Biometric Systems, A.S.

Degree Offered

- Associate of Science

Nature of the Program

Biometric systems use specific traits about an organism to identify it. Biometric systems engineers design hardware and software to measure a signature trait of the human body, compare that signature to a database, and then render a decision from a matching process. Biometric systems are being used in positive personal identification in law enforcement, access control, banking and a wide range of business and administrative systems. Biometric systems can also be used in health care for identification of specific human conditions via implantable devices and the automated administration of life-saving medical therapies. Biometric systems can also impact our daily lives with advances in integrated sensors, signal/image processing, computer and mass storage technology that allow inanimate objects to identify, interact with and assist their users.

The associate degree program provides the foundation to complete a bachelor program in biometric systems 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

Biometric system engineers typically work in the IT security industry for businesses and other organizations that design and use data defense methods. Employment can also be found at firms specializing in forestry, forensics, and health care.

FACULTY

CHAIR

- Erin Cunningham - M.S. Biology
  Year @ PSC (2007)

PROFESSORS

- Mohammad Saifi - M.S. Electrical Engineering
  Year @ PSC (1983)
- Joan Vogtman - M.S. Applied Physics
  Year @ PSC (2008)

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	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research	
or ENGL 103	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 Requirements (5)		3
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)	4
MATH 156	Calculus 2 (GEF 8)	4
MATH 251	Multivariable Calculus	4
MATH 261	Elementary Differential Equations	4
BIOL 115 & 115L	Principles of Biology and Principles of Biology Laboratory (GEF 8)	4
PHYS 111 & 111L	General Physics 1 and General Physics 1 Laboratory (GEF 8)	4
PHYS 112 & 112L	General Physics 2 and General Physics 2 Laboratory	4
CHEM 115 & 115L	Fundamentals of Chemistry 1 and Fundamentals of Chemistry 1 Laboratory (GEF 2)	4
ENGR 101	Engineering Problem Solving 1	2
ENGR 102	Engineering Problem-Solving 2	3
Minimum 2.0 GPA is required in all of the following courses:		
CPE 271	Introduction to Digital Logic Design	3
EE 221	Introduction to Electrical Engineering	3
EE 221L	Introduction to Electrical Engineering Laboratory	1
EE 223	Electrical Circuits	3
EE 223L	Electrical Circuits Laboratory	1
Elective		2
Total Hours		60

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
ENGR 101	2	ENGR 102	3
BIOL 115 & 115L (GEF 8)	4	MATH 156 (GEF 8)	4
MATH 155 (GEF 3)	4	PHYS 111 & 111L (GEF 8)	4
CHEM 115 & 115L (GEF 2)	4	ENGL 101 (GEF 1)	3
ENGR 191	1	Elective	2
	15		16

Second Year

Fall	Hours	Spring	Hours
MATH 251	4	MATH 261	4
PHYS 112 & 112L	4	EE 223	3
CPE 271	3	EE 223L	1
EE 221	3	ENGL 102 (GEF 1)	3

EE 221L	1 GEF Elective (GEF 5)	3
	15	14

Total credit hours: 60

Major Learning Outcomes

BIOMETRIC SYSTEMS

Upon completion of the associate degree in biometric systems, students will be able to

1. Apply knowledge of mathematics, science, and engineering
2. Analyze and interpret data
3. Use mathematical, chemical and physical concepts to solve engineering-related problems.
4. Transfer into a bachelor degree program in biometric systems.