to users with varying levels of technical expertise.</li> <li>• This transformative application is designed to enhance efficiency and convenience with just a single click and a few easy steps.</li> </ul> |                            |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Name</b>                |
|                              | 201901821                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rawan Arafa Abdelmaksoud   |
|                              | 201900448                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Ahmed Said Bayoumi Ramadan |
|                              | 201901869                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Mohammed Sherief           |
|                              | 201900400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Adham Sameh Ayoub          |
|                              | 201900882                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Asser Walid Elhelw         |



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# **Construction Engineering and Management Department (ES400-1 & ES400-2)**





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## 1. Introduction of value engineering to the construction of a residential/commercial building

|                              |                                                                                                                                                                                                                                                                                                                                    |                                  |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                            |                                  |
| <b>Project Title</b>         | Load sequence analysis for RC simple beams loaded with planted column                                                                                                                                                                                                                                                              |                                  |
| <b>Supervisor(S)</b>         | Prof. Hazem Elbakry<br>Dr. Mostafa Marzouk<br>Dr. Moemn Moharam<br>Prof. Naema Ali                                                                                                                                                                                                                                                 |                                  |
| <b>Goals / Objectives</b>    | The main goal of the project is to study the effect of the construction method of multi-story building on the values of the internal forces due to the load sequence for the case of simple beams. Besides, producing structural drawings for all elements for multistory building such as, slabs, beams, columns and foundations. |                                  |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                          | <b>Name</b>                      |
|                              | 201902293                                                                                                                                                                                                                                                                                                                          | Noor Ahmed Abdullatif Alhanafy   |
|                              | 201702127                                                                                                                                                                                                                                                                                                                          | Ahmed Ahmed Abdellattif Elhanafy |
|                              | 201900287                                                                                                                                                                                                                                                                                                                          | Mina Bakhet Ayad                 |





## 2. Introducing BIM to the Construction Management of a Residential Compound

|                              |                                                                                                                                                                                                                                                                                                                                                           |                               |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                   |                               |
| <b>Project Title</b>         | Load sequence analysis for RC cantilever beams loaded with planted column                                                                                                                                                                                                                                                                                 |                               |
| <b>Supervisor(S)</b>         | Prof. Hazem Elbakry<br>Dr. Mostafa Marzouk<br>Dr. Moemn Moharam<br>Prof. Naema Ali                                                                                                                                                                                                                                                                        |                               |
| <b>Goals / Objectives</b>    | The main goal of the project is to study the effect of the construction method of multi-story building on the values of the internal forces due to the load sequence for the case of implanted column on cantilever beam. Besides, producing structural drawings for all elements for multistory building such as, slabs, beams, columns and foundations. |                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                   |
|                              | 201901409                                                                                                                                                                                                                                                                                                                                                 | Mohamed Hamdy Elsayed Zaghoul |
|                              | 201901071                                                                                                                                                                                                                                                                                                                                                 | Mostafa adel ahmed elsersy    |
|                              | 201900551                                                                                                                                                                                                                                                                                                                                                 | Muhamed Sherif Abdallah       |



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### 3. Construction Management of an Iconic Landmark, High Level of Uncertainty

|                              |                                                                                                                                                                                                                                                                                                          |                                     |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                  |                                     |
| <b>Project Title</b>         | Load sequence analysis for RC slab loaded with planted column                                                                                                                                                                                                                                            |                                     |
| <b>Supervisor(S)</b>         | Prof. Hazem Elbakry<br>Dr. Mostafa Marzouk<br>Dr. Moemn Moharam- Prof. Naema Ali                                                                                                                                                                                                                         |                                     |
| <b>Goals / Objectives</b>    | The main goal of the project is to study the effect of the construction method of multi-story building on the values of the internal forces due to the load sequence.<br>Besides, producing structural drawings for all elements for multistory building such as, slabs, beams, columns and foundations. |                                     |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                | <b>Name</b>                         |
|                              | 201900581                                                                                                                                                                                                                                                                                                | Abdulh Abdelbasset                  |
|                              | 201901806                                                                                                                                                                                                                                                                                                | Abdullah Ahmed Hamed Ahmed Dahy     |
|                              | 202200229                                                                                                                                                                                                                                                                                                | Abdalrahman mohamed abdelmonaem ali |



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#### 4. Sustainable Construction Management of an Infrastructure Project

|                              |                                                                                                                                                                                                                                                                   |                   |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                           |                   |
| <b>Project Title</b>         | Effect of openings on the analysis of RC Two-way slabs                                                                                                                                                                                                            |                   |
| <b>Supervisor(S)</b>         | Prof. Hazem Elbakry<br>Prof. Naema Ali<br>Dr. Mostafa Marzouk<br>Dr. Moemn Moharam                                                                                                                                                                                |                   |
| <b>Goals / Objectives</b>    | The main goal of the project is to study the effect opening dimensions on the bending moments values for the two-way RC slabs.<br>Besides, producing structural drawings for all elements for multistory building such as, slabs, beams, columns and foundations. |                   |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                         | <b>Name</b>       |
|                              | 201900644                                                                                                                                                                                                                                                         | Mohamed Nasr Omar |



## 5. Artificial Island and beaches construction using sand nourishment

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
| <b>Project Title</b>         | Integrating the concept of sustainability in construction of commercial buildings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |
| <b>Supervisor(S)</b>         | Dr. Hisham Ali Sayed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |
| <b>Goals / Objectives</b>    | <p>Problem Definition: The construction industry is known for its negative environmental impact and unsustainable practices. Therefore, there is a pressing need to integrate the concept of sustainability into construction projects to address these challenges.</p> <p><b>Project goals:</b></p> <ul style="list-style-type: none"><li>• To promote the adoption of sustainable practices in construction projects and achieve sustainability goals related to construction projects.</li><li>• To increase awareness of sustainability in the construction industry and encourage the adoption of sustainable construction principles.</li></ul> <p><b>Project objective:</b></p> <ul style="list-style-type: none"><li>• Highlighting the pillars of sustainability and their applications on construction projects.</li><li>• Promoting the adoption of sustainable practices in construction projects.</li><li>• Increasing awareness of sustainability in the construction industry.</li></ul> |                              |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Name</b>                  |
|                              | 201801730                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mohamed Adel Mohamed Ibrahim |
|                              | 201900290                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Nermine Adel                 |
|                              | 201900172                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mahmoud Ali Deshishaa        |



## 6. Coastal protection measures for the artificial island, lakes and harbor water area

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |
| <b>Project Title</b>         | Development and enhancement of complex construction Projects by applying BIM                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                            |
| <b>Supervisor(S)</b>         | Dr. Hisham Ali Sayed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |
| <b>Goals / Objectives</b>    | <p>Problem definition: conflict between all project parties and stakeholders and lack of communication</p> <p>Project goals:</p> <p>to reach a maximized efficiency, reduce costs, improve cost estimates, better insights into projects, communication between all parties and better end results.</p> <p>Project Objectives:</p> <ul style="list-style-type: none"><li>• Enhance project performance and produce better outcomes.</li><li>• Improve cost estimations and scheduling.</li><li>• Enhance the communication between stakeholders</li></ul> |                            |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                |
|                              | 201701386                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mohamed hesham younis      |
|                              | 201900795                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Marwan Emad Eldin Ahmed    |
|                              | 201901953                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Danil ayman mahfouz yousef |

## 7. Multi-purpose port alignment and design

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |
| <b>Project Title</b>         | The impact of positive risks on leveraging success in construction of educational buildings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |
| <b>Supervisor(S)</b>         | Dr. Hisham Ali Sayed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |
| <b>Goals / Objectives</b>    | <p>Problem Definition: positive risks are often underutilized tools in project management.</p> <p>By taking advantage of these risks, project outcomes could be improved to deliver greater value to project stakeholders.</p> <p><b>Project goals:</b></p> <ul style="list-style-type: none"> <li>• To improve project outcomes and deliver greater value to project stakeholders.</li> <li>• To help companies reduce production and operational expenses,</li> <li>• To allow companies to develop new approaches to overcome construction industry challenges.</li> </ul> <p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• Develop risk tools and techniques to Increase profitability of construction projects.</li> <li>• Establish a strong market position.</li> <li>• Enhance competitive advantage.</li> <li>• Promote innovation</li> </ul> |                              |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Name</b>                  |
|                              | 201701164                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ahmed Aldany Abdelgawad      |
|                              | 5309145                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mahmoud Elsayed Elsayed Draz |
|                              | 201902339                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Zahi Anwar Saadi             |



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## 8. Modeling coastal protections and hydrodynamics

|                              |                                                                                                                                                                                                                                                                            |                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                    |                                        |
| <b>Project Title</b>         | Light weight foamed Concrete                                                                                                                                                                                                                                               |                                        |
| <b>Supervisor(S)</b>         | Prof. Alaa Aly Bashandy Dr. Osama A. Omar Eng. Amr Saad                                                                                                                                                                                                                    |                                        |
| <b>Goals / Objectives</b>    | Production of light weight concrete using foam as industrial by- product.<br>Conservation of natural resources.<br>Foam concrete is firing resistance.<br>Foam concrete has insulating and acoustic properties Achieving Egyptian vision 2030 for sustainable development. |                                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                  | <b>Name</b>                            |
|                              | 201902308                                                                                                                                                                                                                                                                  | Shehab Mohamed Ahmed                   |
|                              | 201801341                                                                                                                                                                                                                                                                  | Abdelrahman Mohamed Abdelrahman Hassan |
|                              | 202102165                                                                                                                                                                                                                                                                  | Moataz Shaltout                        |



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## 9. Using the Marble waste powder for Improving the Engineering Properties of Hot Asphalt Mix

|                              |                                                                                                                                                                                                                                   |                                    |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                           |                                    |
| <b>Project Title</b>         | Light weight concrete cast using Adipor55                                                                                                                                                                                         |                                    |
| <b>Supervisor(S)</b>         | Prof. Alaa Aly Bashandy Dr. Osama A. Omar Eng. Amr Saad                                                                                                                                                                           |                                    |
| <b>Goals / Objectives</b>    | Production of light weight concrete using Adaptor 55 industrial by- product.<br>Conservation of natural resources.<br>Production of environment friendly material.<br>Achieving Egyptian vision 2030 for sustainable development. |                                    |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                         | <b>Name</b>                        |
|                              | 201900463                                                                                                                                                                                                                         | Mohamed Reda Zaghlol Abdelrahman   |
|                              | 201900994                                                                                                                                                                                                                         | Abdelrahman Ahmed Mohamed Abdullah |
|                              | 201900955                                                                                                                                                                                                                         | Mrwan ahmed adlan khames           |





## 10. Using the Iron Waste powder for Improving the Engineering Properties of Hot Asphalt Mix

|                              |                                                                                                                                                                                                                       |                     |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                               |                     |
| <b>Project Title</b>         | Light weight concrete cast using recycled aggregate                                                                                                                                                                   |                     |
| <b>Supervisor(S)</b>         | Prof. Alaa Aly Bashandy Dr. Osama A. Omar osama.omar@pua.edu.eg<br>Eng. Amr Saad amr.abdelhamid.pt@pua.edu.eg                                                                                                         |                     |
| <b>Goals / Objectives</b>    | Reduction of waste materials. Production of light weight concrete from waste materials.<br>Conservation of natural resources.<br>Saving large areas of land for collecting waste. Keeping Environment from pollution. |                     |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                             | <b>Name</b>         |
|                              | 201801207                                                                                                                                                                                                             | Ahmed Mohamed Ahmed |
|                              | 201701196                                                                                                                                                                                                             | Aslam Salem Mohamed |
|                              | 201501237                                                                                                                                                                                                             | Rawan Gaber         |



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## 11. Investigating the Effect of Using the crushed glass for Producing the Hot Asphalt Mix

|                              |                                                                                                                                                                                                                           |                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                   |                     |
| <b>Project Title</b>         | Roadway Steel Bridges                                                                                                                                                                                                     |                     |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed El-Ghandour                                                                                                                                                                                             |                     |
| <b>Goals / Objectives</b>    | Create a 1:10 scale steel bridge for a feasibility study.<br>Purpose: Identify a bridge design for a limited access, long span bridge.<br>Intended Use: Carry mass transit, bicycles, pedestrians, and emergency vehicles |                     |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                 | <b>Name</b>         |
|                              | 201901476                                                                                                                                                                                                                 | Mohamed Sami Ahmed  |
|                              | 201901548                                                                                                                                                                                                                 | Omar Osaman Mohamed |
|                              | 201901557                                                                                                                                                                                                                 | Fares Osama ahmed   |



## 12. The use of cement factory waste in the manufacture of hot asphalt mixtures

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                |                         |
| <b>Project Title</b>         | Industrial Building + Car Agency                                                                                                                                                                                                                                                                                                                                                                                       |                         |
| <b>Supervisor(S)</b>         | Prof.Dr. Mohamed El-Ghandour                                                                                                                                                                                                                                                                                                                                                                                           |                         |
| <b>Goals / Objectives</b>    | <p>The aim of the project was to create an interesting space for a showroom with a neighboring car service Centre for repairing and maintenance.</p> <p>In addition to a pedestrian bridge to facilitate the transportation from one building to the other and giving access to the owners of the cars to go to the mezzanine floor which works as a platform for them to check on their vehicles being worked on.</p> |                         |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Name</b>             |
|                              | 201900125                                                                                                                                                                                                                                                                                                                                                                                                              | Ali Abdallaty Said      |
|                              | 201900595                                                                                                                                                                                                                                                                                                                                                                                                              | Abdallah Mustafa zazoua |
|                              | 201901438                                                                                                                                                                                                                                                                                                                                                                                                              | Mahmoud Hamdy Khedr     |



### 13. The Hydraulic Design for First Part of Fourth Branch Canal (4/) of Toshka Project The use of cement factory waste in the manufacture of hot asphalt mixtures

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |
| <b>Project Title</b>         | Aircraft Hanger with Crane Girder & Office Building                                                                                                                                                                                                                                                                                                                                                                                                          |                      |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed El-Ghandour                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |
| <b>Goals / Objectives</b>    | <p>The basic goal of this Project is to Design this project to be a suitable building and meet <b>this follow:</b></p> <ul style="list-style-type: none"><li>• Meet the specification in the steel code that we used: Egyptian code of practice for steel construction and bridges.</li><li>• Design the structure system to be stable.</li><li>• Improve the Architectural Views by applying the specification of Egyptian executive regulations.</li></ul> |                      |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Name</b>          |
|                              | 201900388                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Reem Tarek Elhadidi  |
|                              | 201901713                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sara Mohamed Mohamed |

