

MAJOR IN CONSTRUCTION ENGINEERING

Requirements Effective Fall 2025

Freshman

		AUCC	Credits
CHEM 111	General Chemistry I (GT-SC2)	3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	1
CIVE 260	Engineering Mechanics-Statics		3
CO 150	College Composition (GT-CO2)	1A	3
CON 101	Introduction to Construction Management		3
CONE 103			3
CONE 192			1
MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	4
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	5
Total Credits			31

Sophomore

CIVE 261	Engineering Mechanics-Dynamics		3
CIVE 303	Infrastructure and Transportation Systems		3
CIVE 360	Mechanics of Solids		3
CIVE 367	Structural Analysis		3
CONE 201	Construction Systems and Decision Analysis		3
CONE 203			3
GEOL 150	Dynamic Earth (GT-SC2)	3A	4
MATH 261	Calculus for Physical Scientists III		4
MECH 237	Introduction to Thermal Sciences		3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		1C	3
Total Credits			35

Junior

CIVE 300	Fluid Mechanics		3
CIVE 302	Evaluation of Civil Engineering Materials		3
CIVE 355	Geotechnical Engineering		3
CIVE 356	Geotechnical Engineering Laboratory		1
CONE 301			1
CONE 302			5
CONE 401			3
CONE 404			3
CONE 487			1
MATH 340	Intro to Ordinary Differential Equations		4
Design Focus Area Electives (select one Focus Area):			6
Heavy Civil/Infrastructure:			
CIVE 467	Design of Reinforced Concrete Structures		

2 Major in Construction Engineering

And select one course from the following:

CIVE 401	Hydraulic Engineering
CIVE 423	Groundwater Engineering
CIVE 455	Applications in Geotechnical Engineering
CIVE 466	Design and Behavior of Steel Structures

Structures/Buildings:

CIVE 466	Design and Behavior of Steel Structures
CIVE 467	Design of Reinforced Concrete Structures

Water/Environmental Facilities:

CIVE 401	Hydraulic Engineering
CONE 410	

Total Credits **33**

Senior

CIVE 322	Basic Hydrology		3
CONE 402		4A,4B	3
CONE 403		4A,4C	3

Design Focus Area Electives (select the same Focus Area as Junior year above): 3

Heavy/Civil Infrastructure - select one course from the following not previously taken:

CIVE 401	Hydraulic Engineering
CIVE 423	Groundwater Engineering
CIVE 455	Applications in Geotechnical Engineering
CIVE 466	Design and Behavior of Steel Structures

Structures/Buildings - select one course from the following:

CIVE 455	Applications in Geotechnical Engineering
CONE 405	

Water/Environmental Facilities - select one course from the following:

CIVE 330	Ecological Engineering
CIVE 405	Sustainable Civil/Environmental Engineering
CIVE 423	Groundwater Engineering
CIVE 437	Wastewater Treatment Facility Design
CIVE 440	Nonpoint Source Pollution
CIVE 441	Water Quality Analysis and Treatment
CIVE 458	Environmental Geotechnics

Technical Electives (see list below) 3

Advanced Writing (<http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing>) 2 3

Arts and Humanities (<http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities>) 3B 3

Historical Perspectives (<http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives>) 3D 3

Social and Behavioral Sciences (<http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences>) 3C 3

Total Credits **27**

Program Total Credits: **126**

Technical Electives

Code	Title	Credits			
BC 351	Principles of Biochemistry	4	CIVE 405	Sustainable Civil/Environmental Engineering	3
CHEM 245	Fundamentals of Organic Chemistry	4	CIVE 413	Environmental River Mechanics	3
CHEM 341	Modern Organic Chemistry I	3	CIVE 423	Groundwater Engineering	3
CIVE 305	Intermediate AutoCAD	3	CIVE 437	Wastewater Treatment Facility Design	3
CIVE 330	Ecological Engineering	3	CIVE 439	Applications of Environmental Engr Concepts	3

CIVE 440	Nonpoint Source Pollution	3	CIVE 578	Infrastructure and Utility Management	3
CIVE 442	Air Quality Engineering	3	CON 370	Asphalt Pavement Materials and Construction	3
CIVE 455	Applications in Geotechnical Engineering	3	ENGR 550/ MATH 550	Numerical Methods in Science and Engineering	3
CIVE 458	Environmental Geotechnics	3	ERHS 446	Environmental Toxicology	3
CIVE 502	Fluid Mechanics	3	FIN 305	Fundamentals of Finance	3
CIVE 505	Structural Inspection, Management and Repair	3	GEOL 442	Applied Geophysics	4
CIVE 507	Transportation Engineering	3	GR 323/NR 323	Remote Sensing and Image Interpretation	3
CIVE 508	Bridge Engineering	3	LIFE 320	Ecology	3
CIVE 510	Applied Hydraulic System Design	3	MATH 332	Partial Differential Equations	3
CIVE 511	Coastal Engineering	3	MATH 369	Linear Algebra I	3
CIVE 512	Irrigation Systems Design	3	MGT 305	Fundamentals of Management	3
CIVE 513	Morphodynamic Modeling	3	MIP 300	General Microbiology	3
CIVE 514	Hydraulic Structures/Systems	3	MKT 305	Fundamentals of Marketing	3
CIVE 519	Irrigation Water Management	3	NR 319	Introduction to Geospatial Science	4
CIVE 520	Physical Hydrology	3			
CIVE 521	Hydrometry	3			
CIVE 524/WR 524	Modeling Watershed Hydrology	3			
CIVE 525	Water Engineering International Development	3			
CIVE 529	Environmental Organic Chemistry	3			
CIVE 530	Environ Engr at the Water-Energy-Health Nexus	3			
CIVE 531	Groundwater Hydrology	3			
CIVE 533/BIOM 533	Biomolecular Tools for Engineers	3			
CIVE 538	Aqueous Chemistry	3			
CIVE 540/CBE 540	Advanced Biological Wastewater Processing	3			
CIVE 541	Physical Chemical Water Treatment Processes	3			
CIVE 542	Water Quality Modeling	3			
CIVE 544	Water Resources Planning and Management	3			
CIVE 547/STAT 547	Statistics for Environmental Monitoring	3			
CIVE 549	Drainage and Wetland Engineering	3			
CIVE 550	Foundation and Retaining Wall Engineering	3			
CIVE 555	Mining Geotechnics	3			
CIVE 556	Slope Stability, Seepage, and Earth Dams	3			
CIVE 558	Containment Systems for Waste Disposal	3			
CIVE 559	Special Topics in Geotechnical Engineering	3			
CIVE 560	Advanced Mechanics of Materials	3			
CIVE 561	Advanced Steel Behavior and Design	3			
CIVE 562	Fundamentals of Vibrations	3			
CIVE 565	Finite Element Method	3			
CIVE 566	Intermediate Structural Analysis	3			
CIVE 567	Advanced Concrete Design	3			
CIVE 568	Design of Masonry and Wood Structures	3			
CIVE 571	Pipeline Engineering and Hydraulics	3			
CIVE 572	Analysis of Urban Water Systems	3			
CIVE 573	Urban Stormwater Management	3			
CIVE 574	Civil Engineering Project Management	3			
CIVE 575	Sustainable Water and Waste Management	3			
CIVE 576	Engineering Applications of GIS and GPS	3			