Bachelor Degree in Civil Engineering

1. University Graduation Requirements

To receive a bachelor's degree in Civil Engineering, a student must fulfill all requirements related to credit hours, grade point average, program of study, and courses.

2. Degree Requirements

Type of Requirement	Credit Hours
University Requirements	**30**
College Requirements	**42**
Specialization Requirements	**50**
Specialization Electives	**12**
Total	**134**

❖ First: University Requirements

University Requirements consist of **30** credit hours distributed as follows:

Course Number	Course Title	Credit Hours	Prerequisite
ARAB 101	Arabic Communication Skills	3	
ARAB 201	Advanced Academic Arabic	3	ARAB 101
CSC 101	Introduction to Computing	3	
ENGL 101	Basic Academic English I	3	
ENGL 102	Basic Academic English II	3	ENGL 101
ENGL 203	Advanced Academic English I	3	ENGL 102
SOCS 101	Islamic Civilization I	3	
SOCS 201	World Civilization I	3	
MATH 101	Calculus I	3	
	Free elective	3	
Total		**30**	

➢ A Free Elective Course: 3 credit hours

Course Number	Course Title	Credit Hours	Prerequisite
ASTR 150	Introduction to Astronomy	3	
CHEM 150	Chemistry & Society	3	
FREN 101	Basic French 1	3	
PHED 101	Physical Education 1	3	
SOCS 102	Islamic Civilization II	3	SOCS 101
SOCS 202	World Civilization II	3	SOCS 201

❖ **Second: College Requirements**: College Requirements consist of 42 credit hours distributed as follows:

Number	Title of the Course	Credit Hours	Pre-requisite
MATH 102	Calculus II	3	MATH 101
STAT 230	Probability and Statistics	3	MATH 101
MATH 201	Calculus and Analytic Geometry III	3	MATH 102
MATH 202	Differential equations	3	MATH 102
MATH 215	Linear algebra and Numerical Techniques	3	MATH 202
PHYS 101	Physics I	3	
PHYS 102	Physics II	3	PHYS 101
PHYS 103L	Physics Lab.	1	Co-PHYS 102
CHEM 101	Chemistry I	3	
CHEM 101L	Chemistry Lab	1	Co-CHEM 101
COEN 300	Engineering Economy	3	MATH 102
COEN 400	Engineering Ethics	1	ENGL 203
ENGL 206	Technical Writing	3	ENGL 203,
ELEE 230	Programming for Engineers	3	CSC 101
CIVE 215	Computer Aided Engineering Drawings	1	CSC 101
CIVE 498	Final Year Project I	1	87 credit hours, ENGL 206
CIVE 499	Final Year Project II	3	CIVE 498
CIVE 400	Summer internship training	1	finishing 90 credit hours
	Total	**42**	

❖ **Third: Program Specialization Requirements**: Program specialization requirements consist of **62** credit hours: **50** compulsory credit hours, **12** elective credit hours and a **3** credit hour free elective course distributed as follows.

➢ **A: Compulsory Specialization Requirements**: **50** credit hours distributed as follows.

Course Number	Course Title	Credit Hours	Pre-requisite
CIVE 205	Engineering Drawing	1	
CIVE 210	Statics	3	PHYS 101
CIVE 211	Structural Mechanics	3	CIVE 210
CIVE 220	Engineering Materials	3	CHEM 101, CHEM 101L
CIVE 220L	Engineering Materials Lab	1	Co-CIVE 220
CIVE 240	Fluid Mechanics	3	CIVE 210, MATH 202
CIVE 240L	Fluid Lab	1	Co-CIVE 240
CIVE 250	Environmental Engineering	3	CHEM 101
CIVE 260	Spatial Measurements	2	MATH 101
CIVE 260L	Surveying Lab	1	Co-CIVE 260
CIVE 310	Structural Analysis I	3	CIVE 211, MATH 215
CIVE 320	Concrete I	3	CIVE 220L CIVE 310
CIVE 330	Geotechnical Engineering	3	CIVE 211
CIVE 330L	Geotechnical Engineering Lab	1	Co-CIVE 330
CIVE 351	Water and Wastewater Treatment and Laboratory	3	CIVE 250 CIVE 240L
CIVE 360	Transportation Engineering	3	CIVE 260 STAT 230
CIVE 430	Foundation Engineering	3	CIVE 330
CIVE 460	Highway Engineering	3	CIVE 360
CIVE 471	Quantity Surveying and Cost Estimation	2	COEN 300, CIVE 320, CIVE 330, ELEE 230
CIVE 472	Contracts and Specifications	2	COEN 400, Co-CIVE 471
CIVE 480	Construction Management	3	CIVE 472
Total		**50**	