## 14. The Hydraulic Design for Second Part of Fourth Branch Canal (4) of Toshka Project

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |
| <b>Project Title</b>         | Wastewater management, (Collection and Treatment) for sustainable small communities "Sawari in Alexandria".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                        |
| <b>Supervisor(S)</b>         | Prof. Medhat Mostafa<br>Dr. Hossam El Sherbiny<br>Dr. Diaa Seif                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |
| <b>Goals / Objectives</b>    | <p>Throughout the last two decades, municipal wastewater has emerged as an important and viable means of supplementing dwindling water supplies in a large number of regions throughout the world.</p> <p>In this project small community will be select to design the sewerage network system and design wastewater treatment plant to reuse the treated water in irrigation system.</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>• Training in Eastern wastewater treatment plant the largest wastewater treatment plant in Alex.</li> <li>• Investigation study for wastewater flow rate in Safari compound.</li> <li>• Design the sewerage network using the Sewer CAD software.</li> <li>• Cost evaluation.</li> <li>• Design wastewater treatment plant.</li> </ul> |                                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Name</b>                            |
|                              | 201901059                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ahmed Gamal Attia Alnashar             |
|                              | 201901035                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mahmoud Hamada Mohamed Gouda Hessain   |
|                              | 201900939                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mohamed Sobhy Abdalmohsen Arafa Ghonim |



## 15. The Planning and Design for First Part of Fourth Branch Canal (4/) of Toshka Project

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                        |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                        |
| <b>Project Title</b>         | Wastewater management, (Treatment and Reuse) for sustainable small communities "Sawari in Alexandria"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |
| <b>Supervisor(S)</b>         | Prof. Medhat Mostafa<br>Dr. Hossam El Sherbiny<br>Dr. Daa Seif                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |
| <b>Goals / Objectives</b>    | <p>Throughout the last two decades, municipal wastewater has emerged as an important and viable means of supplementing dwindling water supplies in a large number of regions throughout the world. The creation of sustainable cities is due to its importance, it aims to make cities green, with a clean environment free of pollution and self-sufficiency, and to benefit from it from abroad, such as reusing treated sewage water for irrigation.</p> <p>In this project small community will be select to design the irrigation network system and design wastewater treatment plant to reuse the treated water in irrigation system.</p> <p>Objectives:</p> <p>Training in Eastern wastewater treatment plant the largest wastewater treatment plant in Alex.</p> <ul style="list-style-type: none"><li>• Investigation study for wastewater flow rate in Sawari compound.</li><li>• Design the irrigation network using the WaterCAD software.</li><li>• Cost evaluation.</li><li>• Design wastewater treatment plant.</li></ul> |                                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                            |
|                              | 201900830                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mostafa Mohamed Ahmed Mohamed Metwalli |
|                              | 201900866                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Hossam Mohamed Mohamed Ahmed Hekrash   |



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## 16. The Planning and Design for Second Part of Fourth Branch Canal (4) of Toshka Project

|                              |                                                                                                                                                                                                                                                                 |                         |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                         |                         |
| <b>Project Title</b>         | Geometric Design of an Urban Area and Structural Assessment of Environmental Factors Affecting Pavement Performance                                                                                                                                             |                         |
| <b>Supervisor(S)</b>         | Dr. Ahmed Naguib ahmed.naguib.pt@Pua.edu.eg                                                                                                                                                                                                                     |                         |
| <b>Goals / Objectives</b>    | The project main objective is to provide a full detailed geometric design of an urban area according to the Egyptian code of practice and global standards in addition to the evaluation of pavement performance and its relation to the environmental factors. |                         |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                       | <b>Name</b>             |
|                              | 201701493                                                                                                                                                                                                                                                       | Eslam Osama Gomaa       |
|                              | 201801247                                                                                                                                                                                                                                                       | Eman Khaled Abdelhameed |
|                              | 201701451                                                                                                                                                                                                                                                       | Yousef Sabry            |



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## 17. Utilization of Ceramic Wastes as an Additive Material in Concrete Mixes

|                              |                                                                                                                                                                                                                                                  |                       |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                          |                       |
| <b>Project Title</b>         | Assessment of Distresses in Pavements Using Theoretical, Field, and Laboratory Techniques and Detailed Design of an Urban Area                                                                                                                   |                       |
| <b>Supervisor(S)</b>         | Dr. Ahmed Naguib                                                                                                                                                                                                                                 |                       |
| <b>Goals / Objectives</b>    | The project aims at studying the different distresses in pavements and evaluating performance using field and laboratory data to improve it in addition to a full and detailed design of an urban area that meets Egyptian and global standards. |                       |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                        | <b>Name</b>           |
|                              | 201900194                                                                                                                                                                                                                                        | Mostafa Mahmoud Fawzy |
|                              | 201801902                                                                                                                                                                                                                                        | Yahia Mohamed Samy    |
|                              | 201900853                                                                                                                                                                                                                                        | Mohanned Mohamed      |





## 18. Quality Control of Concrete Blocks containing Recycled Ceramic Wastes

|                              |                                                                                                                                                                                                                                       |                              |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>Program</b>               | Engineering                                                                                                                                                                                                                           |                              |
| <b>Project Title</b>         | Multi-purpose port alignment and design                                                                                                                                                                                               |                              |
| <b>Supervisor(S)</b>         | Prof. Dr Mohamed Elnagar Dr. Essam Eldin Fouad Dr. Dina Saleh                                                                                                                                                                         |                              |
| <b>Goals / Objectives</b>    | <ul style="list-style-type: none"><li>• Planning multi-purpose commercial port.</li><li>• Design for wet area.</li><li>• Alignment of the dry area of the multipurpose port.</li><li>• Design for berths using block types.</li></ul> |                              |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                             | <b>Name</b>                  |
|                              | 201901799                                                                                                                                                                                                                             | Omar mohamed ali             |
|                              | 201801339                                                                                                                                                                                                                             | Abdulrahman Mohammed Eltayeb |
|                              | 201801189                                                                                                                                                                                                                             | Ahmed saber Abdelgawad       |



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## 19. Light weight impermeable concrete blocks using Aluminum waste

|                              |                                                                                                                                                                                                                     |                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Program</b>               | Engineering                                                                                                                                                                                                         |                               |
| <b>Project Title</b>         | Solation for sediment in port navigation channel                                                                                                                                                                    |                               |
| <b>Supervisor(S)</b>         | Prof. Dr Mohamed Elnagar Dr. Essam Eldin Fouad Dr. Dina Saleh                                                                                                                                                       |                               |
| <b>Goals / Objectives</b>    | <ul style="list-style-type: none"><li>• Sediment transport regimen along the coastal zone area.</li><li>• Causes of sedimentation in access channel.</li><li>• Different solutions to minimize siltation.</li></ul> |                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                           | <b>Name</b>                   |
|                              | 201801867                                                                                                                                                                                                           | Nada Yahia Ahmed Alsaid Ahmed |
|                              | 201501330                                                                                                                                                                                                           | Omneya Ashraf Muhammad Saulit |
|                              | 201901443                                                                                                                                                                                                           | Omar Mohamed Ahmed            |



## 20. Green lightweight blocks using church red bricks

|                              |                                                                                                                                                                                                             |                          |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>Program</b>               | Engineering                                                                                                                                                                                                 |                          |
| <b>Project Title</b>         | Port alignment and design using plat form dek                                                                                                                                                               |                          |
| <b>Supervisor(S)</b>         | Prof. Dr Mohamed Elnagar<br>Dr. Essam Eldin Fouad<br>Dr. Dina Saleh                                                                                                                                         |                          |
| <b>Goals / Objectives</b>    | <ul style="list-style-type: none"><li>• Planning port.</li><li>• Design for wet area.</li><li>• Alignment of the dry area of the multipurpose port.</li><li>• Design for berths using plate form.</li></ul> |                          |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                   | <b>Name</b>              |
|                              | 201801789                                                                                                                                                                                                   | Mohamed Ezzat Serour     |
|                              | 202201292                                                                                                                                                                                                   | Abdelkhleq Khaled Qandil |
|                              | 201801721                                                                                                                                                                                                   | Maged Mohammed Elgendy   |



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## 21. Green lightweight blocks using crushed ceramic

|                              |                                                                                                                                                                                                                                                                        |                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <b>Program</b>               | Engineering                                                                                                                                                                                                                                                            |                                      |
| <b>Project Title</b>         | Planning and Design of Irrigation and Drainage Networks for Branch-1 Canal of El-Sheikh Zayed Canal in Toshka Region (Part A)                                                                                                                                          |                                      |
| <b>Supervisor(S)</b>         | A. Prof. Dr. Magdy M. Aboelela & Dr. Irine Mahfuz                                                                                                                                                                                                                      |                                      |
| <b>Goals / Objectives</b>    | <p>The objective of the project is to plan and design the irrigation and drainage networks for Part A of Branch-1 Canal of Toshka project.</p> <p>The area served of the Branch-1 Canal to be cultivated is about one hundred and twenty thousand (120,000) acres.</p> |                                      |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                              | <b>Name</b>                          |
|                              | 201801409                                                                                                                                                                                                                                                              | Mahmoud Hamdy Mahmoud Ali            |
|                              | 201801846                                                                                                                                                                                                                                                              | Moaaz Ahmed Belal                    |
|                              | 201801344                                                                                                                                                                                                                                                              | Abd Elrahman Mahmoud Abd Alla Hassan |



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## 22. Utilization of Cement Dust in the Production of Green building Blocks

|                              |                                                                                                                                                                                                                                                    |                           |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Program</b>               | Engineering                                                                                                                                                                                                                                        |                           |
| <b>Project Title</b>         | Design of Irrigation and Drainage Networks for Branch-1 Canal of El-Sheikh Zayed Canal in Toshka Region (Part B)                                                                                                                                   |                           |
| <b>Supervisor(S)</b>         | A. Prof. Dr. Magdy M. Aboelela & Dr. Irine Mahfuz                                                                                                                                                                                                  |                           |
| <b>Goals / Objectives</b>    | <p>The goal of the project is to design the irrigation and drainage networks for Part B of Branch-1 Canal of Toshka project.</p> <p>The area served of the Branch-1 Canal to be cultivated is one hundred and twenty thousand (120,000) acres.</p> |                           |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                          | <b>Name</b>               |
|                              | 201600445                                                                                                                                                                                                                                          | Mohamed Rashed Abdelgawad |
|                              | 201901119                                                                                                                                                                                                                                          | Mohamed Khamis Mohamed    |

## 23. Part 1: Concrete Shells Derived from Experimental Shapes

### Part 2: Design R.C residential building

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |
| <b>Project Title</b>         | <b>Part 1:</b> Concrete Shells Derived from Experimental Shapes<br><b>Part 2:</b> Design R.C residential building                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |
| <b>Supervisor(S)</b>         | Prof. Dr Hazem Bakry<br>Dr. Moustafa Marzouk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                          |
| <b>Goals / Objectives</b>    | <p>R.C. residential buildings design is an important component in the area of study for several civil engineers.</p> <p>This project comprises two components. By the end of the project, <b>students should:</b></p> <ul style="list-style-type: none"> <li>• Demonstrate understanding of knowledge on R.C Structure Design</li> <li>• Integrate knowledge from fundamental sciences to identify</li> <li>• Analyze different factors of RC design</li> <li>• Experimental techniques for structure main system</li> <li>• Utilize the basic design of different types of concrete elements.</li> <li>• Apply Egyptian codes of practice for the design.</li> <li>• Select the most appropriate structural system.</li> </ul> |                          |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Name</b>              |
|                              | 201801210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Ahmed Mohamed Hamadallah |
|                              | 201802566                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Khaled ashraf mostafa    |

## 24. Construction of Sports Stadium

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                      |
| <b>Project Title</b>         | Construction of Sports Stadium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                      |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed El-Ghandour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |
| <b>Goals / Objectives</b>    | <p>The stadium and its surroundings are being developed primarily to achieve the goal of a sustainable building design which includes the interactions between the environment, the building's structure, and its active building services.</p> <p>As a result of this holistic approach to planning, technical servicing to the structure will only have to be carried out when necessary. In addition, all the building sections should be operated as naturally as possible to cut back on resource consumption wherever possible.</p> <p>By the end of the project, <b>students should:</b></p> <ul style="list-style-type: none"> <li>• Identify stadium and its surroundings development.</li> <li>• Achieve the goal of a sustainable building design.</li> <li>• Promote the interactions between the environment, the building 's structure, and its active building services.</li> <li>• Operate as naturally as possible resource consumption wherever possible.</li> <li>• Improve oral presentation and technical report writing.</li> </ul> |                                      |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                          |
|                              | 201801199                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Ahmed Alaa El-Din Abdallah           |
|                              | 201801371                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Omar mohamed aboshaara               |
|                              | 201801493                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Omar fayez Abdelmonam elsaid mohamed |



## 25. Cars Factory Trussed Frame Hanger with Storage and Office Building Construction of Sports Stadium

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                   |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                   |
| <b>Project Title</b>         | Cars Factory Trussed Frame Hanger with Storage and Office Building                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed El-Ghandour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                   |
| <b>Goals / Objectives</b>    | <p>The basic goal of this Project is to Design this project to be a suitable building and meet the following:</p> <p>Meet the specification in the steel code that we used: Egyptian code of practice for steel construction and bridges.</p> <p>By the end of the project, students should:</p> <ul style="list-style-type: none"><li>• Design the structure system to be stable.</li><li>• Improve the Architectural Views by applying the specification of Egyptian executive regulations.</li><li>• Improve oral presentation and technical report writing.</li></ul> |                                   |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                       |
|                              | 201801516                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Ansam AbouZayd                    |
|                              | 201801397                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mohamed ehab mohamed abas darwish |
|                              | 201801734                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mohamed osama elgazzar            |



