

Competencies for Construction Engineering and Management Program

Semester	Course Code	Course Name	Engineering										Civ-8				Construction Management				
			A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2	B3	B4	D1	D2			
SEMESTER 1	ES 101	Engineering Mathematics (1)	1																		
	ES 111	Engineering Mechanics (1)	1																		
	ES 121	Engineering Physics (1)	1																		
	ES 141	Engineering Drawing & Descriptive Geometry (1)	1																		
	UEC 01	Computer Skills & Programming Concepts (1)	1	1	1	1	1														
	BM 110	Introduction to Manufacturing Processes	1			1	1														
SEMESTER 2	BM 121	Engineering Perspectives and Technology	1																		
	ES 102	Engineering Mathematics (2)	1																		
	ES 112	Engineering Mechanics (2)	1																		
	ES 122	Engineering Physics (2)	1																		
	ES 142	Engineering Drawing & Descriptive Geometry (2)	1																		
	ES 121	General Chemistry	1	1	1	1	1														
SEMESTER 3	UEC 02E	Computer Skills & Programming Concepts (2)	1	1	1	1	1														
	HU 111	Technical Reports Writing and Presentation Skills	1																		
	UCS 01	Communication Skills (1)	1																		
	ES 103	Engineering Mathematics (3)	1																		
	ES 113	Engineering Mechanics (3)	1																		
	ES 101	Engineering Materials	1			1															
SEMESTER 4	ES 102	Structural Analysis (1)	1				1														
	ES 103	Introduction to CAD Systems	1																		
	ES 104	Surveying for Engineers	1																		
	ES 204	Engineering Mathematics (4)	1																		
	ES 105	Introduction to Construction Engineering	1																		
	ES 106	Civil Engineering Drawing	1																		
SEMESTER 5	ES 107	Structural Analysis (2)	1				1														
	ES 108	Strength of Materials	1																		
	ES 202	Concrete Materials	1																		
	UEE 01	English Language (1)	1																		
	ES 201	Introduction to Environmental Engineering	1																		
	ES 203	Construction Project Management	1																		
SEMESTER 6	ES 204	Soil Mechanics (1)	1																		
	ES 205	Reinforced Concrete Design (1)	1																		
	HU Elective	HU Elective (1)	1																		
	HU Elective	HU Elective (2)	1																		
	UEE 02	English Language (2)	1																		
	ES 206	Building Technology	1																		
SEMESTER 7	ES 207	Construction Planning and Scheduling	1																		
	ES 202	Reinforced Concrete Design (2)	1																		
	ES 209	Foundation Engineering	1																		
	ES 401	Water and Waste Water Engineering	1																		
	ES 208	Hydraulics	1																		
	ES 210	Introduction to Mechanical and Electrical Systems in Construction	1																		
SEMESTER 8	ES 301	Steel Structures Design (1)	1																		
	ES 303	Project Cost Analysis	1																		
	ES 308	Highway Engineering	1																		
	ES Elective	ES Elective (1)	1																		
	ES 304	Hydraulics Structures	1																		
	ES 305	Steel Structures Design (2)	1																		
SEMESTER 9	ES 307	Construction Productivity	1																		
	ES 308	Computer Aided Design	1																		
	UGA 03	Public Language Skills	1																		
	ES Elective	ES Elective (2)	1																		
	ES Elective	ES Elective (3)	1																		
	ES 406-1	Graduation Project (1)	1																		
SEMESTER 10	ES 402	Harbour and Marine Constructions	1																		
	ES 403	Repair and Maintenance of Buildings	1																		
	ES 412	Design of Temporary Structures	1																		
	ES Elective	ES Elective (3)	1																		
	ES 405-2	Graduation Project (2)	1																		
	ES 404	Construction Methods and Equipment	1																		
SEMESTER 11	ES 405	Construction Contracting	1																		
	ES 406	Quality Control of Construction Materials	1																		
	UCS 02	Communication Skills (2)	1																		
	ES Elective	ES Elective (4)	1																		
	FT 001	Field Training	1																		

**Color Coding**

- General Competency of Engineering Graduate – Level A
- Competency of Civil Engineering Graduate – Level B
- Competency of Construction Engineering and Management Graduate – Level D
- Compulsory Course for University Requirement
- Compulsory Course of Common Faculty Requirement
- Elective Humanities and Social Sciences (HU) Course for Faculty Requirement
- Compulsory Course of Discipline Requirement: Civil Engineering
- Compulsory Course of Non-Common Discipline Requirement: Civil Engineering
- Compulsory Course of Major Requirement: Construction Engineering and Management
- Elective Course of Major Requirement: Construction Engineering and Management
- Field Training

**HU Elective (1)**

Course Code	Course Name
HU 131	Project Management
HU 132	Accounting and Cost for Engineering
HU 134	Engineering Economy
HU 135	Sales, Marketing and Communications Techniques
HU 151	Industrial Safety
HU 161	Environment and Society

**HU Elective (2)**

Course Code	Course Name
HU 133	Engineering Statistics
HU 141	Ethics and Human Rights
HU 142	Legislations and Contracts
HU 143	Principles of Law
HU 144	Communications Law and Rules
HU 162	Human Computer Interaction
HU 163	Astronomy and Space Sciences
HU 170	Risk Management

**ES Elective (1)**

Course Code	Course Name
ES 316	Surveying (2)
ES 318	Introduction to advanced BM (1)

**ES Elective (2)**

Course Code	Course Name
ES 311	Advanced Topics in Materials
ES 415	Construction Management using BIM (2)

**ES Elective (3)**

Course Code	Course Name
ES 209	Structure Analysis (3)
ES 312	Reinforced Concrete Industrial Structures
ES 407	Design of Steel Bridges
ES 410	Design of Reinforced Concrete Bridges

**ES Elective (4)**

Course Code	Course Name
ES 310	Introduction to Transportation and Traffic Engineering
ES 313	Construction Risk Management
ES 408	Reinforced Concrete High Rise Building
ES 409	Pre-stressed Concrete
ES 411	Soil Mechanics (2)