

Study Plan for Bachelor program - Study Plan Development and Updating Procedures/ Civil and Infrastructure Engineering Department	QF09/0407-4.0E
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Course Plan for Civil and Infrastructure Engineering (Bachelor Program) No.: (1-2023/2024)			
Approved by Deans Council by decision (29/05/2023-2024) dated (18/12/2023)			
(160) Credit Hours		Study system / hybrid program	
Type of specialty	<input type="checkbox"/> Humanitarian	<input checked="" type="checkbox"/> Scientific/technical	<input type="checkbox"/> Medical Sciences

Teaching style	Percentage of study plan hours / number	Model used (synchronous: asynchronous)
Complete e-learning courses	17% / number (27 ) C h	1:1 (For Thur., Sat.)
Blended Learning courses (For Humanity)	40% - 60% Maximum / number( ) C h	1:1 (For Sun. Tue.) or (Mon. Wed.)
Blended learning courses (for scientific and medical)	33% / number (52) C h	1:1 (For Sun. Tue.) or (Mon. Wed.)
Traditional learning courses (for humanity)	20% Minimum / number ( ) C h	2:0 For all academic divisions
Traditional learning courses (for scientific and medical)	50% / number (81) C h	2:0 For all academic divisions

**Important note:** (The teaching patterns of the subjects are distributed at all academic levels in the program)

**Program vision:** Towards a competitive faculty committed to excellence in teaching, innovative research, entrepreneurship and community service.

**Program mission and objectives:**

1. Pursue careers in civil and infrastructure engineering, implementing technical solution while demonstrating collaborative and communication.
2. Seek higher degrees in Civil and Infrastructure Engineering and embark on lifelong learning.
3. Seek professional licensure, apply their skills ethically, and being aware of the impact of Civil and Infrastructure Engineering projects on society as well as environment.

**Program learning outcomes** ((MK= Main Knowledge, MS= Main Skills, MC= Main Competences)

Main knowledge	
MK1	Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
MK2	Acquire and apply new knowledge as needed, using appropriate learning strategies
MK3	Understand and explain the key concepts used in project management and development, public policy, public administration, leadership principles and licensure
Basic skills	
MS1	Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
MS2	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
MS3	Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
MS4	Acquire and apply new knowledge as needed, using appropriate learning strategies
General competencies	
MC1	An ability to communicate effectively with a range of audiences
MC2	Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
MC3	Acquire and apply new knowledge as needed, using appropriate learning strategies
MC4	Understand and explain the key concepts used in project management and development, public policy, public administration, leadership principles and licensure.



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Teaching style	Course No.	Course name	Credit hour	Theory Hours	Practical Hours	Prerequisite Co-requisite	Indicative	
							Semester	year
Fully electronic								
Blended								
Traditional								
<b>3. Major Requirements ( 107 ) Credit Hours</b>								
<b>3.1 Mandatory requirements ( 85 ) credit hours</b>								
	• 0908203	Strength of Materials	3	3	0	Statics	2	2
	• 0908204	Strength of Materials Laboratory	1	0	3	Co. Strength of Materials	2	2
	• 0908205	Probability and Statistics for Engineers	3	3	0	Calculus I for Engineering Students	1	2
	• 0908206	Statics	3	3	0	General Physics I for Engineering Students	1	2
	• 0908207	Dynamics	3	3	0	Statics	2	2
	• 0908221	Engineering Geology	3	3	0	General Chemistry for Engineering Students	1	2
	• 0908224	Engineering Geology Laboratory	1	0	3	Co. Engineering Geology	1	2
	• 0908310	Applied Mathematics	3	3	0	Linear Algebra	2	3
	• 0908311	Applied Mathematics Laboratory	1	0	3	Co. Applied Mathematics	2	3
	• 0908326	Material Science	2	2	0	Engineering Geology	2	2
	• 0908327	Concrete Technology	3	3	0	Material Science	1	3
	• 0908328	Concrete Technology Laboratory	1	0	3	Co. Concrete Technology	1	3
	• 0908331	Structural Analysis	3	3	0	Strength of Materials	1	3
	• 0908337	Fluid Mechanics for Civil Engineering	3	3	0	Statics	1	3
	• 0908341	Surveying	3	3	0	Calculus I for Engineering Students	1	2
	• 0908342	Surveying Laboratory	1	0	3	Co. Surveying	1	2
	• 0908345	Linear Algebra	3	3	0	Calculus I for Engineering Students	1	3
	• 0908353	Hydraulics	3	3	0	Fluid Mechanics for Civil Engineering	2	3
	• 0908356	Water and Environmental Laboratory	1	0	3	Co. Water and Environmental Engineering	1	4
	• 0908359	CAD in Civil Engineering	3	3	0	Engineering Drawing	2	3
	• 0908361	Geotechnical Engineering	3	3	0	Strength of Materials	2	3
	• 0908362	Geotechnical Engineering Laboratory	1	0	3	Co. Geotechnical Engineering	2	3
	• 0908401	Engineering Practical Training	3	0	9	Passing 115 Credits for 8 weeks (280 Hrs.)	3	4
	• 0908433	Reinforced Concrete I	3	3	0	Structural Analysis	1	4
	• 0908434	Reinforced Concrete II	3	3	0	Reinforced Concrete I	2	4
	• 0908435	Steel Structures Design	3	3	0	Structural Analysis	2	4
	• 0908441	Traffic and Transportation Engineering	3	3	0	Surveying	1	4
	• 0908454	Engineering Hydrology	3	3	0	Hydraulics	2	4
	• 0908457	Water and Environmental Engineering	3	3	0	Hydraulics	1	4
	• 0908462	Foundation Engineering	3	3	0	Geotechnical Engineering	1	4
	• 0908501	Graduation Project I	1	0	3	Passing Engineering Practical Training	1	5
	• 0908502	Graduation Project II	2	0	6	Graduation Project I	2	5
	• 0908547	Highway and Pavement Design	3	3	0	Traffic and Transportation Engineering	2	4
	• 0908548	Highway and Pavement Laboratory	1	0	3	Co. Highway and Pavement Design	2	4
	• 0908571	Specifications and Quantity Surveying	3	3	0	Reinforced Concrete I	1	5