## 26. Gedela Factory (Steel Hangar)

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |
| <b>Project Title</b>         | Gedela Factory (Steel Hangar)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed El-Ghandour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            |
| <b>Goals / Objectives</b>    | <p>The project is owned by protection construction and design (PSC), the commissioning came to design and construct a textile factory to cover an area of about 6060 square meters.</p> <p>The factory consists of three parts with the middle part representing a store area with a crane track girder moving at all the length of the hangar to store the goods in the store by the crane and to store the machines and engines for the factory.</p> <p>By the end of the project, <b>students should:</b></p> <ul style="list-style-type: none"> <li>• Study the feasibility of textile factory design.</li> <li>• Identify the main properties of storage areas in factories.</li> <li>• Design the factory with needs and requirements.</li> <li>• Enhance the design performance.</li> <li>• Improve oral presentation and technical report writing.</li> </ul> |                                            |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Name</b>                                |
|                              | 201801402                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Mohamed Abdalla Abdelrehim Eltanany        |
|                              | 201701191                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ahmed yasser eid                           |
|                              | 201501294                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Mahmoud gamal abdelnasser ahmed elhalawany |



## 27. Design of multi-story residential building

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                          |                               |
| <b>Project Title</b>         | Design of multi-story residential building                                                                                                                                                                                                                                                                                                                                                                       |                               |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed El-Ghandour                                                                                                                                                                                                                                                                                                                                                                                    |                               |
| <b>Goals / Objectives</b>    | <p><b>The aim the project is to:</b></p> <ul style="list-style-type: none"><li>• Identify slabs, beams, columns, isolated footing types.</li><li>• Design slabs, beams, columns, isolated footing types.</li><li>• Design of frames.</li><li>• Learn selection of structural system selection of the suitable type of foundation.</li><li>• Practice presentation and technical report writing skills.</li></ul> |                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Name</b>                   |
|                              | 201801750                                                                                                                                                                                                                                                                                                                                                                                                        | Mohamed Adel Ahmed Alsharkawy |

## 28. Wastewater treatment and sewerage network design for Al Muruj compound in Alexandria, Egypt.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
| <b>Project Title</b>         | Wastewater treatment and sewerage network design for Al Muruj compound in Alexandria, Egypt.                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |
| <b>Supervisor(S)</b>         | Prof. Medhat Mostafa – Dr. Hossam El Sherbiny - Dr. Daa Seif                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |
| <b>Goals / Objectives</b>    | <p>In this project Al Muruj compound were selected, one of major project in Alexandria, Egypt.</p> <p><b>The main objectives:</b></p> <ul style="list-style-type: none"> <li>• Training in Eastern wastewater treatment plant the largest wastewater treatment plant in Alex.</li> <li>• Investigation study for wastewater flow rate in Al Muruj compound.</li> <li>• Design the sewerage network using the sewer CAD software.</li> <li>• Cost evaluation.</li> <li>• Design wastewater treatment plant.</li> </ul> |                                     |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Name</b>                         |
|                              | 201801260                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Basma khaled mohamed                |
|                              | 201801865                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nadeen Yousri Khalil                |
|                              | 201801704                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Rewan Mohamed Elsayed Ahmed Suliman |

## 29. Wastewater treatment and sewerage network design for Al Muruj compound in Alexandria, Egypt.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                           |
| <b>Project Title</b>         | Wastewater treatment and water network design for Al Muruj compound in Alexandria, Egypt.                                                                                                                                                                                                                                                                                                                                                                                                                 |                           |
| <b>Supervisor(S)</b>         | Prof. Medhat Mostafa<br>Dr. Hossam El Sherbiny<br>Dr. Diaa Seif                                                                                                                                                                                                                                                                                                                                                                                                                                           |                           |
| <b>Goals / Objectives</b>    | <p>In this project Al Muruj compound were selected, one of major project in Alexandria, Egypt.</p> <p><b>The main objectives:</b></p> <ul style="list-style-type: none"> <li>• Training in Eastern wastewater treatment plant the largest wastewater treatment plant in Alex.</li> <li>• Investigation study for water flow rate in Al Muruj compound.</li> <li>• Design wastewater treatment plant.</li> <li>• water network design using the water CAD software.</li> <li>• Cost evaluation.</li> </ul> |                           |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>               |
|                              | 201801212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Ahmed mohamed abbas       |
|                              | 201801703                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Rowan hassan ahmed        |
|                              | 201801513                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Marwan Ahmed Abd Al-Rahim |

### 30. Wastewater treatment and sewerage network design for Al Muruj compound in Alexandria, Egypt.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
| <b>Project Title</b>         | Wastewater treatment and irrigation network design for Al Muruj compound in Alexandria, Egypt.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |
| <b>Supervisor(S)</b>         | Prof. Medhat Mostafa<br>Dr. Hossam El Sherbiny<br>Dr. Diaa Seif                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
| <b>Goals / Objectives</b>    | <p>In this project Al Muruj compound were selected, one of major project in Alexandria, Egypt.</p> <p><b>The main objectives:</b></p> <ul style="list-style-type: none"> <li>• Training in Eastern wastewater treatment plant the largest wastewater treatment plant in Alex.</li> <li>• Investigation study for green areas to design the irrigation network system in Al Muruj compound.</li> <li>• Design wastewater treatment plant.</li> <li>• Irrigation network analysis using the water CAD software.</li> <li>• Cost evaluation.</li> </ul> |                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Name</b>            |
|                              | 201801856                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mohaned mimi shoaib    |
|                              | 201801291                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Ziad Abdelmohem Shoaib |
|                              | 201801348                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Abdallah Ahmed Abozena |



### 31. Wastewater treatment and sewerage network design for Al Muruj compound in Alexandria, Egypt.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>Program</b>               | Construction Engineering and Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |
| <b>Project Title</b>         | Wastewater treatment design and EIA study for Al Muruj compound in Alexandria, Egypt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |
| <b>Supervisor(S)</b>         | Prof. Medhat Mostafa<br>Dr. Hossam El Sherbiny<br>Dr. Daa Seif                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |
| <b>Goals / Objectives</b>    | <p>In this project Al Muruj compound were selected, one of major project in Alexandria, Egypt.</p> <p><b>The main objectives:</b></p> <ul style="list-style-type: none"><li>• Training in Eastern wastewater treatment plant the largest wastewater treatment plant in Alex.</li><li>• Investigation study for preparing environmental impact assessment for the Al Muruj compound.</li><li>• Design wastewater treatment plant.</li><li>• Study the possibility to develop the vision of the Al Muruj compound to be more sustainability.</li></ul> |                      |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Name</b>          |
|                              | 201801324                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Abdelrhman Ahmed     |
|                              | 201802008                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Amr Bayoumi Abdullah |



Pharos University in Alexandria

Faculty of Engineering

جامعة فاروس بالإسكندرية

كلية الهندسة



# **Electrical Engineering**

## **Department**

### **(EE400-1 & EE400-2)**







Pharos University in Alexandria

Faculty of Engineering

جامعة فاروس بالإسكندرية

كلية الهندسة



## 1. Secure Communication for Energy Efficient Smart Grids

|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>Program</b>                                                                                                                                                                                                                                                                            | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                            |
| <b>Project Title</b>                                                                                                                                                                                                                                                                      | Secure Communication for Energy Efficient Smart Grids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            |
| <b>Supervisor(S)</b>                                                                                                                                                                                                                                                                      | Dr. Mohamed Abdelwahab                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |
| <b>Goals / Objectives</b><br><br><br> | <p>Smart grids leverage Information and Communication Technologies (ICT) to provide a feature-rich power grid. Features include smart metering, energy efficiency, integration of distributed generation from renewable sources, demand-side management ... etc. Our focus in this project will be on the design and management of a secure communication infrastructure to be used in smart grids.</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>• Provide knowledge on smart grid technologies and their importance in our current environmentally aware society.</li> <li>• Identify the communication technologies used in smart grids.</li> <li>• Identify the security features in the current communication technologies.</li> <li>• Design and implement a secure communication system for demand-side management in smart grids.</li> <li>• Create a hardware prototype for the designed system.</li> </ul> |                                            |
| <b>Student Names and IDs</b>                                                                                                                                                                                                                                                              | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                                |
|                                                                                                                                                                                                                                                                                           | 201901606                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Aya Abdelmonaem Mohamed Saad Elkalea       |
|                                                                                                                                                                                                                                                                                           | 201900440                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Hager Basiony Hamdy Mohamed Othman Basiony |
|                                                                                                                                                                                                                                                                                           | 201901499                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mahmoud Mohamed Hashem Mohamed Gomaa       |
|                                                                                                                                                                                                                                                                                           | 201901226                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mohamed Tarek Mahrous Abdelfattah Shalash  |
|                                                                                                                                                                                                                                                                                           | 201802568                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Abed Ahmed Mohamed Ahmed Elsayed           |

## 2. Machine Learning for Security in Vehicular Networks

|                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>Program</b>                                                                                                                                                                                                                                                                                        | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                            |
| <b>Project Title</b>                                                                                                                                                                                                                                                                                  | Machine Learning for Security in Vehicular Networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                            |
| <b>Supervisor(S)</b>                                                                                                                                                                                                                                                                                  | Dr. Amgad Salama                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                            |
| <b>Goals / Objectives</b><br><br><br><br><br><br> | <p>Machine learning (ML) has become a desirable and practical method for offering successful solutions for a variety of application domains. Vehicular network is a significant application domain where ML-based techniques are found to be highly helpful to handle a variety of issues. It is susceptible to several types of assaults because vehicle nodes and/or infrastructure communicate wirelessly with one another. This project deals with various security challenges in vehicular communication through ML and its derivatives.</p> <p><b>The project objectives are:</b></p> <ul style="list-style-type: none"> <li>• Identify the fundamentals of vehicular networks and various communication kinds.</li> <li>• Consider modern vehicular network architectures.</li> <li>• Create and develop a hardware with a software defined radio (SDR).</li> <li>• Identify friendly as well as foe communications through combining ML techniques with the Vehicular Reference Misbehaviour (VeReMi) dataset, which is a dataset for the evaluation of misbehaviour detection mechanisms for VANETs (vehicular networks).</li> </ul> |                                            |
| <b>Student Names and IDs</b>                                                                                                                                                                                                                                                                          | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                                |
|                                                                                                                                                                                                                                                                                                       | 201900874                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Hadeer Khaled Ahmed Ali Shalan             |
|                                                                                                                                                                                                                                                                                                       | 201900188                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ahmed Mostafa Hassab Elnaby Ibrahim Halawa |
|                                                                                                                                                                                                                                                                                                       | 201901786                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mazen Amr Mohamed Ahmed Hassan             |
|                                                                                                                                                                                                                                                                                                       | 201900512                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mazen Ayman Abdelkhalek Afify Zayan        |
|                                                                                                                                                                                                                                                                                                       | 201901002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Zekra Tarek Mohamed Baioumy                |

### 3. Metal Detection Robot using AI for Mining

|                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <b>Program</b>                                                                                                                                                                                                                                                                                        | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |
| <b>Project Title</b>                                                                                                                                                                                                                                                                                  | Metal Detection Robot using AI for Mining                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |
| <b>Supervisor(S)</b>                                                                                                                                                                                                                                                                                  | Dr. Sanaa Abdel Dayem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |
| <b>Goals / Objectives</b><br><br><br><br><br><br> | <p>Robotics and Artificial Intelligence (AI) are two disciplines that are rapidly expanding, advancing, and holding endless potential for humanity's future. Researchers are interested in building robust and cooperative robots capable of performing complex tasks with astonishing speed and precision without human intervention. Metal detector robots are one of the robotics principles owing to its efficacy when compared to humanly controlled and relatively sluggish older ways. In this project, we will create a metal detector with an AI based decision making property, that will help to decide the best way to extract that metal. Using sensors, the device will collect all the needed information in a dataset that will later map down the area and draw down the best infrastructure, digging tools, soil and ore state to start the process with less cost and best efficiency.</p> <p><b>The project objectives are:</b></p> <ul style="list-style-type: none"> <li>• Integrate AI into metal detection robots to improve their performance.</li> <li>• Analyze the data collected by the robots using AI to recognize and classify different types of metallic objects based on their shape, size, and composition according to the dataset.</li> <li>• Increase the accuracy of localizing and mapping of the detected metallic objects using AI by analyzing the sensor data and combining it with other environmental information, such as 3D maps.</li> <li>• Enhance the data analysis and decision making of metal detection using AI by processing the sensors' data in real-time.</li> </ul> |                                         |
| <b>Student Names and IDs</b>                                                                                                                                                                                                                                                                          | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Name</b>                             |
|                                                                                                                                                                                                                                                                                                       | 201900216                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yahia Alaa Elwardany Ragab Shebl Ragab  |
|                                                                                                                                                                                                                                                                                                       | 201900979                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Nadine Wessam Assem Mohamed Elsaid Sakr |
|                                                                                                                                                                                                                                                                                                       | 201902005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Moamen Khaled Abdelkader Abdelmegied    |
|                                                                                                                                                                                                                                                                                                       | 201901414                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yasser Hamdy Mostafa Masoud Ahmed       |
|                                                                                                                                                                                                                                                                                                       | 201901748                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Olla Ata Abdelfattah Elshikh            |

#### 4. Health Monitoring of School Children Using the Internet of Medical Things

|                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>Program</b>                                                                                                                                                                                       | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Project Title</b>                                                                                                                                                                                 | Health Monitoring of School Children Using the Internet of Medical Things                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Supervisor(S)</b>                                                                                                                                                                                 | Dr. Mohamed Abdelwahab                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Goals / Objectives</b><br><br> | <p>According to the Egyptian Central Agency for Public Mobilization and Statistics children at the age of 14 and younger constitute almost one third (34.1%) of the population. Their health is a cornerstone for a healthy population and a promising future. Egypt's Sustainable Development Strategy (SDS) 2030 therefore displays strong commitment to improving children's health, as witnessed by considering the sixth pillar of the strategy. This pillar is entirely devoted to health issues. Moreover, one its listed challenged is: "modest technological and informational infrastructure".</p> <p>In this setting, the use of ICT for early recognition of health and development problems among children is extremely beneficial to the Egyptian society and state. Moreover, it alleviates future financial and logistics burdens of the healthcare system.</p> <p>This project uses wireless sensors, networking and Internet technologies, and storage servers, to measure, collect, store and analyze data needed to assess growth, health and development of school children. Data to be measured and collected are values of parameters, both medical and environmental, that affect important physical and mental developmental aspects of school children. Measurements of these medical and environmental parameters will take place at school locations. Amply equipped vehicles carrying required personnel will travel to school locations to gather medical data by using non-invasive biomedical sensors, and environmental data by using pollution monitoring sensors.</p> <p>Using the Internet, sensor readings will be transmitted in real-time to storage servers where they are analyzed to extract information pertaining to children's healthy growth.</p> |



