Civil Engineering Technology

Civil Engineering Technology Suggested Course Sequences

The following is the suggested plan for when to take each course to complete the Associate in Applied Science degree, based on the program requirements of the 2023-2024 catalog. This is only a recommendation — you may take courses in another order upon consultation with your advisor. This plan is based on you starting with college-level math and English courses, starting your program in the fall, and attending full-time. You can also follow this sequence if you attend part-time. Speak with your academic advisor about the plan and any questions. This program might also offer diplomas or certificates; visit the catalog or contact the program for details. Visit the Academic Advising page for instructions on locating your assigned advisor: https://www.cpcc.edu/academics/academic-advising

Civil Engineering Technology (A40140) Suggested Course Sequence

Term I		**Credits**
ENG 111	Writing and Inquiry	3.0
MAT 171	Precalculus Algebra	4.0
CEG 111	Introduction to Gis and Gnss	4.0
CEG 115	Intro to Tech & Sustainability	3.0
CEG 151	Cad for Engineering Technology	3.0
ACA 122	College Transfer Success	1.0
	Credits	**18**
Term II		
ENG 112	Writing and Research in the Disciplines	3.0
MAT 172	Precalculus Trigonometry	4.0
PHY 151	College Physics I	4.0
CEG 211	Hydrology & Erosion Control	3.0
SRV 110	Surveying I	4.0
	Credits	**18**
Term III		
MAT 271	Calculus I	4.0
	Credits	**4**
Term IV		
CEG 210	Construction Materials & Methods	3.0
CEG 235	Project Management and Estimating	3.0
DFT 152	CAD II	3.0
EGR 251	Statics	3.0
SRV 111	Surveying II	4.0
	Credits	**16**
Term V		
Behavioral/Social Science		3.0
Humanities/Fine Arts		3.0
CEG 212	Introduction to Environmental Technology	3.0
CIV 111	Soils and Foundations	4.0
EGR 252	Strength of Materials	3.0
	Credits	**16**
	Total Credits	**72**

Civil Engineering Technology - Geomatics (A40140G) Suggested Course Sequence

Term I		**Credits**
ENG 111	Writing and Inquiry	3.0
MAT 171	Precalculus Algebra	4.0
CEG 151	Cad for Engineering Technology	3.0
CEG 115	Intro to Tech & Sustainability	3.0
CEG 111	Introduction to Gis and Gnss	4.0
	Credits	**17**
Term II		
ACA 122	College Transfer Success	1.0
CEG 210	Construction Materials & Methods	3.0
CIV 111	Soils and Foundations	4.0
CEG 211	Hydrology & Erosion Control	3.0
SRV 110	Surveying I	4.0
	Credits	**15**
Term III		
Humanities/Fine Arts		3.0
	Credits	**3**
Term IV		
ENG 112	Writing and Research in the Disciplines	3.0
CEG 212	Introduction to Environmental Technology	3.0
SRV 111	Surveying II	4.0
SRV 210	Surveying III	4.0
	Credits	**14**
Term V		
ECO 251	Principles of Microeconomics	3.0
CEG 235	Project Management and Estimating	3.0
EGR 251	Statics	3.0
SRV 220	Surveying Law	3.0
SRV 240	Topo/Site Surveying	4.0
	Credits	**16**
	Total Credits	**65**

CIV 111. Soils and Foundations. 4.0 Credits. Class-2.0. Clinical-0.0. Lab-4.0. Work-0.0
This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to perform basic soil tests and analyze engineering properties of soil. This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement and foundations. Upon completion, students should be able to perform basis soil tests and analyze engineering properties of soil.
Prerequisites: Take EGR 250 EGR 251 or MEC 210; Minimum; grade C; Take ENG 111

CIV 125. Civil/Surveying CAD. 3.0 Credits. Class-1.0. Clinical-0.0. Lab-6.0. Work-0.0
This course introduces civil/surveying computer-aided drafting (CAD) software. Topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software.
Prerequisites: Take CEG 151

CIV 221. Steel and Timber Design. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces the basic elements of steel and timber structures. Topics include strength of materials applications, the analysis and design of steel and timber beams, columns, and connections and concepts of structural detailing. Upon completion, students should be able to analyze, design, and draw simple plans using Computer Aided Drafting and Design software (CADD).
Prerequisites: Take One: EGR 250 or MEC 210

CIV 222. Reinforced Concrete. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces the basic elements of reinforced concrete structures. Topics include analysis and design of reinforced concrete beams, slabs, columns, footings, and retaining walls. Upon completion, students should be able to analyze and design components of a structure using reinforced concrete and draw simple plans using Computer Aided Drafting and Design software (CADD).
Prerequisites: Take One: EGR 250, EGR 251, or MEC 210

CIV 230. Construction Estimating. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course covers quantity take-offs of labor, materials, and equipment and calculation of direct and overhead costs for a construction project. Topics include the interpretation of working drawings and specifications, types of contracts and estimates, building codes, bidding techniques and procedures, and estimating software. Upon completion, students should be able to prepare a detailed cost estimate and bid documents for a construction project.
Prerequisites: Take One: ARC 111, CIS 110, CIS 111, or EGR 115

CIV 250. Civil Engineering Technology Project. 2.0 Credits. Class-1.0. Clinical-0.0. Lab-3.0. Work-0.0
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Upon completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects.