

Pre-Engineering, A.S.

Degree Offered

- Associate of Science

Nature of the Program

An Associate of Science in Pre-Engineering prepares the student for a variety of engineering fields, including civil, electrical, mechanical, aerospace, and computer engineering. The 60 credit hours in the Pre-Engineering program contains 14 credits of Fundamentals of Engineering coursework, with an additional 8 credits of specialized foundation instruction covering advanced calculus classes and general physics. The remaining 38 credits are used to prepare students for the rigorous mathematics study, while working through the General Education Foundation Curriculum.

Upon completion of the Pre-Engineering Associate of Science degree and the Fundamentals of Engineering Coursework, students can apply for admission to specific engineering degree programs in the Statler College of Engineering. A 2.5 GPA in engineering coded courses is required for admission.

Career Opportunities

Engineering is a diverse discipline offering numerous opportunities. These include:

- artificial intelligence
- cybersecurity
- robotics
- aircraft and spacecraft systems
- pollution control
- new materials development
- coal and mineral mining
- transportation systems
- building construction
- computer development
- electronic systems
- oil/gas production and transportation
- communication and information systems
- noise control and acoustics
- solar energy
- and just about anything else you can think of!

Visit the WVU Statler College Fundamentals of Engineering Program page (<https://fep.statler.wvu.edu/faqs/>) for more information.

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (<http://registrar.wvu.edu/gef/>)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

Code	Title	Hours
General Education Foundations		
F1 - Composition & Rhetoric		3-6
ENGL 101 & ENGL 102 or ENGL 103	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research Accelerated Academic Writing	
F2A/F2B - Science & Technology		4-6
F3 - Math & Quantitative Reasoning		3-4
F4 - Society & Connections		3
F5 - Human Inquiry & the Past		3
F6 - The Arts & Creativity		3
F7 - Global Studies & Diversity		3

F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)	9
Total Hours	31-37

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Curriculum Requirements

Code	Title	Hours
GEF Electives 5, 6, and 7		9
ENGR 191	First-Year Seminar	1
ENGL 101	Introduction to Composition and Rhetoric (GEF 1)	3
ENGL 102	Composition, Rhetoric, and Research (GEF 1)	3
MATH 126	College Algebra (GEF 3)	3
MATH 128	Plane Trigonometry (GEF 8)	3
MATH 155	Calculus 1 (GEF 8)	4
MATH 156	Calculus 2 (GEF 8)	4
CHEM 115 & 115L	Fundamentals of Chemistry 1 and Fundamentals of Chemistry 1 Laboratory (GEF 2)	4
PHYS 111 & 111L	General Physics 1 and General Physics 1 Laboratory	4
ENGR 101	Engineering Problem Solving 1	2
ENGR 102	Engineering Problem Solving 2	3
ECON 201	Principles of Microeconomics (GEF 4)	3
CS 101	Intro to Computer Applications	4
General Electives		10
Total Hours		60

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
ENGL 101 (GEF 1)		3 ENGL 102 (GEF 1)	3
ENGR 191		1 ECON 201 (GEF 4)	3
MATH 126 (GEF 3)		3 MATH 128 (GEF 8)	3
GEF 6		3 GEF 7	3
General Elective		4 CS 101	4
		14	16

Second Year

Fall	Hours	Spring	Hours
MATH 155 (GEF 8)		4 MATH 156 (GEF 8)	4
CHEM 115 & 115L (GEF 2)		4 ENGR 102	3
ENGR 101		2 PHYS 111 & 111L	4
GEF 5		3 General Elective	4
General Elective		2	
		15	15

Total credit hours: 60

Major Learning Outcomes

PRE-ENGINEERING

Upon completion of the program, graduates would be able to:

1. Apply appropriate communication skills
2. Effectively use scientific terminology
3. Explain the connections among major, society, and the environment
4. Describe the relationship between scientific structure and function