

# ENGINEERING TECHNOLOGY

## ASSOCIATE OF APPLIED SCIENCE: CIVIL ENGINEERING AND SURVEYING TECHNOLOGY – APPLIED WATER QUALITY OPTION – 96 CREDITS

### CAREER DESCRIPTION

This degree option includes additional occupational skills training to prepare students with more on-the-job work experience. The program includes 24 credit hours of occupational skills training/cooperative work experience. This is the equivalent of approximately 5 months of full-time work experience. UCC Engineering faculty advisors will assist with finding placement for occupational skills training/cooperative work experience.

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.

Design, operation and maintenance of water and wastewater systems is an essential component of protecting our water resources, providing clean water, and protecting public health. Graduates of this program have multiple career pathways, including work with, or in support of, professional engineers and land surveyors as design technicians or work in operation/maintenance at water quality facilities.

### 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. Describe water quality operations for wastewater collection and treatment and water distribution and treatment
4. Use surveying equipment to perform basic land and construction surveys
5. Use basic lab equipment to test basic properties of soils, aggregate and concrete
6. Interpret plans and contract documents
7. Complete capstone municipal design project
8. Communicate and write effectively
9. Think critically to solve engineering problems
10. Visualize and interpret real world situations and translate them into drawings and designs
11. Work effectively on a team to complete an engineering project

# ASSOCIATE OF APPLIED SCIENCE — Civil Engineering and Surveying Technology Program – Applied Water Quality Option

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

<b>YEAR ONE</b>	<b>Fall</b>	Computer Aided Drafting I DRF 112 3 CR	Engineering Orientation I ENGR 111 3 CR	Digital World and Geospatial Concepts GIS 203 4 CR	Academic Composition WR 121 4 CR	<b>CREDITS 14</b>	
	<b>Winter</b>	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	<b>CREDITS 18</b>
	<b>Spring</b>	GIS II Data Analysis and Applications GIS 235 4 CR	Engineering Graphics ENGR 245 3 CR	Elementary Functions MTH 112 4 CR	Surveying I SUR 161 4 CR	Computer Aided Drafting – Civil 3D Virtual Design CIV 214 3 CR	<b>CREDITS 18</b>
<b>YEAR TWO</b>	<b>Fall</b>	Water Distribution WQT 261 4 CR	Coop. Work Experience – Water Quality Treatment WQT 280 8 CR	Technical Report Writing WR 227 4 CR	<b>CREDITS 16</b>		
	<b>Winter</b>	Wastewater Treatment WQT 227 3 CR	Wastewater Collection WQT 228 3 CR	Coop. Work Experience – WQT 280 8 CR	CWE Seminar I CWE 161 1 CR	<b>CREDITS 15</b>	
	<b>Spring</b>	Water Treatment WQT 260 3 CR	Coop. Work Experience – WQT 280 8 CR	Fundamentals of Public Speaking SP 111 4 CR	<b>CREDITS 15</b>		

## 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.

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