

ASSOCIATE OF APPLIED SCIENCE IN CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY

The associate degree program prepares technicians to support civil engineers in structural design, public works, construction, transportation, and environmental engineering. Graduates are hired by consulting engineers, architects, contractors, and government agencies.

Students in the Civil and Construction Engineering Technology (CCET) program may choose to complete two years of study and earn an Associate of Applied Science (AAS) degree. The AAS degree provides early access to employment in engineering support positions. Upon completion of the AAS degree, the student may continue on to the Bachelor of Science in Applied Science (BSAS) degree. This program provides additional coursework, continuing the student's growth to that of an engineer or engineering technologist. Exceptional students may be eligible for enrollment in a Master of Engineering or Master of Business Administration program.

Program Educational Objectives

Educational objectives for the civil and construction engineering technology programs have been developed by faculty and the program industrial advisory committee to support the university, college, and the School of Computer Science, Information, and Engineering Technology missions. Graduates of the CCET associate degree program are prepared to support civil engineers in:

- structural design
- public works
- construction
- inspection
- transportation
- environmental engineering

During their first few years after earning the AAS in civil and construction engineering technology degree at YSU, graduates will have demonstrated the ability to:

1. Secure employment and achieve recognition in a technical career related to their civil and construction engineering technology degree.
2. Continue to gain professional knowledge through lifelong learning and communicate effectively in a professional environment.
3. Advance in pursuit of the BSAS degree.

Accreditation

The Associate of Applied Science in Civil and Construction Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Program Criteria for Civil Engineering Technology and Construction Engineering Technology.

Date of last campus visit: October 2024
Accredited through: 2030
Next campus visit: October 2029

| COURSE | TITLE | S.H. |
|--|---|------|
| FIRST YEAR REQUIREMENT -STUDENT SUCCESS | | |
| YSU 1500 | Success Seminar | 1-2 |
| or YSU 1500S | Youngstown State University Success Seminar | |
| or HONR 1500 | Intro to Honors | |

General Education Courses:

| | | |
|-----------------------------|--|--------------|
| ENGL 1550 | Writing 1 | 3-4 |
| or ENGL 1549 | Writing 1 with Support | |
| ENGL 1551 | Writing 2 | 3 |
| Gen Ed Math | | |
| MATH 1513 | Algebra and Transcendental Function | 5-10 |
| or MATH 1510 & MATH 1511 | College Algebra and Trigonometry | |
| or MATH 1510C & MATH 1511C | College Algebra with Co-requisite Support and Trigonometry with Co-requisite Support | |
| CMST 1545 | Communication Foundations | 3 |
| Gen Ed AH | | |
| PHIL 2625 | Introduction to Professional Ethics | 3 |
| or PHIL 2626 | Engineering Ethics | |
| Gen Ed NS | | |
| PHYS 1501 | Fundamentals of Physics 1 | 4 |
| or PHYS 2610 | General Physics 1 | |
| Courses in Major: | | |
| MATH 1570 | Applied Calculus 1 | 4 |
| or MATH 1571 | Calculus 1 | |
| ENTC 1505 | Engineering Technology Concepts | 4 |
| or ENGR 1550 & ENGR 1560 | Engineering Concepts and Engineering Computing | |
| CCET 1503 | CAD Technology | 2 |
| CCET 1504 | Drafting and Plan Reading | 2 |
| MET 1515 | Mechanics 1 | 3 |
| CCET 2604 | Properties and Strength of Materials | 3 |
| CCET 2614L | Materials Laboratory 1 | 2 |
| CEEN 2610 | Surveying | 3 |
| CEEN 2610L | Surveying Laboratory | 1 |
| MET 2616 | Mechanics 2 | 3 |
| CCET 3709 | Structural Analysis 1 | 3 |
| CCET 2620 | Transportation Technology | 3 |
| CCET 2607 | Civil 3D | 3 |
| CCET 3724 | Hydraulics and Land Development | 3 |
| CCET 3706 | Structural Design | 4 |
| CCET 3711 | Specifications and Estimating | 3 |
| Total Semester Hours | | 68-75 |

Year 1

| Fall | | S.H. |
|-------------------------------------|---|-------------|
| YSU 1500 | Success Seminar | 1-2 |
| or YSU 1500S | or Youngstown State University Success Seminar | |
| or HONR 1500 | or Intro to Honors | |
| ENTC 1505 | Engineering Technology Concepts | 4 |
| or ENGR 1550 and ENGR 1560 | or Engineering Concepts and Engineering Computing | |
| CCET 1503 | CAD Technology | 2 |
| CCET 1504 | Drafting and Plan Reading | 2 |
| MATH 1513 | Algebra and Transcendental Function | 5-10 |
| or MATH 1510 and MATH 1511 | or College Algebra and Trigonometry or College Algebra with Co-requisite Support and Trigonometry with Co-requisite Support | |
| or MATH 1510C and MATH 1511C | | |

| | | |
|-----------------------------|--|--------------|
| ENGL 1550 or ENGL 1549 | Writing 1 or Writing 1 with Support | 3-4 |
| Semester Hours | | 17-24 |
| Spring | | |
| MET 1515 | Mechanics 1 | 3 |
| CCET 2604 | Properties and Strength of Materials | 3 |
| CCET 2614L | Materials Laboratory 1 | 2 |
| ENGL 1551 | Writing 2 | 3 |
| PHYS 1501 or PHYS 2610 | Fundamentals of Physics 1 or General Physics 1 | 4 |
| Semester Hours | | 15 |
| Year 2 | | |
| Fall | | |
| CEEN 2610 & 2610L | Surveying and Surveying Laboratory | 4 |
| MET 2616 | Mechanics 2 | 3 |
| CCET 3709 | Structural Analysis 1 | 3 |
| CCET 2620 | Transportation Technology | 3 |
| PHIL 2626 or PHIL 2625 | Engineering Ethics (Arts & Humanities GER) or Introduction to Professional Ethics | 3 |
| CCET 2607 | Civil 3D | 3 |
| Semester Hours | | 19 |
| Spring | | |
| MATH 1570 or MATH 1571 | Applied Calculus 1 or Calculus 1 | 4 |
| CCET 3724 | Hydraulics and Land Development | 3 |
| CCET 3706 | Structural Design | 4 |
| CCET 3711 | Specifications and Estimating | 3 |
| CMST 1545 | Communication Foundations | 3 |
| Semester Hours | | 17 |
| Total Semester Hours | | 68-75 |

Program Outcomes

ASSOCIATE OF APPLIED SCIENCE in civil and construction engineering technology

Graduates of the Associate Degree in Civil and Construction Engineering Technology will possess the following competencies upon graduation:

- **Learning Outcome 1:** ability to use graphic techniques to produce engineering documents and use modern instruments, methods, and techniques to implement construction contracts, documents, and codes
- **Learning Outcome 2:** conduct standardized field/laboratory testing on civil engineering materials and evaluate materials/methods for construction projects
- **Learning Outcome 3:** utilize modern surveying methods for land measurement and/or construction layout
- **Learning Outcome 4:** determine forces and stresses in elementary structural systems
- **Learning Outcome 5:** estimate material quantities and costs for technical projects
- **Learning Outcome 6:** employ productivity software to solve technical problems