

Dean: Dr. Charles MacVean, Ph.D. | Executive Assistant: Denise Culp  
Diehl Hall, Room 101 | (717) 815-1378

<https://www.ycp.edu/academics/kinsley-school-of-engineering-sciences-and-technology/>

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### **Department of Biological Sciences**

Department Chair: Dr. David Singleton | [dsinglet@ycp.edu](mailto:dsinglet@ycp.edu)  
Appell Life Science Building, Room 207 | (717) 815-1280

#### **Majors offered:**

**Biological Sciences, A.S.**

**Biological Sciences, B.S.**

This program provides the student with a solid and rigorous foundation in biology, emphasizing a balance between the molecular/cellular and organismal/population areas of the field. Recognizing the many sub-specialties in biology, the curriculum is also flexible, allowing the student to design an area of emphasis that matches their unique interests and goals. The program has a strong laboratory component, with a combination of biology, chemistry, and physics labs. This comprehensive approach allows graduates to qualify for jobs that require skills in many fields, or successfully apply to a variety of graduate or professional post-college academic programs. Students can tailor their curriculum in the Biology major to achieve specific career goals by choosing a Concentration. The concentrations are Biotechnology, Cell and Molecular Biology, Ecology and Conservation, and Pre-Health Professions (pre-medical, pre-dental, pre-veterinary). Specific elective courses as part of these concentrations in the Biology program will help prepare you for specific career paths.

#### **Minor offered:**

Biology

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### **Department of Chemistry**

Department Chair: Dr. Jessica Fautch | [jfautch@ycp.edu](mailto:jfautch@ycp.edu)  
Campbell Hall, Room 211A | (717) 815-1384

#### **Majors offered:**

**Chemistry, A.S.**

**Chemistry, B.S.**

A degree in Chemistry provides students with knowledge of the workings of the world at a molecular level. From the very first semester, our curriculum emphasizes accurate measurements of physical properties, synthesis of materials, interactions among substances, and the interpretation of macroscopic behavior at the atomic/molecular level. During your time at York, we will provide you with unique and relevant opportunities, including extensive hands-on experience with modern instrumentation and molecular modeling. Since chemical principles form the basis for understanding other fields of science, as a Chemistry student you will be prepared to work with other scientists in solving interdisciplinary problems.

## **Forensic Chemistry, B.S.**

The major in Forensic Chemistry provides its students with knowledge and skills to examine and analyze evidence using a chemist's sophisticated instrumentation and set of analytical techniques. From the very first semester, our curriculum emphasizes accurate measurements of physical properties, synthesis of materials, interactions among substances, and the interpretation of macroscopic behavior at the atomic/molecular level. As you advance through the major, you will integrate the knowledge gained in foundational chemistry courses with the skills and methods of the forensic sciences in order to learn to recognize physical evidence and use modern instrumentation to identify it. Since chemical principles form the basis for understanding other fields of science, as a Forensic Chemistry major, you will be prepared to work with other scientists in solving interdisciplinary problems—in the course of their studies many of our students have interacted with experts in academic, industrial, and government settings. Exposure to our large number of independent research and internship opportunities reinforces this preparation—you can begin to take advantage of these options after your sophomore year. Our majors are fully prepared to enter the job market as professionals in the forensic chemistry field or continue with graduate studies.

**Minor Offered:** Chemistry

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## **Department of Civil and Mechanical Engineering**

Department Chair: Dr. Scott Hamilton | [shamilton@ycp.edu](mailto:shamilton@ycp.edu)

Civil Engineering Center, Room 108E | (717) 815-2253

## **Majors offered:**

### **Civil Engineering, B.S.**

Interested in designing the world's tallest building? How about a graceful and aesthetic suspension bridge or a new sports stadium? Perhaps you want to design a high-speed railway or a water supply system for a developing country or plan and manage the construction of those structures. Are you interested in a sustainable world and green design? If any of these things interest you, then civil engineering might be the major for you. Civil engineers practice in several broad areas including: Structural engineering - focusing on the design of various structures including bridges, buildings, tunnels, canals, and dams; Environmental engineering - concerned with clean air, clean water, and their treatment as well as waste management and prevention, control, and sustainable systems; Transportation engineering - focusing on the design, planning, and construction of transportation systems. Geotechnical engineering - working with the earth, rock, and soil that supports all structures; Hydrology and Hydraulic engineering - dealing with collection, storage, control, transport, regulation, measurement, and use of water; and, Construction engineering - dealing with the designing, planning, construction, and management of infrastructures such as roads, tunnels, bridges, airports, railroads, facilities, buildings, dams, utilities, and other projects. Each student also completes three semesters of paid professional work through a required cooperative education program.

