

Computer Engineering

Degree Offered

- Associate of Arts

Nature of Program

Computer engineers design, develop, test, manufacture, and maintain complex systems including digital communications systems such as cell phone networks, computer networks such as the Internet, and system-level software such as operating systems and applications software. Computer engineers also embed computers in other machines and systems, build networks to transfer data, and develop ways to make computers, faster, smaller, and more capable. Thus, a computer engineer is part electrical engineer and part computer scientist. It is also important the computer engineers understand both the hardware and software of computers.

The associate degree program provides the foundation to complete a bachelor program in computer engineering at West Virginia University. Students planning to enter a bachelor program at another institution should determine the transfer equivalencies for the courses offered at Potomac State College of WVU and the institution they plan to attend following completion of the associate degree program

Career Opportunities

A bachelor's degree in computer engineering provides many various opportunities because computer systems are embedded in a variety of industries including, automotive, communications, radio and television, consumer electronics, aircraft, robotics, and health-care industries. Computer engineers are also hired by financial services, computer manufacturers, chemical companies, defense contractors, consulting, transportation, manufacturing, and consumer goods.

FACULTY

CHAIR

- Vicki Huffman - Ph.D. Biomedical Science

ASSOCIATE PROFESSOR

- Deepak Mehra - Ph.D. Civil Engineering

PROFESSOR

- Mohammad Saifi - M.S. Electrical Engineering
M.S. Industrial Engineering

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.

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 Skills		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

GEF Elective Requirements (5, 6, 7)		6
ENGR 191	First-Year Seminar	1
ENGL 101 & ENGL 102	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research (GEF 1)	6
MATH 155	Calculus 1 (GEF 3 - minimum grade of C-)	4
MATH 156	Calculus 2 (GEF 8- minimum grade of C-)	4
MATH 251	Multivariable Calculus (minimum grade of C-)	4
MATH 261	Elementary Differential Equations	4
PHYS 111	General Physics (GEF 8)	4
PHYS 112	General Physics (GEF 8)	4
CHEM 115	Fundamentals of Chemistry (GEF 2)	4
ECON 201	Principles of Microeconomics (GEF 4)	3
ENGR 101	Engineering Problem Solving 1	2
ENGR 102	Engineering Problem-Solving 2	3
A minimum GPA of 2.0 is required in the following courses:		
CPE 271	Introduction to Digital Logic Design	3
EE 221 & EE 222	Introduction to Electrical Engineering and Introduction to Electrical Engineering Laboratory	4
EE 223 & EE 224	Electrical Circuits and Electrical Circuits Laboratory	4
Total Hours		60

Suggested Plan of Study

First Year

Fall	Hours Spring	Hours
ENGL 101 (GEF 1)	3 ENGL 102 (GEF 1)	3
MATH 155 (GEF 3)	4 MATH 156 (GEF 8)	4
CHEM 115 (GEF 2)	4 PHYS 111 (GEF 8)	4
ENGR 101	2 ENGR 102	3
ENGR 191	1-3 GEF Elective (GEF 5, 6, 7)	3
		14-16
		17

Second Year

Fall	Hours Spring	Hours
MATH 251	4 MATH 261	4
PHYS 112 (GEF 8)	4 ECON 201 (GEF 4)	3
CPE 271	3 EE 223 & EE 224	4
EE 221 & EE 222	4 GEF Elective (GEF 5, 6, 7)	3
		15
		14

Total credit hours: 60-62

Major Learning Outcomes

COMPUTER ENGINEERING

Upon completion of the associate degree in civil engineering, students will be able to

1. Apply knowledge of mathematics, science, and engineering
2. Explain the basics concepts of electrical engineering and electrical circuits.

3. Use mathematical, chemical and physical concepts to solve engineering-related problems.
4. Transfer into a bachelor degree program in computer engineering.