

Middlesex County College

Engineering Technologies Department

Civil Engineering Technology Program

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Educational Objectives: Graduates are prepared to:

1. have a sound background in the principles of science, mathematics and technology that will prepare them to continue their education in an upper division program or to be productive and competent technical employees;
2. communicate effectively using oral, written and graphical techniques;
3. be competent using the tools and equipment found in a typical technical environment;
4. demonstrate an awareness of professional ethics and social and environmental concerns in their educational and work environment;
5. work effectively in teams to solve engineering problems;
6. analyze, design, build, test, operate and maintain system components using codes such as the ACI, AISC and ASTM.

Student Outcomes – Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge and behaviors that students attain as they progress through the program.

Students Outcomes: Graduates will have a/an:

- a. ability to apply the knowledge, techniques, skills and modern tools of the discipline to narrowly defined engineering technology activities;
- b. ability to apply a knowledge of mathematics, science, engineering and technology to engineering technology problems that require limited application of principles but extensive practical knowledge;
- c. ability to conduct standard tests and measurements, and to conduct, analyze and interpret experiments;
- d. ability to function effectively as a member of a technical team;
- e. ability to identify, analyze and solve narrowly defined engineering technology problems;
- f. ability to apply written, oral and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- g. understanding of the need for and an ability to engage in self-directed continuing professional development;
- h. understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;
- i. a commitment to quality, timelines and continuous improvement;
- j. utilize principles, hardware and software that are appropriate to produce drawings, reports, quantity estimates and other documents related to civil engineering;
- k. conduct standardized field and laboratory tests related to civil engineering;
- l. utilize surveying methods for land measurement and/or construction layout; and
- m. apply fundamental computational methods and elementary analytical techniques in sub-disciplines related to civil engineering.