

CONSTRUCTION ENGINEERING TECHNOLOGY, BS

Bachelor of Science in Construction Engineering Technology (299103BS)

More on the Construction Engineering Technology programs (<https://www.uakron.edu/engineering/CE/undergraduate/construction-tech/>)

Program Description

The BS in Construction Engineering Technology degree program is an upper-level degree program designed to provide the student with additional education beyond the AAS degree in Construction Engineering Technology. This degree is also designed to meet the formal education requirements for registration as a Professional Engineer in the State of Ohio. The BS in Construction Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, <https://www.abet.org> (<https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.abet.org%2F&data=05%7C01%7Ccarlett%40uakron.edu%7C5791045ba2454259bafa08dbb45cc8ca%7CE8575dedd7f94ecea4aa0b32991aeedd%7C0%7C0%7C638302082821016648%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ikh1bWw1CjIyVCI6Mn0%3D%7C3000%7C%7C&sdata=0xjmXCWxxZ5sISWjeuS2RhKBQ6jZ7BuLNoayXcB9Sw%3D&reserved=0>), under the General Criteria and Program Criteria for *Construction Engineering Technology and Similarly Named Programs*.

This degree program is defined as follows:

- The first two years are completed as an AAS degree in Construction Engineering Technology or similar associate degree program.
- The program requires two years of additional prescribed coursework.
- The program requires a cooperative work experience in the construction field. The student normally completes the co-op requirement between the junior and senior years.

The BS in Construction Engineering Technology degree program includes classroom, laboratory and industry experiences which prepare students for careers in the construction industry and other allied industries.

The Bachelor of Science in Construction Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>)

Career Opportunities Available

Individuals working in the field of construction engineering technologies use knowledge of construction methods, business operations and management skills to support construction projects. They work on residential or commercial buildings, bridges, roads, dams, wastewater treatment systems, or other similar projects. Common jobs assumed by graduates of this program include:

- **Field Engineer** - Monitors activities at construction sites. Works to ensure construction progresses as scheduled and contract

specifications are adhered to. Inspects construction site daily and works with contractors to complete scope items.

- **Project Engineer** - Under the supervision of the Project Manager, provides technical support to construction staff. Reviews plans and other technical documents, answers questions regarding the scope and/or timing of the project, and monitors costs and project progress.
- **Construction Manager** - plan, organize, direct and coordinate building projects. Often called project managers, constructors, construction superintendents, project engineers, construction supervisors, or general contractors.
- **Construction Inspector** - ensure that construction, alteration, or repair complies with building codes and ordinances, zoning regulations, and contract specifications
- **Construction Coordinator** - coordinates construction scheduling and communication and acts as a liaison to project management concerning bids, subcontracting, progress and delays.
- **Cost Estimator or Cost Engineer** - responsible for creating the budget for a project to bid on it or aid in the project's management. Monitors and analyzes project cost estimates, expenditures, and forecasts.
- **Scheduler** - planning and scheduling of construction work and work crew. Gathers and analyzes information to prepare reports on the progress of projects.
- **Engineering Technician** - use the principles and theories of science, engineering, and mathematics to solve technical problems in research and development, manufacturing, sales, construction, inspection, and maintenance.

Requirements for Admission

Applicants for the Construction Engineering Technology program must hold an associate degree in Construction Engineering Technology from an accredited program or provide evidence of an equivalent academic background. Applicants must have a minimum cumulative grade-point average of 2.0 out of a possible 4.0.

Applicants with an associate degree in a discipline other than Construction Engineering Technology will be required to complete a specific formal set of courses as specified at the time of admission. Final approval for admission is based upon recommendations from the Director of the Construction Engineering Technology Program.

Cooperative Work Study Requirement

The required cooperative work study experience of the Construction Engineering Technology program may begin after the student has completed 64 hours of course work in the Construction Engineering Technology program. This requirement may be satisfied by one of the following options:

1. One semester¹ of cooperative education experience, with appropriate course registration.
2. 120 service hours with a credible construction organization.²
3. One calendar year of full-time, continuous, and ongoing employment in a construction management related position.²

¹ Summer I and II combined count as one semester for the co-op.

