

# CIVIL ENGINEERING - Catalog Year 2024

Total Credits = **126**

## Freshman Year *Fall* Semester

Course Code	Description	Cr	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chem I Lab	1	
EGR 105	Foundations of Engineering I (A4)	1	
MTH 141 +	Calculus I (A1, B3)	4	
ECN 201	Principles of Microeconomics (A2)	3	
	General Education Outcome(s)*	3	

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## Freshman Year *Spring* Semester

Course Code	Description	Cr	
EGR 106	Foundations of Engineering II (A4)	2	
MTH 142 +	Calculus II (A1, B3)	4	
PHY 203	Elementary Physics I (A1)	3	
PHY 273	Elementary Physics Lab I (A1)	1	
GEO 103	Understanding the Earth (A1, B4)	4	
	General Education Outcome(s)*	3	

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## Sophomore Year *Fall* Semester

Course Code	Description	Cr	
CVE 205	Basic Surveying	1	
MCE 262	Statics	3	
MTH 243 +	Calculus for Functions of Several Vars (A1, B3)	3	
PHY 204	Elementary Physics II (A1)	3	
PHY 274	Elementary Physics Lab II (A1)	1	
STA 409	Statistics	3	
WRT 332	Technical Writing (B1, B2)	3	

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## Sophomore Year *Spring* Semester

Course Code	Description	Cr	
CHM 112 +	General Chemistry II Lecture	3	
CVE 220	Mechanics of Materials	3	
CVE 230	Mechanics of Materials Lab	1	
CVE 250	CADD for Civil Engineers	3	
MCE 263	Dynamics	3	
MTH 244	Differential Equations	3	

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Admission to the COE required for enrollment in "300" level and higher COE courses. Admission requires at least a 2.0 cumulative GPA and a C- or higher in each of the following; EGR 105 & 106, CHM 101/102, MTH 141 & 142, PHY 203/273, and either PHY 204/274 or CHM 112/114

## Junior Year *Fall* Semester

Course Code	Description	Cr	
CVE 346 +	Transportation Engineering	3	
CVE 354 +	Structural Engineering	3	
CVE 355	Structural Engineering Lab	1	
CVE 374 +	Environmental Engineering	3	
CVE 381 +	Geotechnical Engineering	3	
CVE 382	Geotechnical Engineering Lab	1	
MCE 354	Fluid Mechanics	3	

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## Junior Year *Spring* Semester

Course Code	Description	Cr	
CVE 347	Highway Engineering	3	
CVE 348	Highway Engineering Lab	1	
CVE 370 +	Hydraulic Engineering	3	
CVE 375	Environmental Engineering Lab	1	
ISE 304	Engineering Economy and Project Planning	3	
	Professional Elective**	3	

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## Senior Year *Fall* Semester

Course Code	Description	Cr	
CVE 400	Civil Engineering Licensure	1	
CVE 465	Analysis & Design of Concrete Structures	3	
CVE 483	Foundation Engineering	3	
CVE 497	Civil Engineering Design I	2	
	Professional Elective**	3	
	Professional Elective**	3	

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## Senior Year *Spring* Semester

Course Code	Description	Cr	
CVE 498	Civil Engineering Design II (D1)	3	
	Professional Elective**	3	
	Professional Elective**	3	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
---	Take FE Examination***	---	

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**\*General Education Outcomes:** If all Outcomes are satisfied in fewer spaces than provided, you must complete additional coursework of your choice (Free Elective) to ensure you have earned at least 120 credits as required to earn a BS degree. See the "General Education Outcomes" section at the bottom of page two for more information on satisfying these requirements.

**\*\*Professional Elective:** Three (3) of the fifteen (15) credits must be selected from the following courses: CVE 470, 471, 475, 477. The remaining twelve (12) credits can be any 300-level and above CVE courses and may include three (3) credits from the following courses: CHE 333, ELE 220, MCE 341, or MTH 215. A maximum of six (6) credits of Special Problems (CVE 491 or 492) may be taken. Strongly recommended courses include CVE 453, 460.

**\*\*\*Fundamentals of Engineering (FE) Examination:** All CVE majors are required to take the FE Examination offered by NCEES as a part of graduation requirements. Official NCEES proof of having taken the exam is required.