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|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
|                              | <b>The project's objectives are:</b> <ul style="list-style-type: none"><li>• Design sensor networks in an Internet of Things (IoT) framework.</li><li>• Consider issues in the collection and storage of large amounts of sensitive data.</li><li>• Identify the standards used in the storage of Electronics Health Records (EHRs).</li><li>• Promote about benefits of digitalization of health records.</li></ul> |                                            |
|                              | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Name</b>                                |
| <b>Student Names and IDs</b> | 201900129                                                                                                                                                                                                                                                                                                                                                                                                            | Fady Montaser Roshdy Youssef               |
|                              | 201900381                                                                                                                                                                                                                                                                                                                                                                                                            | Moamen Elsayed Morshedy Mohamed Awad       |
|                              | 201900056                                                                                                                                                                                                                                                                                                                                                                                                            | Elsayed Abdallah Elsayed Abdallah Elhemaly |
|                              | 201900123                                                                                                                                                                                                                                                                                                                                                                                                            | Ahmed Osama Fouad Elsayed Badawy           |
|                              | 201900413                                                                                                                                                                                                                                                                                                                                                                                                            | Abdullah Mohamed Abdullah Abdalkhalak      |

## 5. Secure Communication for Smart Home Based on IOT System

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| <b>Program</b>                                                                                                     | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |
| <b>Project Title</b>                                                                                               | Secure Communication for Smart Home Based on IOT System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                          |
| <b>Supervisor(S)</b>                                                                                               | Dr. Sanaa Abdel Dayem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          |
| <b>Goals / Objectives</b><br><br> | <p>The recent growth of the Internet of Things (IoT) and cloud computing have introduced new requirements for secure digital communication. Comprehensively securing connected devices is more important today than ever before, yet there is no one-size-fits-all approach to internet security. Each embedded solution has different requirements, and no security protection can safeguard against all the vulnerabilities that exist.</p> <p>This project provides secure communication for IOT based smart home system.</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>Identify various approaches to securing internet communication and the challenge of implementing these security methodologies correctly.</li> <li>Create a balance among competing approaches and priorities, including development costs and time commitments.</li> <li>Provide a hardware prototype for the designed system.</li> </ul> |                                          |
| <b>Student Names and IDs</b>                                                                                       | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                              |
|                                                                                                                    | 201900469                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mostafa Khaled Mostafa Mahmoud Eltantawy |
|                                                                                                                    | 201900284                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mohamed Hany Shaban Khemar               |
|                                                                                                                    | 201900050                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ahmed Ezat Abdelhamid Ali Elsehemi       |
|                                                                                                                    | 201900279                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Omar Mostafa Ahmed Youssif               |
|                                                                                                                    | 201801787                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mohamed Abdelhamid Diab Mohamed Gad      |

## 6. Indoor Prototype Visible Light Communication (VLC) System for Data Transmission utilizing Li-Fi Technology

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| <b>Program</b>                                                                                                                                                                                        | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Project Title</b>                                                                                                                                                                                  | Indoor Prototype Visible Light Communication (VLC) System for Data Transmission utilizing Li-Fi Technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Supervisor(S)</b>                                                                                                                                                                                  | Dr. Engy El Nayal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p><b>Goals / Objectives</b></p>   | <p>Li-Fi that is light fidelity is one of the technologies in wireless optical communication sector. It is also known as Visible Light Communication (VLC) which works the same way as optical fibre, but the medium of transmission is the free space. It is wireless technology similar to Wi-Fi, which is perfect for data transmission through radio waves, but Li-Fi uses Light-Emitting Diodes (LEDs) for transmitting data. The light emitted from LEDs can carry information and provide illumination simultaneously. The VLC uses LED as the transmitter which sends data by blinking the light at high speed which is unnoticeable to the human eyes. The receiver such as a photodetector receives the flashlight at high speed and decodes the transmitted data. In the VLC system, the transmitter and the receiver must be in the line of sight of each other. One of the several advantages of VLC is that it can be easily implemented since it is economical, compact, low power and prevents radio interference. Also, wireless data transmission via Li-Fi is about 100 times faster than Wi-Fi in confined area. Additionally, it offers enhanced security, increased bandwidth, and improved efficiency.</p> |





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|                              | <b>This project's objectives are:</b><br><br>Create and execute a data transmission prototype system that utilizes Li-Fi technology for an indoor VLC system and uses the light emitted from the ceiling headlights to transmit data while using a photodiode as a receiver.<br><br>Provide an efficient, low-cost, secure, digitally controlled and fast data transmission technology that can be used as an alternative to conventional Wi-Fi data transmission technology.<br><br>Investigate the factors affect the system performance. |                                          |
|                              | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Name</b>                              |
| <b>Student Names and IDs</b> | 201901177                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Mohamed Alaa eldin Soliman Ahmed Ibrahim |
|                              | 201901224                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Osama Mohammed Mohammed Mohammed         |
|                              | 201901921                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Fares Hassan Ibrahim Hassan Abdelsamad   |
|                              | 201901232                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ahmed Tarek Abdelsalam Raslan            |
|                              | 201901127                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Zeyad Ashraf Mostafa Alattar             |

## 7. Design and Implementation of OBC for a CubeSat

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| <b>Program</b>            | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Project Title</b>      | Design and Implementation of OBC for a CubeSat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Supervisor(S)</b>      | Ass. Prof. Hussein Seleem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Goals / Objectives</b> | <p>CubeSat is a standardized type of miniaturized satellite that is used for various space missions. It is built using a cubic structure with dimensions of 10 centimetres per side, hence the name "CubeSat." CubeSats are commonly used for educational, research, and technology demonstration purposes. The CubeSat structure typically consists of an aluminium or composite material frame that provides structural integrity and support for the different components. CubeSats are equipped with various subsystems to perform different functions. These subsystems include:</p> <ul style="list-style-type: none"> <li>• Power Subsystem: solar panels to generate power from sunlight. The power is stored in batteries, which provide energy during eclipse (when the satellite is not in direct sunlight).</li> <li>• Communication Subsystem: they generally use UHF, VHF, or S-band frequencies for downlink and uplink communication with ground stations.</li> <li>• Attitude Determination and Control Subsystem (ADCS): responsible for maintaining the CubeSat's orientation and stability in space. It includes sensors such as sun sensors, magnetometers, and gyroscopes, as well as actuators like reaction wheels or magnetorquers.</li> <li>• Command and Data Handling (C&amp;DH): manages the onboard computer, data storage, and interfaces with other subsystems. It handles the execution of commands, data processing, and telemetry.</li> <li>• Thermal Control Subsystem: to regulate their temperature to prevent overheating or freezing. The thermal control system uses heaters, radiators, and insulation to maintain the desired temperature range.</li> </ul> |



| Student Names and IDs | <ul style="list-style-type: none"><li>• Payload: primary objective of the CubeSat mission. This project design and develop the Onboard Computer (OBC) for a CubeSat.</li></ul> <p><b>This project's objectives are:</b></p> <ul style="list-style-type: none"><li>• Identify the requirements for the OBC based on the mission objectives and the overall CubeSat system requirements.</li></ul> |                                         |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|                       | ID                                                                                                                                                                                                                                                                                                                                                                                               | Name                                    |
|                       | 201900847                                                                                                                                                                                                                                                                                                                                                                                        | Alaa Hany Mohamed Elsayed Yahia         |
|                       | 201900572                                                                                                                                                                                                                                                                                                                                                                                        | Hoda Ashraf Ahmed Mohamed Nossier       |
|                       | 201902332                                                                                                                                                                                                                                                                                                                                                                                        | Ahmed Mohamed Ahmed Mohamed Abd Elghany |
|                       | 201901703                                                                                                                                                                                                                                                                                                                                                                                        | Ahmed Mohamed Masoud Mahmoud Elsharkawy |
|                       | 201902439                                                                                                                                                                                                                                                                                                                                                                                        | Mohammed Qoutb Elsayed Elsayed          |

## 8. Cell Outage Compensation for 5G Self-Organizing Networks

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| <b>Program</b>               | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| <b>Project Title</b>         | Cell Outage Compensation for 5G Self-Organizing Networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                           |
| <b>Supervisor(S)</b>         | Dr. Heba Gamal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |
| <b>Goals / Objectives</b>    | <p>This project presents a solution to overcome the cell outage in 5G mobile network. Whenever a cell in a cluster is down, the 5G network must organize itself by making other transmitting cells compensate for the cell that went down. This is done by using deep reinforcement learning algorithm that control the antenna beam of the cell transmitting tower in terms of its power and direction in a reliable and time efficient response so as to speed up the process of self-healing in the network.</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>• Design the 5G network using MATLAB simulation.</li> <li>• Model the cell outage compensation scenarios.</li> <li>• Implement the deep learning algorithm on FPGA kit.</li> </ul> |                                           |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                               |
|                              | 201900090                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Karem Osama Saied Basiouny Elkhawaga      |
|                              | 201901399                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Reham Mohab Mohammed Salama               |
|                              | 201901721                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Fouad Mohamed Fouad Mohamed Elkastawy     |
|                              | 201901877                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Basel Abdallah Abdelkader Abdrabou Shahin |
|                              | 201801357                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Essam Amgad Essameldin Borhamy Khedr      |

## 9. Design Reconfigurable IRS in 6G.

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| <b>Program</b>                                                                                                                                                                                          | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                         |
| <b>Project Title</b>                                                                                                                                                                                    | Design Reconfigurable IRS in 6G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |
| <b>Supervisor(S)</b>                                                                                                                                                                                    | Dr. Rana Ghalab                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |
| <b>Goals / Objectives</b><br><br><br> | <p>Reconfigurable Intelligent Reflecting Surface (IRS) is one of promising technologies for the 6G next generation mobile networks. The most popular IRS feature is controlling the propagation characteristics for the transmission channel. The main principle in IRS system that achieved the maximum performance is depending on adjusting the incident and reflecting angle for IRS signals. IRSs possess advantages, such as low profile, light weight, and conformal geometry, which enable them to be easily attached/removed on/from the wall or ceiling, thus providing high flexibility and superior compatibility for practical implementation. In this project, we will illustrate the system model for the IRS communication system.</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>Identify the fundamentals and principles of the IRS network in order to design a planner for IRS.</li> <li>Study the IRS practical applications in the several wireless systems.</li> <li>Simulate the IRS communication system using MATLAB.</li> <li>Analyse the transmitted power and the change of the incident angle for IRS signals.</li> <li>Compare between the IRS systems and decode and forward (DF) relay communication network to illustrate the benefits of the IRS over DF.</li> <li>Develop a practical model for wideband signal transmission using OFDM modulation scheme in IRS assisted system.</li> <li>Evaluate and enhance the system's performance through analysing the Signal to Noise Ratio (SNR) and outage probability.</li> </ul> |                                         |
| <b>Student Names and IDs</b>                                                                                                                                                                            | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                             |
|                                                                                                                                                                                                         | 201900222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Abdelrahman Mohamed Abdelmonem Saleh    |
|                                                                                                                                                                                                         | 201902320                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Esraa Ahmed AbdElalim Helal             |
|                                                                                                                                                                                                         | 201900102                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Ibrahim Hossam-Elden Ali Mohamed Ali    |
|                                                                                                                                                                                                         | 201901128                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mahmoud Ashraf Mohammed Algamal         |
|                                                                                                                                                                                                         | 201802076                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Amr Khaled Abdelhalim Atta Abdalla Nagm |

## 10. Antenna Design for Wireless Body Area Networks

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |
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| <b>Program</b>               | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |
| <b>Project Title</b>         | Antenna Design for Wireless Body Area Networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                        |
| <b>Supervisor(S)</b>         | Dr. Heba Abdelhamid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |
| <b>Goals / Objectives</b>    | <p>The numerous real-time monitoring applications make extensive use of wireless body area networks. Wearable antennas are used in these networks for data transmission and reception for systems related to healthcare. A wearable antenna is one that is incorporated into the wearer's clothing. Numerous uses for a wearable antenna include GPS navigation, military use, and fitness tracking for athletes.</p> <p>In this project a low-profile wearable antenna is designed.</p> <p>The project's objectives are:</p> <ul style="list-style-type: none"> <li>• Identify the requirements for an efficient design of a wearable antenna for wireless body area communication.</li> <li>• Study and analyze and effect of the human body on wearable antenna.</li> <li>• Implement and analyze the radiation and directivity patterns of the design antenna.</li> <li>• Analyze the parameters required for an efficient wearable antenna such as return loss, radiation pattern, gain, efficiency ... etc.</li> </ul> |                                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Name</b>                            |
|                              | 201901872                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Youssef Adel Abdulmoneim Abdo Elshazly |
|                              | 201901763                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mohamed Moustafa Ahmed Soliman Abass   |
|                              | 201900192                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mohamed Atef Sabry Mahrous Ali         |
|                              | 201901247                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Youssef Mohamed Bakr Said Bakr         |
|                              | 201901954                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mazen Tamer Shawkat Ghareeb Alatraby   |

## 11. Smart Electrical Design of Hospital: The Future of Health Care Facilities

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| <b>Program</b>               | Electronics and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                               |
| <b>Project Title</b>         | Smart Electrical Design of Hospital: The Future of Health Care Facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                               |
| <b>Supervisor(S)</b>         | Prof. Dr. Mahmoud El-Gammal-Dr. Sahar Moussa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |
| <b>Goals / Objectives</b>    | <p>The efforts off the New Republic include the digitization of the health sector to provide integrated health care with the highest quality standards, as well as the achievement of Egypt Vision 2030 objectives.</p> <p>This is demonstrated in:</p> <ul style="list-style-type: none"> <li>• Digital Recording System of Births and Deaths.</li> <li>• Information Structure of Vaccination System Project.</li> <li>• Smart Hospitals. The goal of this project is to enhance the students' educational capabilities to deal with the electrical design of smart hospitals in accordance with Egypt's Vision 2030.</li> <li>• The project satisfies also the outcomes of the competencies based educational quality system that is compatible with recent labour market requirements in the digital age and new smart cities of Egypt.</li> </ul> <p>The project's objectives are:</p> <ul style="list-style-type: none"> <li>• Follow the electrical codes and standards within healthcare such as NFPA 99, ASHRAE 170, NFPA 110 and many others. In order to establish a criteria for safe levels of health care services to minimize the hazards of fire, explosion, and electricity shocks.</li> <li>• Identify the electrical load study requirements and implement a successful healthcare building energy management through predicting an accurate load of hospital for energy consumption.</li> <li>• Identify the sustainable electrical design requirements in order to reduce consumption of non-renewable resources, install distributed generation system (photovoltaic solar/green hydrogen battery storage systems), minimize waste, and create healthy and productive environments.</li> <li>• Identify the smart electrical design requirements which includes designing smart lighting, smart micro-grid, automation of smart hospital through Building Management Systems (BMS) and constructing Internet of Medical Things (IoMT).</li> </ul> |                                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Name</b>                                   |
|                              | 201902531                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mohammad Kamal El deen Mohamed Mohamed Hassan |