² A portfolio of work must be submitted to and approved by the Program Director. The portfolio will include but not be limited to a description of the various work, evidence of work such as supervisor letters

or certificates, and a technical paper, addressing a relevant topic associated with the work.

Requirements for Graduation

- Compliance with the requirements of the general education program as outlined in this Bulletin.
- Completion of the requirements for the associate degree in Construction Engineering Technology (<https://bulletin.uakron.edu/undergraduate/colleges-programs/engineering-polymer-science/civil-engineering/construction-engineering-technology-aas/>) at The University of Akron or an approved associate degree program
- Successful completion of a minimum of 120 credits in the B.S. in Construction Engineering Technology Program including the associate degree program, the general education courses, co-op/work study, and Year 3 and Year 4 course requirements.

The following information has official approval of **The Department of Civil Engineering** and **The College of Engineering and Polymer Science**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Progress Report (Stellic) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your academic advisors.

Three year accelerated option: for first time students who have earned credits for at least the first year of courses. Credits can be earned through qualifying scores on appropriate Advanced Placement (AP) exams or through [College Credit Plus Program \(CCP\)](#) courses. Credits for qualifying AP scores or CCP courses are determined by the appropriate academic department. Departments may assign varied course credit, depending on the student's score on an AP exam or [grade in a CCP](#) course. Students may also receive credit by examination or via placement tests, where appropriate.

Requirements Summary

Code	Title	Hours
AAS in Construction Engineering Technology		
	General Education Requirements (https://bulletin.uakron.edu/undergraduate/general-education/) [*]	23
	Program-Specific General Education Requirements	14
	Mathematics	6
	Accounting	3
	Construction Engineering Technology Core I	33
	Construction Engineering Technology Core II	32
	Cooperative Education	0
	Technical Electives	9
Total Hours		120

^{*} Several courses required for the major also satisfy General Education requirements. The University minimum of 36 credits are required for

General Education and credit for these courses will apply to multiple requirements.

General Education Courses

Code	Title	Hours
Students pursuing a bachelor's degree must complete the following General Education coursework. Diversity courses may also fulfill major or Breadth of Knowledge requirements. Integrated and Applied Learning courses may also fulfill requirements in the major.		
Academic Foundations		12
	<i>Mathematics, Statistics and Logic: 3 credit hours</i>	
	<i>Speaking: 3 credit hours</i>	
	<i>Writing: 6 credit hours</i>	
Breadth of Knowledge		22
	<i>Arts/Humanities: 9 credit hours</i>	
	<i>Natural Sciences: 7 credit hours</i>	
	<i>Social Sciences: 6 credit hours</i>	
Diversity		
	Domestic Diversity	
	Global Diversity	
Integrated and Applied Learning		2
	<i>Select one class from one of the following subcategories:</i>	
	Complex Issues Facing Society	
	Capstone	
	<i>Review the General Education Requirements page for detailed course listings.</i>	
Total Hours		36

The first two years are completed as an AAS degree in Construction Engineering Technology (61 credits) or similar associate degree program. A minimum of 120 credits are required for this degree. All UA General Education requirements for bachelor's degrees must be met.

Program-Specific General Education Requirements

These courses are all completed as a part of the AAS in Construction Engineering Technology.

Code	Title	Hours
ENGL 222	Technical Report Writing ³	3
MATH 154	Technical Algebra and Trigonometry 2 ⁴	3
PHYS 261	College Physics I ⁵	4
PHYS 262	College Physics II ⁵	4
Total Hours		14

³ This course is required for the AAS in Construction Engineering Technology, and also meets the Writing Second Course Requirement for General Education for bachelor's degree programs. Students who place directly in a second writing course and use ENGL 222 Technical Report Writing to meet their Writing Second Course Requirement will need an additional three credits of coursework.

⁴ This course meets the Mathematics, Statistics, and Logic Requirement for General Education for bachelor's degree programs.

⁵ Together, PHYS 261 College Physics I and PHYS 262 College Physics II meet the seven-credit Natural Science including one lab Requirement for General Education for bachelor's degree programs.

Mathematics

Code	Title	Hours
MATH 255	Technical Calculus I ⁶	3
MATH 356	Technical Calculus II	3
Total Hours		6

⁶ This course is part of the AAS in Construction Engineering Technology.

