

## ENGINEERING, Associate in Science Degree - 4120

Science Department

CIP Code: 14.0101

The Engineering AS program prepares students to continue their study towards a baccalaureate degree in engineering at a four-year institution. This curriculum places emphasis on mathematics and its application in the sciences; only students of high academic potential who have demonstrated excellence in mathematics should consider this major. Since the requirements of senior institutions vary widely, it is essential to choose an intended transfer institution as soon as possible and carefully follow the program described in that college's catalog. This program may be completed at the Harrisburg and Lancaster campuses through on-campus/in-person instruction. Also, this program may be completed at the York Campus through various modalities (e.g., hybrid, synchronous remote instruction and asynchronous instruction) in addition to on-campus/in-person instruction.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. Engineers are employed in research and development, design, manufacturing, consulting, teaching, and administration in such areas as aerospace, agriculture, ceramics, chemicals, electrical and mechanical devices, metallurgy, and mining.

### Competency Profile

This curriculum is designed to prepare students to:

- Solve static and dynamic problems using calculus
- Identify ethical engineering situations and make informed judgements
- Function effectively on a team whose members together create a collaborative and inclusive environment
- Effectively operate a solid modeling system and generate technical drawings

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I	3	CAD 154 Computer-Aided Drafting & Design	3	Transfer Electives*	9
ENGL 104 Technical Writing	3	ENGR 213 Statics	3		
COMM 101 Effective Speaking	3	ENGR 214 Dynamics	3		
Humanities & Arts Core Elective	3	MATH 221 Calculus III (or)	4		
Mathematics Core Elective - <b>MATH 121</b>	4	MATH 222 Differential Equations	(4)		
Mathematics or Science Core Elective - <b>MATH 122</b>	4	PHYS 211 Physics for Engineers & Scientists I	4		
Science w/ a Laboratory Core Elective - <b>CHEM 101</b>	4	PHYS 212 Physics for Engineers & Scientists II	4		
Social & Behavioral Science Core Elective	3		21		
First-Year Seminar Elective - <b>ENGR 102</b>	2				
Wellness Elective	1				
	30				

\*Transfer electives should exclude the following: CHEM 100; MATH 103, 104, 110, 111, 116, 119; PHSC 113, 114; PHYS 105, 151, 152, 153, 161, 201 and 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		Fall Semester II		Spring Semester II	
CAD 154	3	COMM 101	3	ENGR 213	3	ENGR 214	3
CHEM 101	4	ENGL 104	3	MATH 221 or 222	4	Humanities/Arts Core Elective	3
ENGL 101	3	MATH 122	4	PHYS 211	4	PHYS 212	4
ENGR 102	2	Transfer Elective*	3	Transfer Elective*	3	Transfer Elective*	3
MATH 121	4	Social/Behavioral Science Core Elective	3	Wellness Elective	1		