Pharos University in Alexandria

Faculty of Engineering

جامعة فاروس بالإسكندرية

كلية الهندسة



|  |           |                                        |
|--|-----------|----------------------------------------|
|  | 201900019 | Ahmed Essam Ibrahim Abdelazim Elgammal |
|  | 201901239 | Mohamed Mostafa Kabary Mohamed Ahmed   |
|  | 201901175 | Fares Ahmed Sabri Ali Ahmed Herisha    |



## 12. Design and Fabrication of PUA Bladeless Wind Turbine

|                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                        |
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| <b>Program</b>                                                                                                                                                                                                                                                                                                                                                                                  | Electrical Power and Control Engineering & Mechanical Power Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |
| <b>Project Title</b>                                                                                                                                                                                                                                                                                                                                                                            | Design and Fabrication of PUA Bladeless Wind Turbine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                        |
| <b>Supervisor(S)</b>                                                                                                                                                                                                                                                                                                                                                                            | Dr. Gamal Mahmoud - Dr. Nabil Rashwan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                        |
| <b>Goals / Objectives</b><br><br><br><br><br><br><br><br> | <p>Bladeless is designed to solve the problems of traditional wind turbines, such as operational costs, noise, and impacts on birds. Owing to its simple shape and light weight of 15 kg, its material costs are reduced. It does not require a nacelle or blades that are the most expensive parts of a conventional wind turbine, and the manufacturing costs are estimated to be about 53% of that of a conventional wind turbine. The goal of this project is to design and fabricate bladeless wind turbine. The design including two main parts electrical system and mechanical system. Systems sharing between Electrical Engineering Department (Electrical Power and Control Engineering Program) and Mechanical Engineering Department (Mechanical Power Engineering Program).</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>• Design the bladeless wind turbine to supply clean and stable electrical energy.</li> <li>• Evaluate and analyse the design performance involving a simple and low-cost bladeless wind turbine.</li> <li>• Harmonize the legislation of the Egypt sustainable development plan (Egypt's Vision 2030) for green society.</li> <li>• Provide the students with the skills necessary for effective communication, teamwork, leadership, and collaboration across disciplines, taking into account societal values and professional ethics.</li> </ul> |                                        |
| <b>Student Names and IDs</b>                                                                                                                                                                                                                                                                                                                                                                    | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Name</b>                            |
|                                                                                                                                                                                                                                                                                                                                                                                                 | 201802560                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Ahmed Hessain Fawzy Sedik              |
|                                                                                                                                                                                                                                                                                                                                                                                                 | 201801329                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Abdelrahman Ayman Moustafa Kamel Eshak |
|                                                                                                                                                                                                                                                                                                                                                                                                 | 201801354                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Abd Elmoneem Moheb Abd Elaziz Mohamed  |
|                                                                                                                                                                                                                                                                                                                                                                                                 | 201900458                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Aren Mosad Mustafa                     |
|                                                                                                                                                                                                                                                                                                                                                                                                 | 202100212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Dania Abdelkader Mohamed               |
|                                                                                                                                                                                                                                                                                                                                                                                                 | 201900566                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Muhammad Amir Abd Elhamid              |

### 13. Monitoring and Control of Smart Greenhouses Using IoT and Solar PV

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| <b>Program</b>                                                                                                                                                                                                | Electrical Power and Control Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Project Title</b>                                                                                                                                                                                          | Monitoring and Control of Smart Greenhouses Using IoT and Solar PV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Supervisor(S)</b>                                                                                                                                                                                          | Prof. Dr. Ahmed Abdallah                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Goals / Objectives</b><br><br><br><br> | <p>The Food and Agriculture Organization of the United Nations (FAO) estimates that, in 2050, the food production must be increased by 70% to meet the world's food needs. The current agriculture systems are likely capable of producing enough food, but to do so in the future and sustainable manner will require major transformations. Smart agriculture is considered one of the most promising solutions. Transformations from traditional agriculture, where the farmer has to measure regularly the various environmental parameters to be sure that the right crops at right time, to smart agriculture which depends upon monitoring and controlling effect of environmental factors on plant growth to achieve optimal health and have a high-quality crop. Therefore, there is a need to adopt a system, which overcomes the problems associated with traditional farming, climate changes and a shortage of resources. The adopted system is done by using automatic greenhouse monitoring and controlling, which replaces the direct supervision of the human. Greenhouse is a building where plants are grown in a controlled manner, where environment conditions are optimized for plant growth. Greenhouse must be provided with smart sensors network, hardware and software to control and monitoring greenhouse parameter which will achieve favorable environmental conditions to plants for optimal growth. The PV panels generate power to run the greenhouse air-conditioning system, lighting, fans, heaters, pumps (for controlled watering systems that provide water and fertilizers), vents that open and close in response to the temperature, blinds and reticulation system to provide an optimum growing environment. Internet of Things (IOT) has played a vital role in monitoring plants health. The proposed system is based upon using an IoT Gateway, the wireless systems turn daily farming data into a more meaningful decision-making. Sensors for temperature, humidity, pH, and luminosity in the greenhouse pass the data to the local gateway, which transmits data to processor-based gateway, and then uploads all the information to the cloud system. By comparing the already stored value with the collected value, the results can be determined. The authenticated mobile application development can be used to monitor the parameter from anywhere. The principal goal of this project is to design, monitor and control the smart greenhouse prototype based on a PV system and IOT.</p> <p><b>The project's objectives are:</b></p> |

- Deal with various sensors, actuators and microcontrollers.
- Design and build prototypes of monitoring and control of smart greenhouses.
- Design and build solar PV system.
- Monitor the greenhouse environment to maintain the optimal conditions for plant growth.
- Prevent thefts and improve security.
- Access and monitor smart greenhouses automation from anywhere.
- Design and develop a notification system to send alerts or other useful data (email and messages).
- Increase farm security and energy efficiency.

| Student Names and IDs | ID        | Name                                          |
|-----------------------|-----------|-----------------------------------------------|
|                       | 201900214 | Ahmed Abdelrazek Ahmed Gomaa Shabaan Aboklela |
|                       | 201901180 | Mostafa Ahmed AbdElmeniom Mahmoud Ibrahim     |
|                       | 201900098 | Amr Mahmoud Mohamed Mahmoud Belal             |
|                       | 201801708 | Fares Ahmed Mamdouh Ahmed                     |
|                       | 201801225 | Adham Mahmoud Elsayed Gomaa Abd Elkader       |

## 14. Smart City with Internet of Things (IoT)

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| <b>Program</b>               | Electrical Power and Control Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |
| <b>Project Title</b>         | Integration of Intelligent BMS for Smart & Sustainable Built Environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed Hamdy and- Dr. Yasser El-Kamshoshy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                          |
| <b>Goals / Objectives</b>    | <p>A Building Management System (BMS) is a computer-based control system installed in buildings that controls and monitors the building's mechanical and electrical equipment such as ventilation, lighting, power systems, fire systems, and security systems. A BMS consists of software and hardware; the software program, usually configured in a hierarchical manner, can be proprietary, using such protocols as C-bus, Profibus, and so on. Recently, however, new vendors are producing BMSs that integrate using Internet protocols and open standards such as Device Net, SOAP, XML, BACnet, Lon Works and Modbus BMS and KNX is a standardized, open and interoperable protocol for building automation and control that is approved by several international organizations, such as ISO, CENELEC, ANSI, and GB/T. The KNX Association is the world's leading home and building control standard. The traditional BMS is at risk of obsolescence due to rapid digital advances in the field of smart building automation. One of the most significant recent developments in BMS has been the advances in smart building automation. Smart building automation means that, through a combination of sensors and control units, it is possible to optimize BMS in response to real-time information of your building and increase efficiency and sustainability. The goal of this project is to design the electrical structure which meets the recent trends and standards in the Egyptian integrated residential compound areas that apply smart technology, building management systems, utilization of distributed generation sources and utility smart grid.</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>Identify the design requirements which includes BMS or KNX installation of units using modern smart technology, for tower residential building besides commercial areas, garage areas and landscape services.</li> <li>Implement the BMS for energy conservation in the lab using the appropriate components.</li> <li>Consider the design scheme for one dwelling component including requirements of BMS.</li> </ul> |                                          |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Name</b>                              |
|                              | 201900210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ahmed Elsayed Shebl Abdelkhalek Zarzorah |
|                              | 201900824                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Hussein Ahmed Hussein Hassan Shahin      |
|                              | 201901221                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Zyad Ahmed Mousa Mohamed Sakr            |
|                              | 201900647                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Nour Atef Abdelghani Abdeljawad Ibrahim  |
|                              | 201801214                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ahmed Mohamed Abdelraouf Alaam           |

## 15. Life Assessment Insulation Techniques for MV Motors

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| <b>Program</b>               | Electrical Power and Control Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                        |
| <b>Project Title</b>         | Life Assessment Insulation Techniques for MV Motors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |
| <b>Supervisor(S)</b>         | Dr. Yasser El-Kamshoshy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                        |
| <b>Goals / Objectives</b>    | <p>Life expectancy tests and insulation condition assessment for Medium Voltage (MV) motors, generators and transformers are the main goals of our project. Ironically, most maintenance managers, even today, still face this dilemma, as they invest in condition monitoring tools and regularly conduct “conventional” assessments like IR/PI, Tan delta, partial discharge but yet have such breakdowns. It has been found that conventional tests like IR/PI provide very limited information and difficult to correlate with modern insulation systems that employ epoxy-resins and have elaborate processes like VPI. Approach was designed and aimed at identifying various defects and relate them to the thermal, electrical, ambient and mechanical stresses acting on insulation system and the effects that they produce. It is thus available as package of offline checks – DC as well as AC that covers information on contamination – type, severity, location, de-polymerization, ageing, coil looseness, crack formation, erosion due to partial discharge, state of resin cure, condition of stress grade system, condition of corona protection shield and so much more.</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>Identify the present condition of the subject electrical objects by evaluating operational and historical data, including records of maintenance and outages.</li> <li>Perform offline measurements for further diagnosis so as to identify defects/malfunction conditions in the subject electrical objects, particularly those that have led or could lead to loss of generation or production.</li> <li>Determine the residual life of the stator winding insulation based on models that describe predictable failure mechanisms.</li> <li>Identify a course of action to improve the reliability and availability of the subject electrical objects being M.V motors, generators and transformers.</li> <li>Report delivery summarizing the above.</li> </ul> |                                        |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Name</b>                            |
|                              | 201901657                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Abdelrhman Magdy Mohy Mahmoud Ibrahim  |
|                              | 201901210                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Hossam Eldin Abdelrhman Hassan Mohamed |
|                              | 201900587                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ahmed Hosni Ismail Abdulmajeed Shahata |
|                              | 201901171                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Omar Khalid Hassan Fathallah Hassan    |
|                              | 201900195                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ahmed Waleed Elsayed Mohamed Elsayed   |

## 16. Smart Transportation Systems Based on IOT

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| <b>Program</b>               | Electrical Power and Control Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                         |
| <b>Project Title</b>         | Smart Transportation Systems Based on IOT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |
| <b>Supervisor(S)</b>         | Dr. Salah Helmy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |
| <b>Goals / Objectives</b>    | <p>Smart transportation is considered to be one of the most promising applications in all application scenarios of Internet of Things (IoT). With the development of modern urbanization, traffic problems have become more and more serious, and traditional solutions have been unable to meet new traffic problems. Therefore, smart transportation has emerged as the times require. Smart transportation refers to the use of advanced information technology, data transmission technology and computer processing technology to effectively integrate into the transportation management system. Smart Transportation Systems (STS) aim to provide innovative services relating to different modes of transport and traffic management. The goal of this project is to design a system which concerns gathering information about trucks based on Weigh-In-Motion (WIM) technology and image processing technique for license plate detection with central processing technology and then sending this data to a mobile application.</p> <p><b>The project's objectives are:</b></p> <ul style="list-style-type: none"> <li>• Collect the traffic flow load information including the weight and the spatial-temporal information of the vehicles by using the STS.</li> <li>• Develop the WIM system to protect the road pavement and extend the infrastructure lifespan, identify offending vehicles, reduce harmful emissions, vibrations, noise, and fuel consumption.</li> <li>• Develop the WIM system to allow the control of vehicle weights without disrupting traffic and freight operations by using smart sensors to get the vehicle's dimensions, weight, and speed.</li> <li>• Utilize the image processing based on central processing techniques to get vehicle license plate numbers.</li> <li>• Enhance the traffic safety and management through cloud-based vehicle tracking system used to determine the spatial-tempo information of vehicles.</li> <li>• Investigate the containing of the vehicle of different materials by using a source of X-rays or gamma rays.</li> </ul> |                                         |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                             |
|                              | 201901890                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Marwan Sameh Mohammed Mohammed Moustafa |
|                              | 201901445                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mohamed Ahmed Eid Mohamed Abdelghafar   |
|                              | 201902294                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Shawky Fared Shawky Abdelhak Amin       |
|                              | 201501286                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mohamed Alaa Eldin Mohamed Ahmed Nassar |





