

ACADEMIC DIVISION OF ENGINEERING & DESIGN AND ARCHITECTURE			
Degree: BACHELOR OF SCIENCE Credits: 128		CURRICULUM Since: August 2019 (202001)	
Program: CIVIL ENGINEERING			
Description: Most of the infrastructure surrounding you is provided by the work performed by civil engineers. All the buildings, highways, bridges, drainages, channels, water, and wastewater systems are designed, built, maintained and improved by civil engineers. Civil engineers use science and mathematics to solve engineering problems in several areas such as: Geotechnical, Structural, Transportation, Water Resources, Environmental, Materials, Project Management and Surveying.			
Course Code	Course Title	Credits	Prerequisites
General Education Courses			
HUMA 111	Universal Culture and Civilization I	3	
SPAN 152	Fundamentals of reading and writing	3	Placement Exam
SPAN 250	Writing Techniques	3	SPAN 152
ENGL 152	Communicative English II	3	Placement Exam
ENGL 153	Advanced Communicative English	3	ENGL 152
ENGL 231	Research and Writing	3	ENGL 153
SOSC 111	Individual, Community, Govt. and Social Responsibility I	3	
SOSC 112	Individual, Community, Govt. and Social Responsibility II	3	SOSC 111
FSEN 105	Freshmen Seminar for Engineering	3	
MATH 152	Pre-Calculus II	4	Placement exam or MATH 151
MATH 152L	Pre-Calculus II Laboratory	0	Co-req. MATH 152
MATH 221	Calculus I	4	MATH 152
MATH 221L	Calculus I Lab	0	Co-req. MATH 221
PHSC 215	Physics for Engineering I	4	MATH 221
PHSC 215L	General Physics for Engineering I Lab	0	Co-req. PHSC 215
PHSC 216	Physics for Engineering II	4	PHSC 215
PHSC 216L	General Physics for Engineering II Lab	0	Co-req. PHSC 216
MATH 222	Calculus II	4	MATH 221
MATH 222L	Calculus II Lab	0	Co-req. MATH 222
MATH 223	Calculus III	4	MATH 222
MATH 223L	Calculus III Lab	0	Co-req. MATH 223
CHEM 203	Chemistry I	4	MATH 151
CHEM 203L	General Chemistry I Lab	0	Co-req. CHEM 203
BIOL 101	Int. to Biological Sciences I	3	
MATH 395	Differential Equations	3	MATH 222
Core Courses			
ENGI 160	Engineering Graphics	3	MATH 152
ENGI 122	Introduction to Computer Programming	3	MATH 152
ENGI 277	General Statics and Dynamics	3	PHSC 215
ENGI 318	Strength of Materials	3	ENGI 277
ENGI 280	Data Analysis	3	MATH 221
Concentration Courses			
CIEN 411	Principles of Surveying for Engineers	3	MATH 152
CIEN 420	Civil Engineering Materials	2	CHEM 203 & PHSC 215
CIEN 420L	Civil Engineering Materials Laboratory	1	Co-req. CIEN 420
CIEN 430	Structural Analysis I	3	ENGI 318
CIEN 432	Reinforced Concrete Design	3	CIEN 420 & CIEN 430
CIEN 434	Structural Steel Design	3	CIEN 420 & CIEN 430

Concentration Courses (continued)			
Course Code	Course Title	Credits	Prerequisites
CIEN 440	Introduction to Geotechnical Engineering	2	ENGI 318
CIEN 440L	Introduction to Geotechnical Engineering Lab	1	Co-req. CIEN 440
CIEN 444	Foundation Engineering	3	CIEN 440
CIEN 450	Hydrology & Hydraulics	3	PHSC 215
CIEN 465	Water and Wastewater Engineering	3	CIEN 411
CIEN 462	Environmental Engineering and Water Resources Lab	1	CHEM 203 & MATH 152
CIEN 470	Construction Project Management	3	Placement exam or MATH 151
CIEN 480	Transportation and Traffic Engineering	3	ENGI 280
CIEN 484	Highway Engineering	3	CIEN 411
CIEN 490	Civil Engineering Design Project	3	Program head's permission
Elective Courses (Select a minimum of 9 credits from below as indicated) plus 3 credits for free elective			
CIEN 403	Special Topics: Structures and Geotechnics	3	ENGI 277
CIEN 406	Special Topics: Environmental and Water Resources	3	CIEN 465
CIEN 407	Special Topics: Construction Management	3	CIEN 470
CIEN 408	Special Topics: Transportation	3	CIEN 480
CIEN 431	Structural Analysis II	3	CIEN 430
CIEN 436	Design of Wood Structure	3	CIEN 430
CIEN 461	Introduction to Environmental Engineering for CE	3	CHEM 203 & MATH 152
CIEN 474	Construction Cost Estimates	3	CIEN 470
CIEN 498	Undergraduate Research I	3	ENGI 280 & Program head's permission
CIEN 499	Undergraduate Research II	3	CIEN 498 & Program head's permission and literature review (if changing topic)
Entrepreneurship and Innovation Minor (Including CIEN 490, select from the list below until a minimum of 12 credits is completed.) ¹			
INNO 300	Sustainable Innovation (or ENTR 360)	3	Third Year Status
INNO 303	Product Development, Prototyping, and Idea Validation (or ENTR 401)	3	INNO 300
INNO 400	Startup Internship	3	Program head's permission
MANA 204	Mercantile Law and Corporate Ethics (or IMEN 341)	3	
¹ Students pursuing the minor in Entrepreneurship and Innovation must take at least one course of the minor sequence outside the School of Engineering as a free elective course.			
Development Courses (To develop academic skills for students entering with some deficiency)			
ENGL 152E ⁺	Fundamentals of Reading and Writing Enhanced	3	Placement Exam
ENGL 152EL ⁺	Fundamentals of Reading and Writing Enhanced Laboratory	0	Placement Exam
MATH 121	Intermediate Algebra	3	Placement Exam
MATH 121L	Intermediate Algebra Laboratory	0	Placement Exam
MATH 151	Pre-Calculus I	4	Placement Exam
MATH 151L	Pre-Calculus I Laboratory	0	Placement Exam
SPAN 152I ⁺⁺	Fundamentals of Reading and Writing Enhanced	3	Placement Exam
SPAN 152IL ⁺⁺	Fundamentals of Reading and Writing Enhanced Laboratory	0	Placement Exam
⁺ This combination replaces ENGL 152			
⁺⁺ This combination replaces SPAN 152			

