B.S. in Engineering Technology, Construction Engineering Technology

The construction industry is an interesting and dynamic career that combines the elements of technical knowledge, management skills and creativity to breathe life into a set of plans, turning them into a real structure. The Construction Manager needs the technical ability to successfully interface with design professionals such as architects and engineers as well as the management skills to work with the talented trades persons that perform the actual work of construction. These skills are acquired in the classroom as well as through internships and co-op education programs and in all phases of the construction industry such as building construction as well as heavy/highway and utility construction. These internship and co-op opportunities are supported by our industry partners.

The students in NJIT's Construction Engineering Technology (CET) program acquire a broad set of technical skills as well as business, communication and management knowledge in order to successfully enter the construction management field. Graduates of our program are successful contractors, construction managers, project executives, project managers and construction inspectors.

This program is accredited by the Engineering Technology Accreditation Commission (ETAC of ABET), http://abet.org (http://abet.org/). Graduates of this program are eligible to sit for the Professional Engineer's examination in New Jersey with the appropriate experience, as determined by the New Jersey Board of Professional Engineers and Land Surveyors. http://www.njconsumeraffairs.gov/pels/). Graduates of the program are also eligible to pursue graduate degrees in civil engineering, management or related areas and students may participate in the BS/MS Program (http://www.njit.edu/graduatestudies/program-options/bs-ms/index.php).

The full four-year curriculum for the program is shown below. Students who wish to enter the program as a transfer student are typically students with an A.A.S. degree in Civil or Construction Engineering Technology and should have completed most or all of the courses, or their equivalents, in the first two years of the program as shown below. In the case of all students, both four-year and transfer, a minimum of 120 credits is required for graduation.

Program Educational Objectives

• Graduates of our program will attain positions of responsibility within the various aspects of the construction industry.

• Graduates of our program will have the necessary skills to avail themselves of the opportunities for lifelong learning and professional development.

Student Outcomes

• An ability to select and apply the knowledge, techniques, skills, and modern tools of their disciplines to broadly-defined engineering technology activities; and,

• An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies; and,

• An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes; and,

• An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives; and,

• An ability to function effectively as a member or leader on a technical team; and,

• An ability to identify, analyze, and solve broadly-defined engineering technology problems; and,

• An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature; and,

• An understanding of the need for and an ability to engage in self-directed continuing professional development; and,

• An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity; and,

• A knowledge of the impact of engineering technology solutions in a societal and global context; and,

• A commitment to quality, timeliness, and continuous improvement; and,

• Producing and utilizing design, construction and operations documents; and,

• Performing economic analyses and cost estimates related to design, construction and maintenance of systems in the construction technical specialties; and,

• An ability to select appropriate construction materials and practices; and,

• An ability to apply principles of construction law and ethics; and,

• An ability to apply basic technical concepts to the solution of construction problems involving hydraulics and hydrology, geotechnics, structures, construction scheduling and management and construction safety, and

• An ability to perform standard analysis and design in at least one recognized technical specialty within construction engineering technology that is appropriate to the goals of the program.

(120 credits minimum)

First Year		
1st Semester		**Credits**
CS 106	Roadmap to Computing for Engineers	3
MATH 138	General Calculus I	3
PHYS 102	General Physics	3
PHYS 102A	General Physics Lab	1
ENGL 101	English Composition: Introduction to Academic Writing	3
MET 103	Engineering Graphics and Intro. to CAD	2
ET 101	Introduction to Engineering Technology	0
FYS SEM	First-Year Student Seminar	0
	Term Credits	**15**
2nd Semester		
MATH 238	General Calculus II	3
PHYS 103	General Physics	3
PHYS 103A	General Physics Lab	1
ENGL 102	English Composition: Introduction to Writing for Research	3
MET 105	Applied Computer Aided Design	2
ACCT 117	Principles Of Fin Accountng	3
	Term Credits	**15**
Second Year		
1st Semester		
MET 235	Statics for Technology	3
ECET 201	Circuits I	3
MET 304	Applied Fluid Mechanics	3
SET 200	Introduction To Geomatics	3
SET 200A	Introduction to Geomatics Lab	1
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
	Term Credits	**16**
2nd Semester		
MET 237	Strength of Materials for Technology	3
CET 233	Structural Analysis in Construction	3
ECON 201	Economics	3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
Technical or Management Elective		3
	Term Credits	**15**
Third Year		
1st Semester		
CET 313	Construction Procedures I	3
CET 317	Construction Computing	3
CET 322	Construction Codes and Regulations	3
MET 303	Applied Thermodynamics	3

MATH 305	Statistics for Technology	3
	Term Credits	**15**
2nd Semester		
CET 314	Construction Procedures II	3
CET 323	Construction Safety	3
CET 331	Structural Systems	3
CET 341	Soils and Earthwork	3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**15**
Fourth Year		
1st Semester		
CET 411	Cost Estimating	3
CET 415	Construction Project Management	3
CET 421	Construction Contracts	3
MNET 414	Industrial Cost Analysis	3
CET 431	Construction Testing	3
	Term Credits	**15**
2nd Semester		
CET 413	Environmental Science	3
CET 416	Senior Construction Project	2
CET 435	Design of Temporary Structures	3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
MGMT 390	Principles of Business	3
	Term Credits	**14**
	Total Credits	**120**

See the **General Education Requirements** "Refer to the General Education Requirements for specific information for GER courses"