+Course prerequisites include grade requirements in previous coursework, see catalog or eCampus course description for details

SPECIFIED MATHEMATICS, SCIENCE, AND ENGINEERING COURSES											
INTRODUCTORY ENGINEERING						ENGINEERING SCIENCE and DESIGN					
Sem	Course	Cr	Grade	QP	Note	Sem	Course	Cr	Grade	QP	Note
	EGR 105 (A4)	1					CVE 205	1			
	EGR 106 (A4)	2					CVE 220	3			
							CVE 230	1			
		3					CVE 250	3			
MATHEMATICS							CVE 346	3			
	MTH 141 (A1 & B3)	4					CVE 347	3			
	MTH 142 (A1 & B3)	4					CVE 348	1			
	MTH 243 (A1 & B3)	3					CVE 354	3			
	MTH 244	3					CVE 355	1			
	STA 409	3					CVE 370	3			
		17					CVE 374	3			
NATURAL SCIENCES							CVE 375	1			
	CHM 101 (A1)	3					CVE 381	3			
	CHM 102	1					CVE 382	1			
	CHM 112	3					CVE 465	3			
	GEO 103 (A1 & B4)	4					CVE 400	1			
	PHY 203 (A1)	3					CVE 483	3			
	PHY 273 (A1)	1					CVE 497 [capstone]	2			
	PHY 204 (A1)	3					CVE 498 [capstone] (D1)	3			
	PHY 274 (A1)	1					ISE 304	3			
							MCE 262	3			
							MCE 263	3			
							MCE 354	3			
								54			
***ATTEMPT FUNDAMENTALS OF ENGINEERING (FE) EXAM											
---	<input type="checkbox"/> Oct/Nov	<input type="checkbox"/> Jan/Feb	---	---	---			3			
---	<input type="checkbox"/> Apr/May	<input type="checkbox"/> Jul/Aug	---	---	---			3			
								3			
								3			
								3			
								15			
*GENERAL EDUCATION OUTCOMES											
Sem	Course	Cr	Grade	QP	Note	Sem	Course	Cr	Grade	QP	Note
Science, Technology, Engineering, and Math (STEM) (A1)						Civic Knowledge & Responsibilities (C1)					
---	CHM & PHY (see above)	11	---	---	---						
Social and Behavioral Sciences (A2)						Global Responsibilities (C2)					
	ECN 201	3									
Humanities (A3)						Diversity & Inclusion (C3)					
Arts & Design (A4)						Ability to Synthesize (D1)					
---	EGR 105 & 106 (see above)	3	---	---	---	---	CVE 498 (see above)	3	---	---	---
Write Effectively (B1)						Grand Challenge (at least one course must be coded with a "G")					
	WRT 332	3									
Communicate Effectively (B2)						Free Elective					
---	WRT 332	---	---	---	---						
Mathematical, Statistical, or Computational Strategies (B3)						<i>If you fulfill all Outcomes in fewer spaces than indicated on page one, you can use those additional spaces to take a course(s) of your choice to ensure you reach at least 120 earned credits</i>					
---	MTH (see above)	11	---	---	---						
Information Literacy (B4)											
---	GEO 103 (see above)	4	---	---	---						

**\*General Education Outcomes:** at least 40 credits must be completed. (A1-D1) must be met by at least three credits. A single course may satisfy one or two outcomes, and at least one course must be a "Grand Challenge". No more than twelve credits can be from the same course code except HPR. General education courses may also be used to meet requirements of your major(s) or minor(s) when appropriate.

**\*\*Professional Elective:** Three (3) of the fifteen (15) credits must be selected from the following courses: CVE 470, 471, 475, 477. The remaining twelve (12) credits can be any 300-level and above CVE courses and may include three (3) credits from the following courses: CHE 333, ELE 220, MCE 341, or MTH 215. A maximum of six (6) credits of Special Problems (CVE 491 or 492) may be taken. Strongly recommended courses include CVE 453, 460.

**\*\*\*Fundamentals of Engineering (FE) Examination:** All CVE majors are required to take the FE Examination offered by NCEES as a part of graduation requirements. Official NCEES proof of having taken the exam is required.