Pharos University in Alexandria

Faculty of Engineering

جامعة فاروس بالإسكندرية

كلية الهندسة



# **Mechanical Engineering Department (EM400-1 & EM400-2)**



## 1. Unmanned Surface Vessel USV

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Program</b>               | Mechanical Power + Manufacturing Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |
| <b>Project Title</b>         | Unmanned Surface Vessel USV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |
| <b>Supervisor(S)</b>         | Assoc. Prof. Ahmad Anwar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge.</p> <p>The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"><li>• To investigate the method of design the Small Boats.</li><li>• Calculate the different loads affected the small boat hull.</li><li>• Use the FPGA for designing the control system.</li><li>• Investigate the technical methods for avoid obstacles.</li><li>• Implement the Hull from glass fiber / polyester.</li></ul> |                            |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Name</b>                |
|                              | 201901390                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Moustafa mahmoud kassem    |
|                              | 201900204                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Seif Eldeen Haytham gamal  |
|                              | 201901388                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Youssef gaber Abdallah     |
|                              | 201901200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Abdelrahman Huissen Hassan |



## 2. Peltier Refrigeration Using Solar Energy

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Program</b>               | Industrial & Manufacturing Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |
| <b>Project Title</b>         | Peltier Refrigeration Using Solar Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |
| <b>Supervisor(S)</b>         | Dr. Noha Alaa El-Din                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge.</p> <p>The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• To make use of environmentally friendly refrigeration system.</li> <li>• To investigate the cost and effectiveness of the design or TE module.</li> <li>• To study the results coming out from this project.</li> <li>• To compare cost with vapor compression refrigeration cycles.</li> <li>• To construct a test on the behavior and specifications of a TEC heat exchanger operating in a cooler box environment.</li> </ul> |                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Name</b>                   |
|                              | 201901885                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Andrew Magdy Kamal Abdelsayed |
|                              | 201900241                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yousef Adel Takrony           |
|                              | 201900133                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Saeed Osama Saeed             |
|                              | 201901889                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Marshilino Heshmat Samaan     |
|                              | 201901027                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Marwan tarek Mohamed          |

### 3. Design of Central Air-Conditioning (HAVC), With Experimental Model

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>Program</b>               | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |
| <b>Project Title</b>         | Design of Central Air-Conditioning (HAVC), With Experimental Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |
| <b>Supervisor(S)</b>         | Associate Professor Dr. Ahmed Helmy Abdel Aziz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge. The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• provide comfortable and healthy indoor environments for occupants of conditioned spaces.</li> <li>• Provide heating and cooling from central plant or rooftop units.</li> <li>• Implement energy-efficient and environmentally friendly air conditioning technologies.</li> <li>• Condition the air, transport it, and introduce it to the conditioned space.</li> <li>• To serve multiple spaces from one base location.</li> </ul> |                              |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Name</b>                  |
|                              | 201900080                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | mohamed ayman ahmed eldarder |
|                              | 201900465                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | zeyad helmy mansor           |
|                              | 201901447                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ali khalid abdou             |
|                              | 201902440                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | emadeldin elsayed mohamed    |
|                              | 201902521                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Nabil Gomaa Mohamed          |

#### 4. Thermal Performance Analysis of Photovoltaic (PV) Integrated with Novel Design of Flat Plate Solar Collector for Domestic Hot Water

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                             |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Program</b>               | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             |
| <b>Project Title</b>         | Thermal Performance Analysis of Photovoltaic (PV) Integrated with Novel Design of Flat Plate Solar Collector for Domestic Hot Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                             |
| <b>Supervisor(S)</b>         | Dr. Mohamed Alnakeeb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge.</p> <p>The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• Develop a cooling system for photovoltaic solar cells.</li> <li>• Power residential buildings in Egypt using the developed cooling system.</li> <li>• Generate electricity and heat concurrently.</li> <li>• Study and analyze the Photovoltaic Thermal Collector (PVT) technology.</li> <li>• Use PV SYST software to model and simulate a grid-connected solar system.</li> <li>• Construct a PVT module based on numerical optimization results.</li> <li>• Account for the conduction and convection heat transfer mechanisms in the PVT system.</li> </ul> |                             |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Name</b>                 |
|                              | 201901137                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ahmed Mohamed Younes        |
|                              | 202003880                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Khaled Refaat Muhammad      |
|                              | 201900529                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mohamed Yasser Abdalaziz    |
|                              | 201901020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mohamed Ahmed Ahmed Basuony |

## 5. Design and Fabrication of a Novel PUA Bladeless Wind Power Generation System

|                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Program</b>                                                                                                                                                                                                                                                                            | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                        |
| <b>Project Title</b>                                                                                                                                                                                                                                                                      | Design and Fabrication of PUA Bladeless Wind Turbine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                        |
| <b>Supervisor(S)</b>                                                                                                                                                                                                                                                                      | Dr. Gamal Mahmoud & Dr. Nabil Rashwan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |
| <b>Goals / Objectives</b><br><br><br> | <p>Bladeless is designed to solve the problems of traditional wind turbines, such as operational costs, noise, and impacts on birds.</p> <p>Owing to its simple shape and light weight of 15 kg, its material costs are reduced. It does not require a nacelle or blades that are the most expensive parts of a conventional wind turbine, and the manufacturing costs are estimated to be about 53% of that of a conventional wind turbine.</p> <p>The goal of this project is to design and fabricate bladeless wind turbine.</p> <p>The design including two main parts electrical system and mechanical system. Systems sharing between Electrical Engineering Department (Electrical Power and Control Engineering Program) and Mechanical Engineering Department (Mechanical Power Engineering Program).</p> <p>The project's objectives are:</p> <ul style="list-style-type: none"> <li>• Design the bladeless wind turbine to supply clean and stable electrical energy.</li> <li>• Evaluate and analyze the design performance involving a simple and low-cost bladeless wind turbine.</li> <li>• Harmonize the legislation of the Egypt sustainable development plan (Egypt's Vision 2030) for green society.</li> <li>• Provide the students with the skills necessary for effective communication, teamwork, leadership, and collaboration across disciplines, taking into account societal values and professional ethics.</li> </ul> |                                        |
| <b>Student Names and IDs</b>                                                                                                                                                                                                                                                              | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Name</b>                            |
|                                                                                                                                                                                                                                                                                           | 201900458                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Aren Mosad Mustafa                     |
|                                                                                                                                                                                                                                                                                           | 202100212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Dania Abdelkader Mohamed               |
|                                                                                                                                                                                                                                                                                           | 201900566                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Muhammad Amir Abd Elhamid              |
|                                                                                                                                                                                                                                                                                           | 201802560                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Ahmed Hessain Fawzy Sedik              |
|                                                                                                                                                                                                                                                                                           | 201801329                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Abdelrahman Ayman Moustafa Kamel Eshak |
|                                                                                                                                                                                                                                                                                           | 201801354                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Abd Elmoneem Moheb Abd Elaziz Mohamed  |



## 6. Manufacturing and Characterization of Materials for Hydrogen Production and Storage

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>Program</b>               | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                  |
| <b>Project Title</b>         | Manufacturing and Characterization of Materials for Hydrogen Production and Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                  |
| <b>Supervisor(S)</b>         | Assoc. Prof. Dr. Reham Reda                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                  |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge.<br/>The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"><li>• Prepare metallic materials using additive manufacturing (3D printing).</li><li>• Use the prepared materials for hydrogen production and storage.</li><li>• Target materials such as aluminum, titanium, and/or stainless-steel alloys.</li><li>• Manufacture the materials in the shape of plates (electrodes) and mechanical testing specimens.</li><li>• Utilize water electrolysis to produce hydrogen using the manufactured electrodes.</li><li>• Test the prepared specimens to examine their ability to store hydrogen.</li></ul> |                                  |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                      |
|                              | 201900438                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mohamed Hamama Ahmed Abdou bondq |
|                              | 201701447                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yassin Hussein Fathy             |

## 7. Design and Manufacturing of Wire & Arc 3D Printing Machine for Metals

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Program</b>               | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                 |
| <b>Project Title</b>         | Design and Manufacturing of Wire & Arc 3D Printing Machine for Metals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |
| <b>Supervisor(S)</b>         | Dr El-shafee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge. The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• Wire Arc Additive Manufacturing (WAAM) is a production process used to 3D print or repair metal parts.</li> <li>• WAAM is executed by depositing layers of metals on top of each other, until a desired 3D shape is created.</li> <li>• It is a combination of two production processes: Gas Metal Arc Welding (GMAW) and additive manufacturing, (GMAW is a welding process used for joining metal parts using an electric), (and additive manufacturing is the industrial term for 3D printing).</li> <li>• The production of parts using WAAM is carried out by a welding torch integrated with gantry system.</li> </ul> |                                 |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Name</b>                     |
|                              | 201902635                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | omar ahmed nemr                 |
|                              | 201902533                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | mohamad refaat hammad           |
|                              | 201902613                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | mohamed ahmed selim             |
|                              | 20190263                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ahmed abdelaty ghazy            |
|                              | 201801331                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Abdul Rahman Hassan Al-Sanhouri |



## 8. Blanking Die Design and Manufacturing

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <b>Program</b>               | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |
| <b>Project Title</b>         | Blanking Die Design and Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |
| <b>Supervisor(S)</b>         | Dr Hussin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                      |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge. The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"><li>• Study the steps involved in blanking die design.</li><li>• Gain an understanding of the rules and principals involved in the design process of a blanking die.</li><li>• Use the blanking die design project as a gateway to be studying more sophisticated types of sheet metal dies.</li><li>• Create detailed drawings of the components involved in the blanking die design, step by step, until the assembly drawing is complete.</li><li>• Manufacture and test the blanking die with a real product to evaluate its performance and functionality.</li></ul> |                                      |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Name</b>                          |
|                              | 201600361                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Abdelrhman ibrahim ali morgan        |
|                              | 201901136                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Hassan mohamed hassan taha assos     |
|                              | 201900067                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Abdelrahman Ahmed Ahmed Mohamed      |
|                              | 201900934                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yousef Mohamed Aly Abdelrahman Ahmed |

## 9. Hybrid powered HVAC system

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|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>Program</b>               | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |
| <b>Project Title</b>         | Hybrid powered HVAC system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |
| <b>Supervisor(S)</b>         | Dr. Mohamed Elhelw                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge.</p> <p>The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• Implement and build an air conditioning system that runs on solar and wind energy.</li> <li>• Conduct calculations to determine the required equipment for the solar and wind energy system.</li> <li>• Test the operation and functionality of each system individually on the air conditioning system.</li> <li>• Compare the available energy between the wind energy system and the solar energy system.</li> <li>• Study and explore the integration of the wind and solar energy systems to work together in providing energy for the air conditioning system.</li> </ul> |                                |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Name</b>                    |
|                              | 201900904                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Amr Adel Mohamed Moghawry      |
|                              | 201900249                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Zyad Abdelwahab Ibrahim Nassar |
|                              | 201900484                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Hamada Hesham Habib            |
|                              | 202201460                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mohanad Amr Abdelrahim         |
|                              | 201900669                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mohamed Fathy Shaaban          |



## 10. Thermal Design of Solar Power Plant with Sand Battery Storage System

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|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>Program</b>               | Electronics and Communications Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |
| <b>Project Title</b>         | Thermal Design of Solar Power Plant with Sand Battery Storage System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                  |
| <b>Supervisor(S)</b>         | Prof. Dr. Mohamed Khamis Mansour                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                  |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge. The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>Analyze and design a new thermally efficient solar power plant.</li> <li>Ensure a steady power supply from renewable energy despite changing seasons and variable weather conditions.</li> <li>Utilize low-grade builders' sand, two district heating pipes, and a fan in the construction of the sand battery.</li> <li>Heat the sand up to 600C using electricity generated by solar electric panels to transform it into a battery.</li> <li>create and Store excess energy as heat to be used for heating homes, generating hot steam through an organic Rankine cycle, and powering high temperature processes in fossil-fuel dependent industries.</li> <li>Develop a new technology for efficient energy storage and utilization.</li> </ul> |                                  |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Name</b>                      |
|                              | 201900886                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Zeyad Ahmed Sayed                |
|                              | 201902567                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Abdelrhman Ibrahim Ramadan belal |
|                              | 201802071                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Khaled Amr Ahmed Hassan Saloom   |
|                              | 201701284                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Abdulla Waheed Mohamed Elashkar  |

### 11. A theoretical and practical economic study of reverse design, improving engine performance, and overhauling of internal combustion engine

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Program</b>               | Electrical Power and Control Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |
| <b>Project Title</b>         | A theoretical and practical economic study of reverse design, improving engine performance, and overhauling of internal combustion engine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    |
| <b>Supervisor(S)</b>         | Dr. Ahmed Draz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge.</p> <p>The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>Choose the engine for study and classification based on correct theoretical methods of characterization.</li> <li>Perform reverse design to calculate the dimensions of the main component of the engine and compare them to the real dimensions.</li> <li>Improve engine performance by increasing volumetric efficiency using an electrical blower.</li> <li>Study the reasons for conducting an overhaul on the engine.</li> <li>Evaluate the results of the project.</li> </ul> |                                    |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Name</b>                        |
|                              | 201900257                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Ahmed Ahmed Mahmoud Yousef         |
|                              | 201900975                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mohamed Samir Mohamed Mahfouz      |
|                              | 201900445                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Seif alla Tarek Farouk Mohamed     |
|                              | 201901031                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Salah Ahmed Elsaied Ali Aboshanady |
|                              | 201901053                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Mazen Mahmoud Al-Shahawi           |

## 12. Pipeline Design, Control & Pumping System Optimization

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Program</b>               | Electrical Power and Control Engineering & Mechanical Power Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             |
| <b>Project Title</b>         | Pipeline Design, Control & Pumping System Optimization                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |
| <b>Supervisor(S)</b>         | Dr. Gasser E. Hassan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                             |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge. The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• Transport large volumes of petroleum products, natural gas, and water from major supply sources to distribution centers near market areas.</li> <li>• Design pipelines to withstand challenging operating and environmental conditions through hydraulic and mechanical analysis.</li> <li>• Ensure compliance with the American Petroleum Institute (API) standards for optimized pipeline design.</li> <li>• Consider factors such as route and profile, pumping power, pump selection, wall thickness, diameter, weight, location of booster stations, and fixed and running costs in the pipeline design process.</li> <li>• Control and analyze measured data using a SCADA (Supervisory Control and Data Acquisition) sys.</li> </ul> |                             |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                 |
|                              | 201801196                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ahmed Abdelrhim Kamaleldeen |
|                              | 201801822                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mostafa Osama Elkady        |
|                              | 201901242                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mohammed mostafa Elmasry    |
|                              | 5314407                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Omar Mohamed Abd el aziz    |
|                              | 5314501                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Ahmed Gomaa Ali             |

