

Robotics Certificate Program



What is Robotics?

The application of robotics is a "multi-craft" activity in that it is the blending of multiple disciplines including computer science, computer engineering, mechanics, and electrical engineering. A roboticist engages in the design, construction, and programming of robotic systems. The Robotics Certificate program at Columbus State is an introduction to mechatronic systems with special emphasis on autonomous mobile robots, i.e., robots with free-ranging mobility under their own control.

Mechatronics is an interdisciplinary field that combines computer, electrical and mechanical engineering to create control devices for hybrid systems. The study of robotics is founded on the principles of Mechatronics and Science, Technology, Engineering and Math (STEM).

CSU's Robotics Certificate program provides students with the basic skills to compete for jobs as technicians in the field of Electro-Mechanical Engineering and complements 4-year degrees in Engineering, Computer Science, and the Physical Sciences, including astronomy, chemistry, geology, and environmental science among others. According to the [U.S. Bureau of Labor Statistics](#), in 2020 over 13,400 workers were employed in the field of Electro-Mechanical Engineering, with median earnings of more than \$59,800 per year.

The Robotics Certificate

The Robotics certificate is a seven course, twenty-one credit program open to all majors and to non-degree students. This is a stand-alone certificate that does not require a student to be enrolled in a degree program at CSU. The program is designed to instruct students on the design, construction and programming of robotic and automated systems.

Obtaining a certificate in Robotics prepares students for work in robotics and exposes them to several facets of the field. The program allows for a focus on the hardware and modeling or the algorithms, all of which are the integral components of robotics.

Students pursuing the Robotics Certificate take [21 hours of Engineering, Computer Science, and Physics coursework](#). In many cases, courses counting towards the Robotics Certificate also count towards 2 and 4-year degree programs at CSU, including [Engineering Studies, Astrophysics and Planetary Geology, Environmental Science, Geology, Earth and Space Sciences Secondary Education, Cybersecurity, Games Programming, and Software Systems](#). For detailed course requirements, see [CSU's current catalog](#). For more information on the Robotics Certificate program, contact [Dr. Lavi Zamstein](#) by phone at [706-507-8089](#) or by email at zamstein_lavi@columbusstate.edu.