### **Mechanical Engineering, B.S.**

Are you the type of person who wonders how things work, likes to take things apart, and enjoys building things and improving them? Are you inquisitive, a critical thinker, and detail oriented? Did you enjoy and do well in your math and science courses? These are all characteristics of successful mechanical engineering students. As a mechanical engineer, you could work in nearly every sector of our economy including energy systems, advanced materials, biomedical devices (such as prosthetic limbs), environmental products and enhancements, manufacturing and

automation machines and processes, and the solutions to an endless array of technical problems. Upon graduation, you might end up designing machines to make candy bars or the next generation of transportation systems for land, sea, air, and space. If this sounds interesting to you, we encourage you to explore our mechanical engineering program. Each student also completes three semesters of paid professional work through a required cooperative education program.

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## **Department of Electrical and Computer Engineering, and Computer Science**

Department Chair: Dr. Wayne Blanding | [wblandin@ycp.edu](mailto:wblandin@ycp.edu)

Kinsley Engineering Center, Room 117 | (717) 815-6651

### **Majors offered:**

#### **Computer Engineering, B.S.**

If you like to improvise, invent, and build things, and are interested in computer technology and electronic devices, then you should consider the Computer Engineering program at York College. Computer engineers draw upon mathematics, science, and computer science to design computer- or microprocessor-controlled devices, systems, and processes. Examples include many electronic consumer products such as cell phones, personal computers, DVD recorders/players, and satellite radios. A key target area of the York College education is in the area of embedded systems that are customized, stand-alone systems under computer/microprocessor control to perform a specific function. Computer Engineering students participate in a rigorous program of study in science, mathematics, and engineering, as well as the humanities and social sciences, to prepare for a quality lifelong career. Each student also completes three semesters of paid professional work through a required cooperative education program.

#### **Computer Science, B.S.**

Software runs the world: computer scientists create that software. The Bachelors of Science degree in Computer Science (CS) is designed for those pursuing technical careers in computing such as software engineering and web development, as well as students interested in graduate study. Consistent with the mission of the College to help students prepare for post-graduate careers, the CS program blends the practical with the theoretical. All students majoring in Computer Science gain real world experience through a required internship. In their final year of study, students put together the technical, theoretical, and practical aspects of their computer science education through a required senior design project.

#### **Electrical Engineering, B.S.**

If you like to improvise, invent, and build things, and are interested in electronic devices, power, communication, and control systems, then you should consider the Electrical Engineering program at York College. Electrical engineers draw upon mathematics and science to design devices, systems, and processes in every industrial and technological sector including: power generation, transmission, and conversion; industrial controls and manufacturing; robotics; data communications; and a wide variety of electronic consumer products such as cell phones, personal computers, DVD recorders/players, and satellite radios. Electrical engineering students participate in a rigorous program of study in science, mathematics, and engineering, as well as the humanities and social sciences, to prepare for a quality lifelong career. Each student also completes three semesters of paid professional work through a required cooperative education program.

**Minor offered:**    Computer Science

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**Department of Mathematics and Applied Sciences**  
Interim Department Chair: Prof. Joell Raab | [jraab3@ycp.edu](mailto:jraab3@ycp.edu)  
Appell Life Sciences Building, Room 333 | (717) 815-1324

**Majors offered:**

**Mathematics, B.S.**

Mathematicians seek to make sense of the natural world by recognizing patterns. They establish theorems confirming their discoveries using the techniques of logic. As a Mathematics major, you will work closely with your professors to learn problem-solving methods, develop your own conjectures, and mathematically prove your conjectures using logical reasoning. When you graduate with a degree in Mathematics, you will be well prepared either to begin a career in industry, or to continue your mathematical studies in a graduate program.

**Minors offered:**

Actuarial Science  
Mathematics  
Physics

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