### 13. HVAC system for the engineering faculty building

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                   |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>Program</b>               | Mechanical Power Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                   |
| <b>Project Title</b>         | HVAC system for the engineering faculty building                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| <b>Supervisor(S)</b>         | Mohamed Shawky Ismail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                   |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge. The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• Ensure comfortable indoor conditions.</li> <li>• Prevent moisture-related issues.</li> <li>• Comply with industry standards and recommendations.</li> <li>• Enhance energy efficiency.</li> <li>• Optimize system performance.</li> </ul> |                                   |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Name</b>                       |
|                              | 201900239                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Tarek mohamed barakat elansary    |
|                              | 201901016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Mohamed said elhalawany           |
|                              | 201900721                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ebrahim abdelnaby adawy           |
|                              | 201900724                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Mohamed abdelaal mohamed abdelaal |

## 14. HVAC system for the engineering faculty building

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Program</b>               | Mechanical Power Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |
| <b>Project Title</b>         | Medical Service Robot                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |
| <b>Supervisor(S)</b>         | Dr. Moustafa El-Hadary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |
| <b>Goals / Objectives</b>    | <p>In response to the increasing demand for innovative solutions in healthcare delivery, this project presents the design and implementation of a Medical Service Robot (MSR) aimed at augmenting medical services and improving patient care.</p> <p>The MSR is conceived as a versatile autonomous system capable of performing various tasks within medical facilities, thereby alleviating the burden on healthcare professionals and enhancing overall efficiency.</p> <p>Additionally, the MSR features a user-friendly interface, allowing healthcare professionals to interact with the robot intuitively and seamlessly integrate it into their workflow.</p> <p>Overall, the development of the Medical Service Robot represents a significant contribution to the field of healthcare robotics, offering promising opportunities for improving patient outcomes, enhancing operational efficiency, and transforming the delivery of medical services.</p> <p>As future work, further enhancements and refinements to the MSR will be explored to address emerging challenges and capitalize on new advancements in robotics and healthcare technology.</p> |                                 |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Name</b>                     |
|                              | 201900452                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Abdelrahman yasser zaghloul     |
|                              | 201900723                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | mounir alaa mounir              |
|                              | 201902315                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Khaled Ahmed Alsayed            |
|                              | 201901429                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Mustafa Mohamed Ahmed Salim     |
|                              | 201900886                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ziad Ahmed Sayed Mahmoud Hammad |

## 15. HVAC system for the engineering faculty building

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                   |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>Program</b>               | Mechanical Power Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |
| <b>Project Title</b>         | HVAC system for the engineering faculty building                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                   |
| <b>Supervisor(S)</b>         | Dr. Fouad Zidan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                   |
| <b>Goals / Objectives</b>    | <p>This project purpose is applying, analyzing, synthesizing, and evaluating information to communicate significant knowledge.</p> <p>The project aims to demonstrate the students' ability to integrate their learning and showcase their skills and knowledge acquired throughout their academic journey.</p> <ul style="list-style-type: none"> <li>• use CAD software to create an initial design for the Flettner rotor, which is a type of rotating cylinder used for propulsion on ships.</li> <li>• use Ansys Fluent, computational fluid dynamics (CFD) software, to simulate the flow around the cylinders.</li> <li>• determine the best design for the cylinders in terms of length, diameter, RPM (rotations per minute), and arrangement.</li> <li>• utilize Fluid Solid Interaction (FSI) techniques to ensure that the Flettner rotor structure remains unaffected by the wind force.</li> <li>• compare potential flow equations with real flow data to gain a better understanding of the Magnus effect.</li> </ul> |                                   |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Name</b>                       |
|                              | 201901618                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Sayed Abd El-Hafiz Rashed         |
|                              | 201901449                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Youssef Khalaf Mohamed            |
|                              | 201900302                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Mona Wafeek                       |
|                              | 201900742                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Mohamed Ayman                     |
|                              | 201901484                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ahmed Shokry Abd El-Megeed Tawfik |

## 16. Smart Fire Fighting Truck Using Arduino

|                      |                                         |
|----------------------|-----------------------------------------|
| <b>Program</b>       | Mechanical Power Engineering            |
| <b>Project Title</b> | Smart Fire Fighting Truck Using Arduino |



| Supervisor(S)         | Dr. Adel Abdelrahman                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Goals / Objectives    | <p><b>Abstract:</b> In recent years, the need for effective and efficient fire protection systems has become increasingly important. To address this concern, our graduation project focuses on the development of an autonomous firefighting truck using Arduino. The project aims to create a remotely controlled fire truck equipped with flame sensors and a water level sensor. The firefighting truck employs Arduino as its main control unit, which enables seamless integration of various sensors and actuators. The remote-control functionality allows operators to maneuver the truck with ease, ensuring precise positioning for firefighting operations. The inclusion of two flame sensors enhances the truck's capability to detect fires accurately and quickly. These sensors are strategically placed to maximize the coverage area and enable early fire detection. Once a fire is detected, the truck's system triggers an immediate response to initiate firefighting procedures. Additionally, a water level sensor is integrated into the system to ensure efficient water management. This sensor continuously monitors the water level in the truck's tank, providing real-time feedback to the operator. It helps prevent water shortages during firefighting operations, thereby improving the overall effectiveness of the truck. Overall, our project aims to develop an innovative solution for firefighting operations by combining Arduino technology, flame sensors, and a water level sensor. The autonomous firefighting truck offers enhanced fire detection capabilities and efficient water management, empowering firefighters to combat fires effectively while ensuring their safety. The successful implementation of this project can have a significant impact on the field of fire protection and emergency response.</p> |                         |
| Student Names and IDs | ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Name                    |
|                       | 201801737                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mohamed ayman ahmed     |
|                       | 201600439                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mohamed hamed moghazi   |
|                       | 201501155                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mohamed fathey farghaly |



Pharos University in Alexandria

Faculty of Engineering

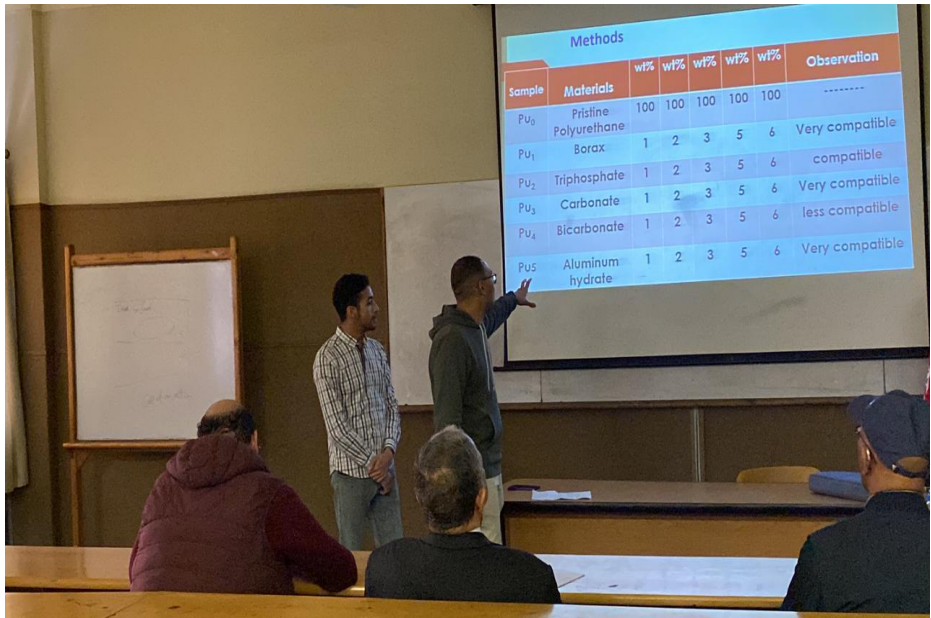
جامعة فاروس بالإسكندرية

كلية الهندسة



# **Petrochemicals Engineering Department (EP400-1 & EP400-2)**





| Methods         |                       |     |     |     |     |     | Observation     |
|-----------------|-----------------------|-----|-----|-----|-----|-----|-----------------|
| Sample          | Materials             | wt% | wt% | wt% | wt% | wt% |                 |
| PU <sub>0</sub> | Pristine Polyurethane | 100 | 100 | 100 | 100 | 100 | -----           |
| PU <sub>1</sub> | Borax                 | 1   | 2   | 3   | 5   | 6   | Very compatible |
| PU <sub>2</sub> | Triphosphate          | 1   | 2   | 3   | 5   | 6   | compatible      |
| PU <sub>3</sub> | Carbonate             | 1   | 2   | 3   | 5   | 6   | Very compatible |
| PU <sub>4</sub> | Bicarbonate           | 1   | 2   | 3   | 5   | 6   | less compatible |
| PU <sub>5</sub> | Aluminum hydrate      | 1   | 2   | 3   | 5   | 6   | Very compatible |





## 1. Increasing the Propane and Ethane Recovery from Natural gas plants.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| <b>Program</b>               | Petrochemicals Engineering                                                                                                                                                                                                                                                                                                                                                                                     |                                      |
| <b>Project Title</b>         | Increasing the Propane and Ethane Recovery from Natural gas plants                                                                                                                                                                                                                                                                                                                                             |                                      |
| <b>Supervisor(S)</b>         | Assco.Prof.Dr. Noha Said - noha.said@pua.edu.eg<br>Eng.Mohamed Abdelraof                                                                                                                                                                                                                                                                                                                                       |                                      |
| <b>Goals / Objectives</b>    | <b>The project aims are to:</b> <ul style="list-style-type: none"><li>• Study the optimum solution to maximize the recovery of Ethane and Propane from gas plant feed.</li><li>• Perform equipment sizing, process safety study for the designed unit.</li><li>• Optimize transportation way of recovered C2/C3 for petrochemical plants.</li><li>• Apply Simulation programs to optimize the study.</li></ul> |                                      |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Name</b>                          |
|                              | 201901550                                                                                                                                                                                                                                                                                                                                                                                                      | Ahmed Khaled Mahrous Ali Mahrous     |
|                              | 201900201                                                                                                                                                                                                                                                                                                                                                                                                      | Ahmed Mohamed Abdelfattah Hamd       |
|                              | 201801800                                                                                                                                                                                                                                                                                                                                                                                                      | Mohamed Moustafa Moawad Shoaib ElDeb |



## 2. Egyptian Prototype of Electrolyser for Green Hydrogen Production.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Program</b>               | Petrochemicals Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                           |
| <b>Project Title</b>         | Egyptian Prototype of Electrolier for Green Hydrogen Production                                                                                                                                                                                                                                                                                                                                                                                                 |                                           |
| <b>Supervisor(S)</b>         | Prof.Dr.Alaa Fahmy- alaa.fahmy@pua.edu.eg<br>Dr.mahmoud Abdelaty- mahmoud.abdelaty@pua.edu.eg                                                                                                                                                                                                                                                                                                                                                                   |                                           |
| <b>Goals / Objectives</b>    | <b>The project aims are to:</b> <ul style="list-style-type: none"><li>• Study The structure–property relationships of the modified PS imbedded a metal oxide-graphene core-shell membranes in dependence on the modification process by introducing conductive groups on the benzene ring of PS, and the thickness of the membranes.</li><li>• Build a prototype which can be a starting point for industrial scale for cell design and installation.</li></ul> |                                           |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Name</b>                               |
|                              | 201901296                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Nour Elden Mahmoud Bahnasy Abd Ellatif    |
|                              | 201900435                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mo'men Mahmoud Mohamed Mahmoud Gomaa      |
|                              | 201801352                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Abdallah Mohamed Elalamy Abdelhamid farah |

### 3. Polystyrene from waste to required and expensive materials.

|                                                                                                                |                                                                                                                                                                                             |                                           |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Program</b>                                                                                                 | Petrochemicals Engineering                                                                                                                                                                  |                                           |
| <b>Project Title</b>                                                                                           | Polystyrene from waste to required and expensive materials                                                                                                                                  |                                           |
| <b>Supervisor(S)</b>                                                                                           | Prof.Dr. Alaa Fahmy- alaa.fahmy@pua.edu.eg<br>Prof.Dr.Ehssan Nassef- ehssan.nassef@pua.edu.eg                                                                                               |                                           |
| <b>Goals / Objectives</b><br> | the aim of this work supposed modification of polystyrene waste as a cheap material in the synthesis of new hydrogels as expensive polymers which can be employed for various applications. |                                           |
| <b>Student Names and IDs</b>                                                                                   | <b>ID</b>                                                                                                                                                                                   | <b>Name</b>                               |
|                                                                                                                | 201900393                                                                                                                                                                                   | Asma Farahat Elsayed Mohamed Abdelsayed   |
|                                                                                                                | 201901456                                                                                                                                                                                   | Fatma Abdelnasser Mansour Mahmoud Elsayed |
|                                                                                                                | 201701264                                                                                                                                                                                   | Abdelrahman Hassan Hamed mohamed Ahmed    |
|                                                                                                                | 201801197                                                                                                                                                                                   | Ahmed Esam Eleraky                        |



#### 4. Preparation and Characterization of Economical Cationic Bitumen Emulsion Using Co-Emulsifier for Road Paving Constructions.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Program</b>               | Petrochemicals Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
| <b>Project Title</b>         | Preparation and Characterization of Economical Cationic Bitumen Emulsion Using Co-Emulsifier for Road Paving Constructions                                                                                                                                                                                                                                                                                                                                                         |                               |
| <b>Supervisor(S)</b>         | Prof.Dr.Abbas Anwar- abbas.ezzat@pua.edu.eg<br>Dr.yasser Elnaggar- yasser.elnaggar.pt@pua.edu.eg                                                                                                                                                                                                                                                                                                                                                                                   |                               |
| <b>Goals / Objectives</b>    | <b>The aims of the project are:</b> <ul style="list-style-type: none"><li>• To Select and characterize local bitumen.</li><li>• To Prepare and evaluate bitumen emulsion using several addition percentages of PEG as co-emulsified.</li><li>• To Prepare and evaluate bitumen emulsion using several addition percentages of NP9 as co-emulsifier.</li><li>• To Determine the optimum emulsifier and co-emulsifier addition percentages and the preparation conditions.</li></ul> |                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Name</b>                   |
|                              | 201801257                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Baher Mouhab Mohamed Salama   |
|                              | 201600462                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mohamed Mahfouz Mohamed Nafea |
|                              | 201801220                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Ahmed Mousa Ahmed             |
|                              | 201801392                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mohamed Osama Ali Hassan      |