➢ B: Elective Specialization Requirements - **12** credit hours to be chosen from the following list.

Course Number	Course Title	Credit Hours	Prerequisite
CIVE 403	Special Topics in Civil Engineering	3	
CIVE 470	Introduction to Geographic Information Systems	3	CIVE 260
CIVE 410	Structural Analysis II	3	CIVE 310
CIVE 411	Bridges	3	CIVE 310 CIVE 320
CIVE 412	Steel Design	3	CIVE 310
CIVE 420	Concrete II	3	CIVE 320
CIVE 421	Special Topics in Concrete	3	CIVE 420
CIVE 422	Pre-Stressed Concrete	3	CIVE 420
CIVE 423	Strength and Rehabilitation of Concrete Structural Systems	3	CIVE 320
CIVE 431	Applied Foundation Engineering	3	CIVE 430
CIVE 432	Environmental Geotechnics	3	CIVE 330
CIVE 433	Soil and Site Improvement	3	CIVE 330
CIVE 434	Geotechnical Earthquake Engineering	3	CIVE 330
CIVE 461	Pavement Design	3	CIVE 360
CIVE 462	Urban Transportation Planning I	3	CIVE 360
CIVE 463	Traffic Engineering	3	CIVE 360
CIVE 464	Transportation Systems Analysis	3	CIVE 360
CIVE 465	Design and Management of Transport Operations	3	CIVE 360
CIVE 466	Transportation Economics	3	CIVE 360 COEN 300
CIVE 440	Hydraulics and Laboratory	3	CIVE 240
CIVE 441	Hydraulic Structures	3	CIVE 240
CIVE 442	Surface Water Hydrology	3	CIVE 240
CIVE 443	Groundwater Hydrology	3	CIVE 240
CIVE 444	Hydraulics of Open Channels	3	CIVE 240
CIVE 445	Coastal Engineering	3	CIVE 240
CIVE 446	Transport Phenomena in Surface and Subsurface Waters	3	CIVE 240 CIVE 250
CIVE 447	Water Resources Systems: Planning and Management	3	CIVE 351
CIVE 448	GIS for Water Resources and Environmental Engineering	3	CIVE 351
CIVE 450	Methods of Environmental Sampling and Analysis	3	CIVE 250
CIVE 451	Environmental Chemistry and Microbiology	3	CIVE 250
CIVE 452	Environmental Management and Decision Making	3	CIVE 250
CIVE 453	Water and Sewage Works Design	3	CIVE 351
CIVE 454	Solid Waste Management I	3	CIVE 351
CIVE 455	Solid Waste Management II	3	CIVE 454
CIVE 456	Air Pollution and Control	3	CIVE 250
CIVE 457	Industrial/Hazardous Waste Management	3	CIVE 451
CIVE 458	Environmental Impact Assessment	3	CIVE 250

Proposed Sequence of Study

Year I

First Semester		18 Credit hours		
Code	**Course**	**Title**	**Credits**	**Pre-requisites**
	ARAB 101	Arabic Communication Skills	3	
	SOCS 101	Islamic Civilization I	3	
	CSC 101	Introduction to Computing	3	
	ENGL 101	Basic Academic English I	3	
	PHYS 101	Physics 101	3	
	MATH 101	Calculus I	3	
TOTAL 18				

