

STRUCTURAL ENGINEERING TECHNOLOGY, Associate in Science Degree - 4850

Engineering & Technology Department

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. The complete program is only available at the Harrisburg Campus.

Career or Transfer 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	CAD 154 Computer Aided Drafting	Program Electives*
ENGL 104 Technical Writing	CVTE 103 Surveying I	12
COMM 101 Effective Speaking	CVTE 208 Strength of Materials	
Humanities & Arts Elective	GTEC 104 Engineering Materials & Processes	
Mathematics Elective - MATH 103	GTEC 201 Statics	
Mathematics or Science Elective - MATH 104	GTEC 208 Strength of Materials Lab	
Science w/ a Laboratory Elective	SET 201 Intro Structural Engineering Technology	
Social & Behavioral Science Elective	SET 202 Structural Design Fundamentals & Concepts	
First-Year Seminar Elective - ENGR 102		22
Wellness		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 II	Summer	Fall Semester III	Spring Semester IV
CAD 154	COMM 101	CVTE 103	CVTE 208	GTEC 208
ENGL 101	ENGL 104		Program Electives*	Program Electives*
ENGR 102	GTEC 104		SET 201	SET 202
MATH 103	GTEC 201		Social/Behavioral Science Elective	Science w/ a Lab Elective
MATH 104	Humanities/Arts Elective			
Wellness				

SUGGESTED ADDITIONAL SEQUENCE FOR STUDENTS TRANSFERRING TO A BSET PROGRAM

Fall Semester III for transfer students		Spring Semester III for transfer students	
CHEM 101 (Inorganic Chemistry)	4	Transfer Electives*	6
Transfer Elective*	3	MATH 121 (Calculus I)	4
MATH 119 (Pre-Calculus, 12 Week Session)	4	PHYS 202 (General Physics II)	4
PHYS 201 (General Physics I)	4	Wellness (PSU Only)	<u>1</u>
Wellness (PSU Only)	<u>1</u>	Total Credits	15
Total Credits	16		

**Students are to select courses that are suited for their intended transfer institution.*