

PROGRAM: Civil and Environmental Engineering Technology

Program Description:

Students prepare for careers as civil engineering technicians who typically work under the direct supervision of a project engineer. The program environment emulates a civil engineering/surveying firm, giving students practice in many aspects of the profession, including defining project requirements, conducting survey/field work, field engineering, construction staking, designing, estimating, modeling and client presentations. Instruction includes computer-aided design, the preparation of engineering calculations, and coordinate systems, which include lengths, directions, slopes, bearings areas, volumes, weights densities, moments, forces, reactions, flows, and loads. Students learn to use a variety of computer software application packages, including, but not limited to Word, Excel, Civil 3D, Hydraflow and SurvCE.

For program costs and fees refer to the catalog TUITION AND FEES PAGE.

Program Learning Outcomes:

1. Solve general, technical and engineering type problems
2. Use the computer as an aid to drafting
3. Produce drawings using computer aided drafting (CAD) software
4. Design digital 3D terrain models of existing and proposed surfaces
5. Design and calculate the 3D transportation geometrics to model alignments, profiles and sections
6. Read and produce drawings (orthographic) involving orthographic projection, sections, pictorial and auxiliary views
7. Solve problems involving plane trigonometry using a standard scientific calculator
8. Solve typical engineering strength of materials problems using a standard scientific calculator
9. Recognize the use of various materials in the construction industry
10. Solve engineering graphics problems using standard techniques and reference materials
11. Analyze physical and mechanical properties of soil and concrete
12. Identify drainage basins and compute runoff calculations using various models and methods
13. Solve basic hydraulic problems using the theory of incompressible fluids
14. Solve problems using theories learned in engineering mechanics
15. Utilize standard surveying equipment to make measurements and calculations to run a traverse, establish levels, keep notes and produce required drawings.
16. Establish grades, locate monuments and utilities
17. Use the Public Land Survey System to locate and describe parcels
18. Perform grading analyses and prepare volume calculations and calculate cut and fill by average-end-area

Civil and Environmental Engineering Technology AAS (90 credits)

Required Courses

Fall/Spring	CEET122	Building Information Modeling	5
	CEET131	Hydrological Engineering	5

	MATH&141	Precalculus I	5
	ENGR&111	Engineering Graphics I	5
	ENGL&101	English Composition I	5
	CMST&230	Small Group Communication	5
Winter	CEET121	Statics & Mechanics of Materials	5
	CHEM&121	Introduction Chemistry	5
	MATH&142	Precalculus II	5
	ENGR&112	Engineering Graphics II	5
Summer	CEET132	Civil Infrastructure Design	5
	CEET141	GIS for Asset Management	5
	CEET142	Applied Surveying	5
Winter/summer	CEET261	Civil & Environmental Site Design	5
	CEET296	Work Based Learning Experience	1-13
	AMATH170	Engineering Foundational Mathematics	5
Fall	CEET251	Soil Mechanics	5
	CEET252	Structural Design	5
	PHYS&121	Engineering Physics w/Lab	5

Electives

CEET231	Projects I	5
CEET232	Projects II	5
CEET297	Work Based Learning Seminar	2

General Education requirements are included in degree requirements

Note: See a Career Advisor prior to choosing courses that meet general education requirements.

Civil and Environmental Engineering Technology AAS-T (106 credits)

Required Courses

Fall/Spring	AMATH170	Engineering Foundational Mathematics	5
		Prerequisites: MATH 087	
	CEET122	Building Information Modeling	5

	ENGR&111	Engineering Graphics I	5
	ENGR&112	Engineering Graphics II	5
	MATH&141	Precalculus I	5
	ENGL&101	English Composition I	5
	ENGR191	Engineering Technology Study Lab I	1
Winter/Summer	CEET260	Advanced CAD Operations	5
	CS&141	Computer Science 1 Java	5
	ENGR&214	Statics	5
		Prerequisites: Physics&122	
	MATH&142	Pre-calculus II	5
	CHEM&121	Introduction Chemistry	5
	CMST&210	Interpersonal Communications	5
	ENGR192	Engineering Technology Study Lab II	1
		Prerequisites: ENGR191	
Fall/Spring	<i>PSYC&100</i>	<i>General Psychology</i>	5
	<i>MATH&151</i>	<i>Calculus I</i>	5
	ENGR&221	Engineering Physics I w/Lab	5
	CMST&152	Intercultural Communication	5
	ENGR193	Engineering Technology Study Lab III	1
		Prerequisites: ENGR192	
Winter/Summer	MATH&152	Calculus II	5
	<i>PHYS&222</i>	<i>Engineering Physics w/Lab</i>	5
	ENGR194	Engineering Technology Study Lab IV	1
		Prerequisites: ENGR193	
Fall/Spring	PHYS&223	Engineering Physics III w/Lab	5
	MATH&153	CALCULUS III	5
	ENGR195	Engineering Technology Study Lab V	1
		Prerequisites: ENGR194	
	ENGR196	Engineering Technology Study Lab VI	1
		Prerequisites: ENGR195	

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Civil Design CoT **not available**

Map Analysis CoT **not available**

Structural BIM CoT **not available**

Engineering Tech CoT **not available**