Year I

Second Semester		18 Credit hours		
Code	**Course**	**Title**	**Credits**	**Pre-requisites**
	ARAB 201	Advanced Academic Arabic	3	ARAB 101
	ENGL 102	Basic Academic English II	3	ENGL 101
	MATH 102	Calculus II	3	MATH 101
	PHYS 102	Physics II	3	PHYS 101
	CHEM 101	Chemistry I	3	
	ELEE 230	Programming for Engineers	3	CSC 101
TOTAL 18				

Year II

Third Semester		18 Credit hours		
	ENGL 203	Advanced Academic English I	3	ENGL 102
	MATH 201	Calculus and Analytic Geometry III	3	MATH 102
	MATH 202	Differential equations	3	MATH 102
	CIVE 260	Spatial Measurements	2	
	SOCS 201	Islamic Civilization II	3	SOCS 101
	CHEM 101L	Chemistry Lab	1	Co-CHEM 101
	CIVE 210	Statics	3	PHYS 101
TOTAL 18				

Year II

Fourth Semester		**18 Credit hours**		
Code	**Course**	**Title**	**Credits**	**Pre-requisites**
	STAT 230	Probability and Statistics	3	MATH 101
	MATH 215	Linear algebra and Numerical Techniques	3	MATH 202
	ENGL 206	English Technical Writing	2	ENGL 203
	COEN 300	Engineering Economy	3	MATH 102
	CIVE 220	Engineering Materials	3	CHEM 101 CHEM 101L
	CIVE 260L	Surveying Lab	1	Co-CIVE 260
	CIVE 211	Structural Mechanics	3	CIVE 210
TOTAL 18				

Year III

Fifth Semester		**18 Credit hours**		
Code	Course	Title	Credits	**Pre-requisites**
	CIVE 310	Structural Analysis I	3	CIVE 211, MATH 215
	CIVE 220L	Engineering Materials Lab	1	Co-CIVE 220
	CIVE 240	Fluid Mechanics	3	CIVE 210, MATH 202
	CIVE 240L	Fluid Lab	1	Co-CIVE 240
	CIVE 250	Environmental Engineering	3	CHEM 101
	CIVE 330	Geotechnical Engineering	3	CIVE 211
	CIVE 330L	Geotechnical Engineering Lab	1	Co-CIVE 330
	CIVE 360	Transportation Engineering	3	CIVE 260 STAT 230
Total 18				

Year III

Sixth Semester		**18 Credit hours**		
Code	**Course**	**Title**	**Credits**	**Pre-requisites**
	CIVE 320	Concrete I	3	CIVE 220L CIVE 310
	CIVE 351	Water and Wastewater Treatment and Laboratory	3	CIVE 250 CIVE 240L
	CIVE 460	Highway Engineering	3	CIVE 360
	SOCS 202	World Civilization	3	
	COEN 400	Communication skills and ethics	3	ENGL203
	PHYS 103L	Physics Lab.	1	Co-PHYS 102
	CIVE 215	Computer Aided Engineering Drawing	1	CSC101
	CIVE 205	Engineering Drawings	1	
Total 18				

Year III

Summer Semester		1 Credit hours		
Code	**Course**	**Title**	**Credits**	**Pre-requisites**
	CIVE 400	Summer internship training	1	finishing 95 credit hours
Total 1				

Year IV

Seventh Semester		14 Credit hours		
Code	**Course**	**Title**	**Credits**	**Pre-requisites**
	CIVE 471	Quantity Surveying and Cost Estimation	2	COEN 300, CIVE 320 CIVE 330 ELEE 230
	CIVE 472	Contracts and Specifications	2	COEN 400 Co-CIVE 471
		Specialization Elective	3	
		Specialization Elective	3	
		Free Elective	3	
	CIVE 401	Final Year Project I	1	ENGL 206
Total 14				

Year IV

Eighth Semester		12 Credit hours		
Code	**Course**	**Title**	**Credits**	**Pre-requisites**
	CIVE 480	Construction Management	3	CIVE 472
	CIVE 430	Foundation Engineering	3	CIVE 330
		Specialization Elective	3	
		Specialization Elective	3	
	CIVE 402	Final Year Project II	3	CIVE 401
TOTAL 15				

Total Program Credits 134*

Completion of Bachelor in Civil Engineering