Accounting

Code	Title	Hours
ACCT 201	Accounting Principles I	3
or COMM 211	Essentials of Financial Accounting	
Total Hours		3

Construction Engineering Technology Core I

These courses are all completed as a part of the AAS in Construction Engineering Technology.

Code	Title	Hours
COET 125	Statics	3
COET 129	Professional Topics in Construction	3
COET 131	Building Construction	2
COET 150	Plan Reading	3
COET 225	Strength of Materials	3
COET 226	Construction Supervision	3
COET 234	Elements of Structures	3
COET 235	Construction Inspection	3
COET 237	Materials Testing I	2
COET 238	Materials Testing II	2
COET 245	Construction Estimating	3
COET 246	Site Engineering	3
or SURV 101	Basic Surveying	
Total Hours		33

Construction Engineering Technology Core II

Code	Title	Hours
COET 352	Field Management & Scheduling	2
COET 354	Foundation Construction Methods	3
COET 356	Safety in Construction	3
COET 358	Advanced Estimating	3
COET 371	Green & Sustainable Building Practices	3
COET 421	Risk Management and Contract Strategies	3
COET 462	Mechanical Service Systems	3
COET 468	Construction Management	3
COET 469	Contracts and Specifications	3

COET 463	Electrical Service Systems	3
COET 466	Hydraulics	3
Total Hours		32

Cooperative Education

Code	Title	Hours
GNEN 300	Cooperative Education Work Period ⁷	0
or GNEN 301	Cooperative Education Work Period I	

⁷ This is a required 15-week full-time cooperative education work term in the construction industry.

Technical Electives

Code	Title	Hours
Select nine credits from the following:		9
<i>Note: Three of the credits are part of the AAS in Construction Engineering Technology (towards the AAS Technical Elective requirement). Students need six credits beyond the AAS.</i>		
COET 239	Construction Geomechanics	
COET 254	Building Codes	
COET 310	Residential Building Construction	
COET 361	Construction Formwork	
COET 422	Leveraging AI and Construction Technologies	
COET 442	Lean Building Science	
COET 453	Legal Aspects of Construction	
COET 489	Special Topics in Construction	
COET 490	Workshop in Construction	
COET 497	Honors Project	
COET 498	Independent Study in Construction	
Total Hours		9

Recommended Sequence

The first two years are completed as an AAS degree in Construction Engineering Technology (61 credits) or similar associate degree program. A minimum of 120 credits are required for this degree. All UA General Education requirements for bachelor's degrees must be met.

3rd Year

Fall Semester		Hours
MATH 356	Technical Calculus II	3
COET 352	Field Management & Scheduling ¹	2
COET 354	Foundation Construction Methods ¹	3
	Social Science Requirement ⁴	3
	Humanities Requirement	3
Hours		14

Spring Semester

COET 356	Safety in Construction ²	3
COET 371	Green & Sustainable Building Practices ²	3
ACCT 201	Accounting Principles I	3
	Arts Requirement	3
	Technical Elective ³	3
Hours		15

Summer Semester

GNEN 300 or GNEN 301	Cooperative Education Work Period ⁶ or Cooperative Education Work Period I	0
Hours		0

4th Year**Fall Semester**

COET 358	Advanced Estimating ¹	3
COET 462	Mechanical Service Systems ¹	3
COET 469	Contracts and Specifications ¹	3
	Technical Elective ³	3
	Arts/Humanities Requirement	3
Hours		15

Spring Semester

COET 463	Electrical Service Systems	3
COET 421	Risk Management and Contract Strategies	3
COET 466	Hydraulics ²	3
COET 468	Construction Management ²	3
	Social Science Requirement ⁵	3
Hours		15
Total Hours		59

¹ Typically Fall only.² Typically Spring only.³ Technical Electives are subject to enrollment demands and classroom schedules.⁴ Students should choose a course that also meets the requirements for the Domestic Diversity requirement.⁵ Students should choose a course that also meets the requirements for the Global Diversity requirement.⁶ This is a required 15-week, full-time work term in the construction industry.

Policy Alert: By the end of your first 48 credit hours attempted, you must have completed your *required* General Education English, Mathematics, Statistics, and Logic, and Speaking requirements.