

# CONSTRUCTION ENGINEERING TECHNOLOGY, ASSOCIATE OF APPLIED SCIENCE



This program prepares students for the construction industry with positions in scheduling, estimating, sales & marketing, assistant project management, assistant field superintendents, and project engineers. The program includes comprehensive study in contract documents, construction materials & methods, scheduling, and estimating for residential and light commercial building. Graduates can be employed with construction contractors, engineering/architectural firms, building material suppliers, public building agencies, or they can transfer into university programs in construction management.

**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

- High School Diploma/GED.
- ENG-0995 Applied College Literacies or appropriate score on English placement test.
- MATH-0965 Intermediate Algebra, with "C" or higher, or qualified Math placement.
- Complete the following:
  - CNST-1281 Construction Engineering Orientation
  - CNST-1290 Construction Print Reading
  - IT-1090 Computer Applications

## Program Learning Outcomes

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

1. Recognize purpose for building information modeling within building design.
2. Monitoring project work for compliance with contract documents.
3. Perform basic surveying tasks including layout of vertical and horizontal alignments, comprehend the underlying mathematical principles and apply the information obtained.

4. Interpret the intent of plans and specifications as they relate to the various aspects of the construction project from the perspective of the owner, design professional, construction manager, and contractor and have the associated computer proficiencies.
5. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract document tasks, and implement project processes for successful project completion.
6. Using critical path method to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard technology.
7. Apply sound estimating and cost management principles, using industry standard computer technology to develop and maintain an organized management tool that effectively projects and communicates the projects financial status.
8. Use critical thinking skills to anticipate, identify, respond to, and resolve problems.
9. Use verbal and written skills with technological tools to clearly and effectively communicate, using appropriate protocols to project stakeholders.

## Suggested Semester Sequence

First Semester		Credit Hours
CNST-1281	Construction Engineering Orientation	3
CNST-1290	Construction Print Reading	2
MATH-1530	College Algebra (or higher) <sup>1</sup>	4
Select one of the following:		3
ENG-1010	College Composition I	
ENG-101H	Honors College Composition I	
Select one of the following:		3
IT-1090	Computer Applications <sup>2</sup>	
IT-109H	Honors Computer Applications	
<b>Credit Hours</b>		<b>15</b>
Second Semester		Credit Hours
CNST-1751	Construction Safety	2
CNST-1411	CAD Technology in Construction	2
CNST-2131	Construction Methods and Materials	3
MATH-1540	Trigonometry (or higher)	3
PHYS-1210	College Physics I <sup>3</sup>	4
<b>Credit Hours</b>		<b>14</b>
Summer Session		Credit Hours
Select one of the following:		3
ENG-1020	College Composition II	
ENG-2151	Technical Writing	
Arts and Humanities/Social and Behavioral Sciences requirement		3
<b>Credit Hours</b>		<b>6</b>
Third Semester		Credit Hours
CNST-2201	Introduction to Building Information Modeling	3
CNST-2210	Mechanical and Electrical Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3

CNST/MET/UT-XXXX	CNST, MET, or UT Elective (See recommended list below)	3
Select one of the following:		3
MET-1601	Technical Statics	
MET-2610	Statics <sup>4</sup>	
<b>Credit Hours</b>		<b>15</b>
<b>Fourth Semester</b>		
CNST-2330	Construction Scheduling	3
CNST-2631	Construction Management Systems	3
CNST/UT-XXXX	CNST or UT Elective (See recommended list below)	3
Select one of the following:		3
MET-2200	Strength of Materials	
MET-2630	Engineering Strength of Materials <sup>4</sup>	
Select one of the following:		3
ACCT-1020	Applied Accounting	
ACCT-1311	Financial Accounting ((See Recommended List Below))	
MET-2422	Fundamentals of Engineering Economics <sup>4</sup>	
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>65</b>

CNST-1670	Highway Inspection	2
CNST-2140	Advanced Material Testing & Inspection	2
<b>Surveying</b>		
CNST-1740	Fundamentals of Geographic Information Science	3
CNST-2110	Basic Survey Practices	3
CNST-2535	Legal Principles in Surveying	3
CNST-2500	Construction Surveying	3
CNST-2540	Ohio Lands	2
CNST-2570	Geodetic Surveying	3

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.

- <sup>1</sup> MATH-1580 Precalculus or MATH-1610 Calculus I will be accepted in place of both MATH-1530 College Algebra and MATH-1540 Trigonometry but an additional 2 credit hours of general electives may be needed to meet degree requirements.
- <sup>2</sup> MET-2550 Engineering Analysis Using MATLAB or IT-2670 C/C++ Programming Language will be accepted in place of IT-1090 Computer Applications to meet this requirement. Recommended for students planning on transferring for Civil/Construction Engineering.
- <sup>3</sup> PHYS-2310 General Physics I will be accepted in place of PHYS-1210 College Physics I. Recommended for students planning on transferring for Civil/Construction Engineering.
- <sup>4</sup> Recommended for students planning on transferring Civil/Construction Engineering.

## Recommended Electives

Code	Title	Credit Hours
<b>Construction Management Transfer</b>		
CNST-2110	Basic Survey Practices	3
CNST-1510	Green Building & Sustainability I	3
ACCT-1311	Financial Accounting	3
<b>Civil/Construction Engineering Transfer</b>		
CNST-2110	Basic Survey Practices	3
MET-2430	Engineering Probability and Statistics	3
<b>Advanced Construction Management/Utility Management</b>		
CNST-1740	Fundamentals of Geographic Information Science	3
CNST-2631	Construction Management Systems	3
CNST-2510	Introduction to Asset Management	3
CNST-1770	Hazardous Waste Operations and Emergency Response	2
<b>Construction Materials Tester/Construction Inspector</b>		