APPLIED INDUSTRIAL TECHNOLOGY (OPERATING ENGINEERS), ASSOCIATE OF APPLIED SCIENCE

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Operating Engineers, as well as earn an Associate of Applied Science degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman and equipment mechanic. Operating engineers operate and maintain hoisting, grading, excavating and paving equipment, consisting of cranes, bulldozers, scrapers, graders, endloaders, concrete and asphalt plants, rollers and pumps. The Operating Engineer is generally employed in the building of highways, airports, buildings, waterways, stadiums and sewers.

Program contact: Learn more

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more about how certificate credits apply to the related degree.

Program Admission Requirements

- Aptitude Test
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Recognize hazardous conditions, wear appropriate safety equipment and take preventative measures following company, federal, and state procedures.
2. Operate and maintain a variety of construction equipment in a safe and productive manner.
3. Recognize and apply underlying engineering principles of the operating engineers trade, including machine characteristics, blueprint reading, problem solving and technology skills.
4. Plan and manage personal and professional life to accommodate all job requirements, including providing reliable transportation, meeting contractor needs, balancing family obligations, adapting to a flexible work schedule, complying with a drug-free environment, and taking opportunities to upgrade skills.
5. Commit to and understand the nature of working in the construction trade, especially, planning for seasonal work.
6. Communicate verbally, nonverbally, and in writing with the construction team, which includes members of all other trades, contractors, and government agencies.
7. Be prepared to sit for the CDL License exam, Forklift Operating Certification exam, and other optional specialty certifications such as the National Crane Certification Organization exam.

MATH-1140, MATH-1141, MATH-1200, MATH-1270, and MATH-1280 can no longer count towards fulfilling the college-level mathematics requirement. These courses were re-classified as developmental mathematics by the state of Ohio in 2016. Tri-C established a 5-year transitioning window for students who had completed these courses prior to 2016 to apply them towards meeting graduation requirements, which expired in Summer 2021. It is highly recommended to see a counselor to determine the appropriate math required for your current major.

Suggested Semester Sequence

First Semester		Credit Hours
ATOE-1100	Operating Engineering Concepts	4
ATOE-1200	Basic Mechanical Concepts	3
ATOE-1650	Graders and Plans	2
MATH-1xxx	1000-level MATH course or higher	3
Select one of the following:		3
BADM-xxxx	Business Elective	
CNST-xxxx	CNST Elective	
Select one of the following:		3
ENG-1010	College Composition I	
ENG-101H	Honors College Composition I	
	Credit Hours	18
Second Semester		
ATOE-1700	Paving, Tractor, Backhoe Operations	3
ATOE-2100	Mobile Crane	2
ATOE-2600	Bulldozer Practice	3
Communication requirement [1]		3
Select one of the following:		3
BADM-xxxx	Business Elective	
CNST-xxxx	CNST Elective	
Select one of the following:		3
IT-1090	Computer Applications	
IT-109H	Honors Computer Applications	
	Credit Hours	17
Third Semester		
ATOE-2200	Mechanical Repair	3
ATOE-2620	Backhoe Practice	3

ATOE-xxxx	ATOE Elective course	1-3
Natural Sciences requirement		3
Select one of the following:		3
BADM-xxxx	Business Elective	
CNST-1731	Construction Print Reading	
FIN-1061	Personal Finance	
	Credit Hours	13-15
Fourth Semester		
AIT-2990	Contracting in a Diverse World	3
ATOE-2640	Advanced Grader Practice	3
ATOE-2660	Grader Safety	2
Social & Behavioral Sciences requirement [2]		3
Select one of the following:		3
BADM-xxxx	Business Elective	
CNST-2131	Construction Methods and Materials	
	Credit Hours	14
	Total Credit Hours	62-64

1 ENG-2151 Technical Writing or COMM-1000 Fundamentals of Interpersonal Communication highly recommended.

2 Recommend PSY-1050 Introduction to Industrial/Organizational Psychology.

Technical Electives

Code	Title	Credit Hours
ATOE-2650	Safety Training Passport	1
ATOE-2670	Rough Terrain Forklift Operation	2
ATOE-2680	Hazardous Material Handling and Field Safety	2

Business Electives

Recommended electives in Business

Code	Title	Credit Hours
BADM-1020	Introduction to Business	3
BADM-1210	Labor-Management Relations	3
BADM-1122	Principles of Management and Organizational Behavior	3
BADM-1301	Small Business Management	3
BADM-2151	Business Law	3
BADM-2450	New Business Development	5

Construction Management Electives

Recommended electives in Construction Management

Code	Title	Credit Hours
CNST-1281	Construction Engineering Orientation	3
CNST-1510	Green Building & Sustainability I	3
CNST-1731	Construction Print Reading	3
CNST-2131	Construction Methods and Materials	3