Minimum grade required: All courses of the program must be approved with a minimum grade of C.

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SCHOOL OF ENGINEERING			
Degree: BACHELOR OF SCIENCE		PLAN OF STUDY	
Credits: 128		Since: August 2019 (202001)	
Program: CIVIL ENGINEERING			
Course Code	Course Title	Credits	Prerequisites
FIRST YEAR - FIRST SEMESTER			
FSEN 105	Freshmen Seminar for Engineering	3	
MATH 152	Pre-Calculus II	4	Placement Exam or MATH 151
MATH 152L	Pre-Calculus II Laboratory	0	Co-req. MATH 152
SPAN 152	Fundamentals of Reading and Writing	3	Placement Exam
ENGL 152	Communicative English II	3	Placement Exam
HUMA 111	Universal Culture and Civilization I	3	
		16	
FIRST YEAR - SECOND SEMESTER			
MATH 221	Calculus I	4	MATH 152
MATH 221L	Calculus I Lab	0	Co-req. MATH 221
CIEN 470	Construction Project Management	3	Placement Exam or MATH 151
SPAN 250	Writing Techniques	3	SPAN 152
ENGL 153	Advanced Communicative English	3	ENGL 152
SOCS 111	Individual, Community, and Social Responsibility I	3	
		16	
SECOND YEAR - FIRST SEMESTER			
PHSC 215	Physics for Engineering I	4	MATH 221
PHSC 215L	General Physics for Engineering I Lab	0	Co-req. PHSC 215
CIEN 411	Principles of Surveying for Engineers	3	MATH 152
ENGI 160	Engineering Graphics	3	MATH 152
ENGL 231	Research and Writing	3	ENGL 153
SOSC 112	Individual, Community, and Social Responsibility II	3	SOSC 111
		16	
SECOND YEAR - SECOND SEMESTER			
ENGI 277	Statics & Dynamics	3	PHSC 215
CIEN 465	Water and Wastewater Engineering	3	CIEN 411
MATH 222	Calculus II	4	MATH 221
MATH 222L	Calculus II Lab	0	Co-req. MATH 222
CHEM 203	Chemistry I	4	Placement Exam or MATH 151
CHEM 203L	General Chemistry I Lab	0	Co-req. CHEM 203
PHSC 216	Physics for Engineering II	4	PHSC 215
PHSC 216L	General Physics for Engineering II Lab	0	Co-req. PHSC 216
		18	

THIRD YEAR - FIRST SEMESTER			
ENGI 318	Strength of Materials	3	ENGI 277
CIEN 420	Civil Engineering Materials	2	CHEM 203 & PHSC 215
CIEN 420L	Civil Engineering Materials Laboratory	1	Co-req. CIEN 420
MATH 223	Calculus III	4	MATH 222
MATH 223L	Calculus III Lab	0	Co-req. MATH 223
ENGI 122	Introduction to Computer Programming	3	MATH 152
CIEN 462	Environmental Engineering and Water Resources Laboratory	1	MATH 152 & CHEM 203
BIOL 101	Int. to Biological Science I	3	
		17	
THIRD YEAR - SECOND SEMESTER			
CIEN 430	Structural Analysis I	3	ENGI 318
CIEN 440	Introduction to Geotechnical Engineering	2	ENGI 318
CIEN 440L	Introduction to Geotechnical Engineering Laboratory	1	Co-req. CIEN 440
MATH 395	Differential Equations	3	MATH 222
ENGI 280	Data Analysis	3	MATH 221
CIEN 450	Hydrology & Hydraulics	3	PHSC 215
		15	
FOURTH YEAR - FIRST SEMESTER			
CIEN 432	Reinforced Concrete Design	3	CIEN 420 & CIEN 430
CIEN 434	Structural Steel Design	3	CIEN 420 & CIEN 430
CIEN 444	Foundation Engineering	3	CIEN 440
CIEN 480	Transportation and Traffic Engineering	3	ENGI 280
-	Civil Engineering Elective I	3	Depends on Elective
		15	
FOURTH YEAR - SECOND SEMESTER			
CIEN 490	Civil Engineering Design Project	3	Program head's permission
CIEN 484	Highway Engineering	3	CIEN 411
-	Civil Engineering Elective II	3	Depends on Elective
-	Civil Engineering Elective III	3	Depends on Elective
-	Free Elective	3	Depends on Elective
		15	

Minimum grade required: All courses of the program must be approved with a minimum grade of C.

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