

STRUCTURAL ENGINEERING TECHNOLOGY, Associate in Science Degree - 4850

Engineering, Trades & Computer Technologies Department

CIP Code: 14.0803

ATTENTION: At this time, the college is not accepting new students into the Structural Engineering Technology program. The courses are not currently being offered while the program is under review by the academic department. Interested students should consider the Engineering AS (#4120) or the Mechanical Engineering Technology AS (#4700) programs.

The Structural Engineering Technology AS degree is designed for students who intend to pursue a career as an Engineering Technician in the field of Structural Engineering. Structural Engineering is a large specialty discipline within the broader engineering fields, particularly civil and mechanical. Structural Engineering involves the design and execution of large structural projects such as dams, docks, and bridges, tunnels, airport terminals, and railroad structures, in addition, to building frames and foundations. Students participate in team-based projects that allow them to complete basic designs for commercial buildings and other structures. These projects cover such specifics as calculating design loads and stresses, drawing free-body diagrams, and sizing component such as beams, columns and joists. It is expected that most graduates with an Associate's degree are then qualified to function as an assistant to the Engineer. Some students may wish to continue their education towards obtaining a four-year Bachelor's degree in Engineering Technology to eventually become an Engineer.

Career Opportunities

Graduates of this program are prepared for employment as technicians, designers, specification writers, drafters, reviewers of shop and structural drawings, construction inspectors, and computer-aided drafting and design (CADD) operators within the Structural Engineering field.

Competency Profile

This curriculum is designed to prepare students to:

- Assist in the design and development of structures using computer-aided design and drafting (CADD) equipment
- Prepare, interpret, and read technical drawings
- Conceptualize ideas and communicate them to other project team members
- Analyze static structures using trigonometry
- Perform simple member designs
- Interpret and apply the appropriate codes, regulations, and standards that govern the practice of structural engineering
- Collect and interpret engineering data
- Prepare reports, specifications, and manuals under the direction of scientists and engineers
- Write and speak effectively
- Identify the student's career path
- Identify global and ethical engineering issues

PROGRAM REQUIREMENTS (TOTAL CREDITS = 61)

| General Education | | Major Requirements | | Other Required Courses | |
|--|----|---|---|------------------------|----|
| ENGL 101 English Composition I | 3 | CAD 154 Computer Aided Drafting | 3 | Program Electives* | 12 |
| ENGL 104 Technical Writing | 3 | CVTE 103 Surveying I | 3 | | |
| COMM 101 Effective Speaking | 3 | CVTE 208 Strength of Materials | 3 | | |
| Humanities & Arts Core Elective | 3 | GTEC 104 Engineering Materials & Processes | 3 | | |
| Mathematics Core Elective - MATH 103 | 3 | GTEC 201 Statics | 3 | | |
| Mathematics or Science Core Elective - MATH 104 | 3 | GTEC 208 Strength of Materials Lab | 1 | | |
| Science w/ a Laboratory Core Elective | 3 | SET 201 Intro Structural Engineering Technology | 3 | | |
| Social & Behavioral Science Core Elective | 3 | SET 202 Structural Design Fundamentals & Concepts | 3 | | |
| First-Year Seminar Elective - ENGR 102 | 2 | | | | 22 |
| Wellness Elective | 1 | | | | |
| | 27 | | | | |

*Select program electives from the following courses: ACCT 101; ARCH 253; BCT 215; CAD 115, 164; CPS 113, 115, 135; CHEM 101; CVTE 120; ELEC 100, 101, 108, 125, 126; ENGR 291; IA 205, 208; MDRF 101, 103; MATH 119, 121, 202; MGMT 201; MDES 201, 204, 206; PHYS 201, 202.

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part-time students can complete this program by taking one or more courses each semester.

| Fall Semester I | | Spring Semester I | | Summer I | | Fall Semester II | | Spring Semester II | |
|-------------------|---|-------------------------------|---|----------|---|--|---|--------------------------------|---|
| CAD 154 | 3 | COMM 101 | 3 | CVTE 103 | 3 | CVTE 208 | 3 | GTEC 208 | 1 |
| ENGL 101 | 3 | ENGL 104 | 3 | | | Program Electives* | 6 | Program Electives* | 6 |
| ENGR 102 | 2 | GTEC 104 | 3 | | | SET 201 | 3 | SET 202 | 3 |
| MATH 103 | 3 | GTEC 201 | 3 | | | Social/Behavioral Science Core Elective | 3 | Science w/ a Lab Core Elective | 3 |
| MATH 104 | 3 | Humanities/Arts Core Elective | 3 | | | | | | |
| Wellness Elective | 1 | | | | | | | | |