

ENGINEERING TECHNOLOGY

ONE-YEAR CERTIFICATE: ENGINEERING AND DRAFTING TECHNICIAN – 50 CREDITS

CAREER DESCRIPTION

Engineering and drafting technicians work with and provide technical support to licensed engineers and surveyors. Technicians prepare design drawings and assist with field work.

Technicians utilize knowledge of building materials, engineering practices, and mathematics to complete detailed drawings and to collect or evaluate data in the field. Theory and principles of design and graphics are implemented under the direction of engineering or surveying staff.

The coursework for the one-year certificate includes five computer-aided-drafting courses; beginning GIS course; introductory surveying class; introductory engineering courses; basic spreadsheets for engineering applications; basic writing courses; and math through trigonometry.

PROGRAM OUTCOMES

Students who successfully complete the Engineering and Drafting Technician One-Year Certificate will:

1. Use AutoCAD, Civil3D, and SolidWorks drafting software, GIS software
2. Interpret and prepare 2D and 3D drafting representations
3. Gain experience of engineering graphics
4. Prepare and plot drawings to scale using drafting standards, templates, and layer management
5. Use Word, Excel, PowerPoint
6. Describe use of surveying equipment to perform basic field survey and data collection
7. Communicate effectively
8. Think critically to solve engineering problems
9. Visualize and interpret real world situations and translate them into drawings and designs
10. Work effectively on a team

ONE-YEAR CERTIFICATE — Engineering and Drafting Technician

50 Credits — Recommended Sequence for Students (Students should see an advisor to customize their educational plan.)

SEQUENCE	Fall	Computer Aided Drafting I DRF 112 3 CR	Engineering Orientation I ENGR 111 3 CR	The Digital World and Geospatial Concepts GIS 203 4 CR	Academic Composition WR 121 4 CR	CREDITS 14	
	Winter	Computer Aided Drafting II DRF 113 3 CR	Problem Solving and Technology ENGR 112 3 CR	College Algebra MTH 111 5 CR	GIS I Intro to Geographic Information Systems GIS 234 4 CR	Human Relations Elective <i>from Approved List, p. 86</i> 3 CR	CREDITS 18
	Spring	GIS II Data Analysis and Applications GIS 235 4 CR	Engineering Graphics ENGR 245 3 CR	Elementary Functions MTH 112 4 CR	Computer Aided Drafting – Civil 3D Virtual Design CIV 214 3 CR	Surveying I SUR 161 4 CR	CREDITS 18

NOTES

Scheduling requirements may prevent all courses from being offered every term. Consultation with an advisor is critical to student's selection of courses.

Please see an advisor for a degree planning worksheet for this program.

UCC General Education Requirements. A minimum of 50 credit hours must be completed to receive a Completion Certificate at UCC. If student places higher than Math 095, student may need to take additional elective courses to graduate with 45 or more hours. Engineering faculty advisor can provide recommendations on electives. Approved UCC Human Relations electives for a Completion Certificate are listed on p. 86. See UCC Career and Advising Services.

Engineering Program Requirements. Student must complete all required credit hours with a grade of C or better in all courses.

Engineering Program Approved Electives. Students may benefit by taking more credits hours and/or a higher level of mathematics than MTH 112 and basic science courses. See the Engineering faculty advisor.