Mechatronics I, II, III

(Hampton Campus) Course #8554/8555/8556
Manufacturing Technology Cluster
One Year Program

Build HAMPTON ROADS

College Credit Available

About the program:

Students will learn and build knowledge of mechatronic systems. These systems are comprised of mechanical, electrical, and software systems, and typically include sensors feeding data to a computer/controller, which determines how to energize a motor/actuator. Mechatronics systems form the foundation of robotics, automation, and advanced manufacturing (such as 3D printing). Mechanical, electrical, and pneumatic/hydraulic systems are explored as well as relevant computer technologies. Students will apply principles related to pneumatic, electro-pneumatic, and hydraulic control circuits as well as basic digital logic and programmable logic controllers in a complex mechatronic system. Students may earn dual enrollment credits (for free), and a College Certificate of Studies with VPCC credits transfer into the VPCC Mechanical Engineering Technology Degree (956-02).

Certifications:

- FESTO Industry 4.0 Certifications
- Siemens Mechatronics Systems Certification

Dual Enrollment Requirements:

- According to Virginia Peninsula Community College, the student must possess a minimum GPA of 3.0 to show English & and Math proficiency in order to receive dual enrollment credit.
- Completion of Algebra II with a grade of "C" or better **or** completed Algebra I and Geometry with a "B" or better

Topics of study:

- Engineering Design (MEC 100)
- Sensors & Actuators (ETR 140)
- Digital Electronics (ETR 168)
- Robotics Programming (ETR 177)
- Mechanical Drives (MEC 155)
- Pneumatics & Hydraulics (MEC 165)
- Programmable Logic Controls (ELE 233)
- Mechatronic Systems (IND 243)

Career Pathways:

- Electrical Engineering
- Instrumentation Technician
- Industrial Engineer or Technician
- Mechanical Engineer or Technician