## 5. Sugar Press Mud as a Proposed Futuristic Aqua-fertilizer.

|                                                                                                                    |                                                                                                                                                                                                       |                                       |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>Program</b>                                                                                                     | Petrochemicals Engineering                                                                                                                                                                            |                                       |
| <b>Project Title</b>                                                                                               | Sugar Press Mud as a Proposed Futuristic Aqua fertilizer                                                                                                                                              |                                       |
| <b>Supervisor(S)</b>                                                                                               | Assco.Prof.Dr. Noha Said - noha.said@pua.edu.eg<br>Dr.mahmoud Abdelaty- mahmoud.abdelaty@pua.edu.eg<br>Eng.yehya Selim yehia.selim@pua.edu.eg                                                         |                                       |
| <b>Goals / Objectives</b><br><br> | The main goal is to utilize sugar press mud as a source of nutrients, soil ameliorants and fertilizer, to be used usefully to the farming and milling sectors as well as supporting other industries. |                                       |
| <b>Student Names and IDs</b>                                                                                       | <b>ID</b>                                                                                                                                                                                             | <b>Name</b>                           |
|                                                                                                                    | 201701215                                                                                                                                                                                             | Bansih Mohamed Ibrahim Mohamed Hassan |
|                                                                                                                    | 201701237                                                                                                                                                                                             | Rogina Mohamed Farouk Mohamed Elsayed |
|                                                                                                                    | 201901972                                                                                                                                                                                             | Essmat Hisham Essmat Ali Soudan       |
|                                                                                                                    | 201900394                                                                                                                                                                                             | Mazen Ayman Mahmoud Ali Hassan        |

## 6. Promoting Sustainability Through the Recycling and Reutilization of Polyethylene Packaging.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Program</b>               | Petrochemicals Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                            |
| <b>Project Title</b>         | Promoting Sustainability Through the Recycling and Reutilization of Polyethylene Packaging                                                                                                                                                                                                                                                                                                                                                                                                    |                            |
| <b>Supervisor(S)</b>         | Prof.Dr.Ehssan Nassef- ehssan.nassef@pua.edu.eg<br>Dr.Reham Mohamdeen                                                                                                                                                                                                                                                                                                                                                                                                                         |                            |
| <b>Goals / Objectives</b>    | <p><b>The aims of this research are:</b></p> <ul style="list-style-type: none"> <li>• To study the effect of mixing different percentages of high-density polyethylene waste (RHDPE) with pure polyethylene (HDPE) on the product properties.</li> <li>• To investigate the optimum mixing ratio on the properties of the product.</li> <li>• To characterize the waste of polyethylene packages including bags and this composite and compare properties with those of pure HDPE.</li> </ul> |                            |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Name</b>                |
|                              | 201900256                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Reem Mohamed Fikry Ali     |
|                              | 201901220                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Noor Elsayed Zaky          |
|                              | 201901454                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Khaled Essam Nassr Mohamed |
|                              | 201901066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Malak Mohamed Gharib       |





## 7. Eco-Friendly Production of A plasticizer from waste Cooking Oils and Their Application in Poly vinyl Chloride Films.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Program</b>               | Petrochemicals Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |
| <b>Project Title</b>         | Eco-Friendly Production of A plasticizer from waste Cooking Oils and Their Application in Poly vinyl Chloride Films                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
| <b>Supervisor(S)</b>         | Dr.ashraf Morsy- Dr.Aya Soliman- aya.soliman@pua.edu.eg<br>Eng.Hossam Anwar- hossam.anwer.pt@pua.edu.eg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
| <b>Goals / Objectives</b>    | <p>The main goals are:</p> <ul style="list-style-type: none"><li>• To Utilize Waste Cooking Oil (WCO): The primary goal of this research is to find a sustainable and efficient way to utilize waste cooking oil (WCO) generated by the snacks manufacturing industry and food organizations.</li><li>• To reduce the substantial environmental and human health risks associated with the improper disposal of WCO.</li><li>• To maximize the feasibility of using WCO as a feedstock to produce an environmentally friendly plasticizer oil for the processing of poly vinyl chloride (PVC).</li><li>• To Develop an innovative epoxidation process using Nano citric acid as an acidic component, ensuring the generation of no solid residues and a less toxic liquid residue compared to conventional processes.</li><li>• To Investigate the characteristics of PVC film, specifically its thermal stability, structural properties, and mechanical properties.</li></ul> |                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Name</b>                   |
|                              | 201901829                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Esraa Yasser Gaber Elsayed    |
|                              | 201901944                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Sohila Adel Ahmed             |
|                              | 201901947                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mayar Tharwat Mohamed Alsayed |



## 8. Pioneering Polymeric Coatings: Advancing Fire Hazard Mitigation for Wooden Surfaces.

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Program</b>               | Petrochemicals Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
| <b>Project Title</b>         | Pioneering Polymeric Coatings: Advancing Fire Hazard Mitigation for Wooden Surfaces                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                               |
| <b>Supervisor(S)</b>         | Dr.ashraf Morsy<br>Dr.Aya Soliman- aya.soliman@pua.edu.eg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
| <b>Goals / Objectives</b>    | <p><b>The goals of the project are:</b></p> <ul style="list-style-type: none"><li>• Develop and explore innovative, nontoxic flame-retardant solutions for enhancing wood surfaces in polymer applications.</li><li>• To utilize different ratios of alumina trihydrate as a key component in liquid polyurethane formulations, aiming to create wood coatings with improved flame-retardant properties.</li><li>• To Investigate and evaluate the efficiency of these novel coatings in mitigating the risk of wood fires, with the goal of enhancing fire safety.</li><li>• To Promote sustainable practices in wood surface protection by introducing environmentally friendly flame-retardant materials.</li></ul> |                               |
| <b>Student Names and IDs</b> | <b>ID</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Name</b>                   |
|                              | 201701465                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Abdalla Hussin Hassan Ibrahim |
|                              | 201900914                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Adel Milad Abdo Wassef        |
|                              | 201901261                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ahmed Gaber Fouad Ali         |
|                              | 201701219                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Gamal Alaa Sakr               |



حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والإعتماد

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# Architectural Department

## (EA512)



حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والإعتماد

## **EA 512 Architectural Design Level 8 (Fall 2023-2024)**

**Program:** Architectural Engineering

**Titles:**

- 1.Recreational Park New Administrative Capital City
- 2.Exhibition Grounds New Administrative Capital City

**Supervisors:**

Prof. Ramdan Abdelmaksoud

Prof. Ahmed Mounir Soliman

Prof. Walid Fouad

**Staff Assistants:**

T.A. Naglaa Youssef

Arch. Monica Heshmat

Arch. Medhat Ayad

Arch. Nada Rafat

**Abstract:**

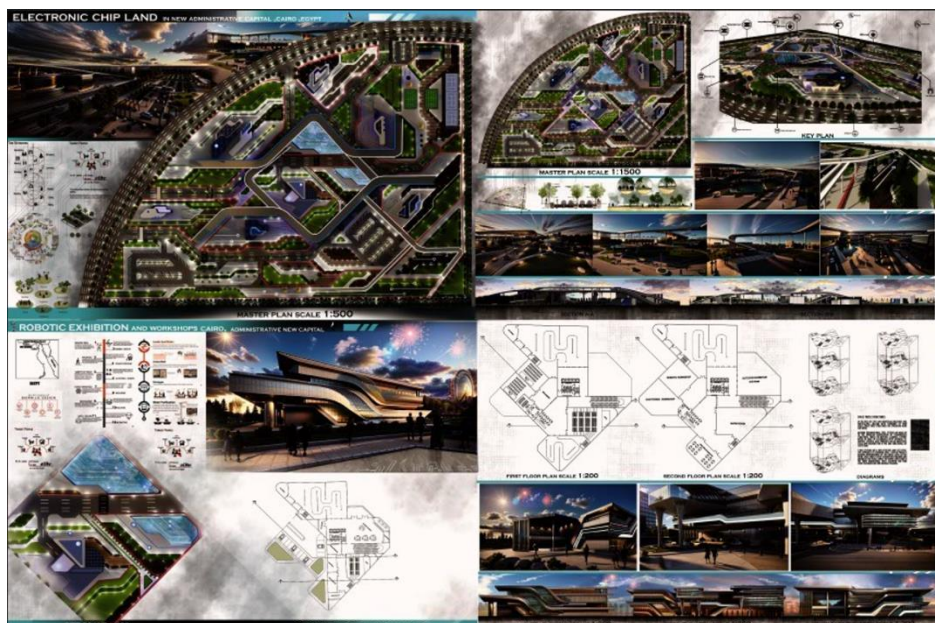
The department offers community service initiatives in various fields each year. In the current academic year 2023-2024, in agreement with Mr. Khaled Mahmoud Abbas, Chairman and Managing Director of the New Administrative Capital for Urban Development Company, a graduation project was chosen at selected sites in the New Administrative Capital. The students were provided with maps and project specifications, and their visits to these sites were facilitated.

حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 1

**Title:** Recreational Park (Electronic Chip Land)  
New Administrative Capital City

**Student Name:** Israa Gamal



حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 2

**Title:** Recreational Park (Space Center)  
New Administrative Capital City

**Student Name:** Gehad Adel



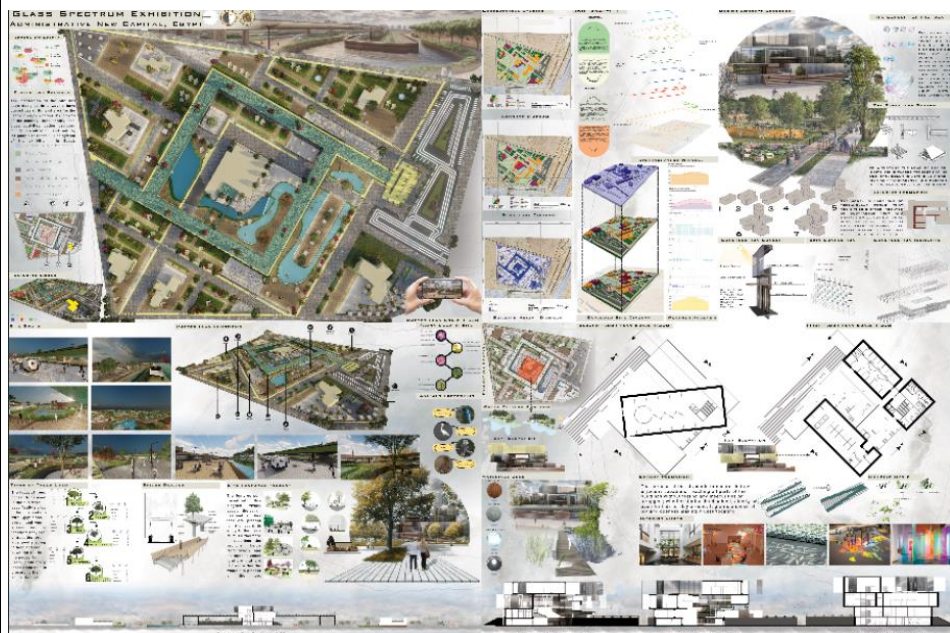


حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والإعتماد

## Project 3

**Title:** Exhibition Grounds (Glass Spectrum Exhibition)  
New Administrative Capital City

**Student Name:** Menna Hassan



حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 4

**Title:** Recreational Park (Echo Spectra Hub)  
New Administrative Capital City

**Student Name:** Karin Kamel





حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 5

**Title:** Recreational Park (Ballet center)  
New Administrative Capital City

**Student Name:** Nour Khaled



حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 6

**Title:** Recreational Park (Aquatic Center)  
New Administrative Capital City

**Student Name:** Osama Tawfik



حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 7

**Title:** Recreational Park (Recreational Hub)  
New Administrative Capital City

**Student Name:** Mark Youssef



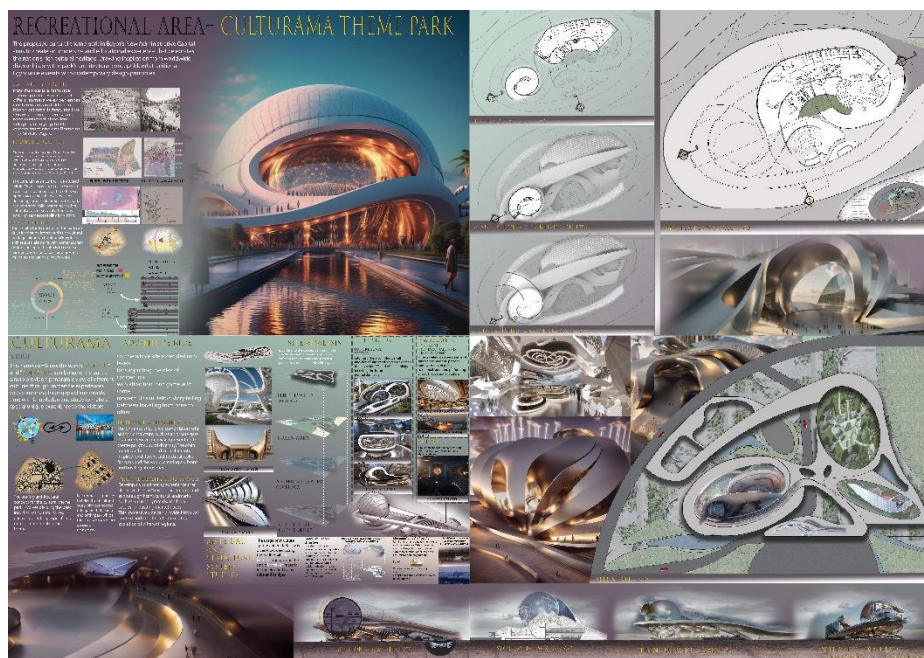


حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 8

**Title:** Recreational Park (Culturama Theme Park)  
New Administrative Capital City

**Student Name:** Mirna Mohamed



حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والإعتماد

## Project 9

**Title:** Exhibition Grounds (Expo City)  
New Administrative Capital City

**Student Name:** Zeyad Mohamed





حاصلة على الاعتماد من الهيئة القومية لضمان جودة التعليم والاعتماد

## Project 10

**Title:** Recreational Park (Concert Hall)  
New Administrative Capital City

**Student Name:** Eman Shaaban