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<b>3.2 Elective requirements ( 9 ) credit hours</b>									
	•		0908503	Special Topics	3	3	0	Project Management and Value Engineering	5 <sup>th</sup> year level
	•		0908523	Infrastructure Systems	3	3	0	Project Management and Value Engineering	5 <sup>th</sup> year level
	•		0908533	Pre-Stressed Concrete	3	3	0	Reinforced Concrete I	5 <sup>th</sup> year level
	•		0908535	Flood Risk Management	3	3	0	Engineering Hydrology	5 <sup>th</sup> year level
	•		0908539	Introduction to Earthquake Engineering	3	3	0	Reinforced Concrete I	5 <sup>th</sup> year level
	•		0908545	Highway Maintenance	3	3	0	Highway and Pavement Design	5 <sup>th</sup> year level
	•		0908552	Water and Wastewater Networks Design	3	3	0	Hydraulics	5 <sup>th</sup> year level
	•		0908563	Advanced Geotechnical Engineering	3	3	0	Geotechnical Engineering	5 <sup>th</sup> year level
	•		0908586	Building Maintenance	3	3	0	Reinforced Concrete I	5 <sup>th</sup> year level
	•		0908587	Geographic Information System (GIS)	3	3	0	Surveying	5 <sup>th</sup> year level
	•		0908588	Advanced Construction Management	3	3	0	Project Management and Value Engineering	5 <sup>th</sup> year level
	•		0908589	Intelligent Transportation System (ITS)	3	3	0	Traffic and Transportation Engineering	5 <sup>th</sup> year level
	•		0908593	Green Buildings and Sustainable Construction	3	3	0	Project Management and Value Engineering	5 <sup>th</sup> year level
<b>3.3 Supporting requirements ( 13 ) credit hours</b>									
	•		0420821	General Chemistry Laboratory	1	0	3	Co. General Chemistry for Engineering Students	2 1
	•		0420822	General Chemistry for Engineering Students	3	3	0	-	2 1
	•		0908461	Project Management and Value Engineering	3	3	0	Engineering Economics	2 4
	•		0909404	Engineering Economics	3	3	0	Engineering Numerical Analysis	1 4
	•		0911366	Engineering Numerical Analysis	3	3	0	Calculus II for Engineering Students	1 3

(The end of the study plan for the major students)

Subjects taught in the major for students of other majors (university requirements, college requirements, major family requirements, support requirements)

Teaching style			Course No.	Course name	Credit hour	Theory Hours	Practical Hours	The type of requirement and the recipient
Fully electronic learning	Blended learning	Traditional learning						
	•		0908201	Technical Writing and Professional Ethics	2	2	0	Faculty Requirements
	•		0908461	Project Management and Value Engineering	3	3	0	Faculty Requirements