

ENGINEERING TECHNOLOGY

ASSOCIATE OF APPLIED SCIENCE: CIVIL ENGINEERING AND SURVEYING TECHNOLOGY TECHNICIAN
MINIMUM 98 CREDITS

CAREER DESCRIPTION

Civil engineering and surveying are some of the broadest fields of engineering, and are part of virtually all construction-related projects. Graduates have local, state-wide, and nation-wide employment opportunities.

The field of civil engineering deals with planning, design, construction, and maintenance of private and public projects. Projects include highways, bridges, dams, subdivisions, water supply and waste systems.

Land Surveyors perform a variety of important tasks such as boundary surveys, topographic mapping and construction staking.

Civil Engineering and Surveying Technology graduates work with or in support of professional engineers and land surveyors.

PROGRAM OUTCOMES

Students who successfully complete an Associate of Applied Science degree in Civil Engineering and Surveying Technology will:

1. Use AutoCAD, Civil3D, and SolidWorks drafting software, GIS software, and MATLAB software
2. Use Word, Excel, PowerPoint
3. Use surveying equipment to perform basic land and construction surveys
4. Use basic lab equipment to test basic properties of soils, aggregate and concrete
5. Interpret plans and contract documents
6. Complete capstone municipal design project
7. Communicate and write 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 to complete an engineering project

CAREER AND EDUCATIONAL PATHWAYS

This program prepares students to be job-ready with the 2-year AAS degree, and also provides students with the option of adding a third year of course work to complete an AS degree and transfer. The two quarters of calculus are necessary to provide the future transfer pathway.

UCC also offers Occupational Skills Training options, which include more on-the-job training and less math. See a UCC Engineering faculty advisor or academic advisor to review.

ENGINEERING ELECTIVES

Choose from the following (see UCC advisor)

SUR 162	*Plane Surveying II	4
SUR 163	*Route Surveying	4
SUR 242	*Land Descriptions & Cadastre	3
WQT 227	Wastewater Treatment	3
WQT 228	Wastewater Collection	3
WQT 260	Water Treatment	3
WQT 261	Water Distribution	4

* SUR 162, SUR 163, and SUR 242 transfer to the Geomatics program at OIT.

ASSOCIATE OF APPLIED SCIENCE — Civil Engineering and Surveying Technology Program

Minimum 98 Credits — Recommended Sequence for Students (Students should see an advisor to customize their educational plan.)

YEAR ONE	Fall	Engineering Orientation I ENGR 111 3 CR	Computer Aided Drafting I DRF 112 3 CR	Academic Composition WR 121 4 CR	Digital World and Geospatial Concepts GIS 203 4 CR	CREDITS 14	
	Winter	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	Computer Aided Drafting II DRF 113 3 CR	Approved Human Relations Elective <i>see pg. 82</i> 3 CR	CREDITS 18
	Spring	Computer Aided Drafting – Civil 3D Virtual Design CIV 214 3 CR	Elementary Functions MTH 112 4 CR	GIS II Data Analysis and Applications GIS 235 4 CR	Surveying I SUR 161 4 CR	Engineering Graphics ENGR 245 3 CR	CREDITS 18
	Summer	Coop. Work Experience CIV 280 3 CR					CREDITS 3
YEAR TWO	Fall	Statics ENGR 211 4 CR	Calculus I MTH 251 5 CR	Technical Report Writing WR 227 4 CR	Approved Engineering Elective <i>see facing page</i> 4 CR	CREDITS 17	
	Winter	Dynamics ENGR 212 4 CR	Calculus II MTH 252 4 CR	CWE Seminar I CWE 161 1 CR	Approved Engineering Elective <i>see facing page</i> 4-6 CR	CREDITS 13-15	
	Spring	Strength of Materials ENGR 213 4 CR	Fundamentals of Public Speaking SP 111 4 CR	Soil Science and Lab SOIL 205/SOIL 206 4 CR	Approved Engineering Elective <i>see facing page</i> 3 CR	CREDITS 15	

NOTES

UCC General Education Requirements. A minimum of 90 credit hours must be completed to receive an AAS at UCC. If student places higher than Math 111, student may need to take additional elective courses to graduate with 90 or more hours. Engineering faculty advisor can provide recommendations on electives. Approved UCC Human Relations electives for an AAS are listed on p. 86. See UCC Career and Advising Services.

OAR Requirements for FLS and FE Exams. A minimum of 96 credit hours for the AAS are required under OARs to take either the FLS or FE exam in Oregon after working for two years. See the UCC Engineering Faculty Advisor and refer to OAR 800-010-222/226 for educational requirements related to the fundamentals exams.

Engineering Program Approved Electives. Students may benefit by taking more than 96 credits hours and more electives than required for graduation, depending on career and educational goals. WLD 131 Basic Metallurgy or WLD 140 Blue Print Reading and Sketching may be substituted for 3 credits of Cooperative Work Experience, CIV 280.