ROBOTICS AND AUTOMATION UNDERGRADUATE ACADEMIC CERTIFICATE

Robotic automation has spread through all different types of manufacturing, food processing, and agriculture. The key to companies remaining competitive is to continue to increase productivity through automation using robotics. This certificate produces students that have a deep understanding of the Robotics stack from the lower level motors and controllers, through PLC controllers and into higher level cognitive processes including using modern AI techniques.

All required coursework must be completed with a grade of C or better (O-10-a (https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/)).

Required Coursework:

Code	Title	Hours
CS 4553	Robotic Systems Engineering I	3
CS 4554	Robotic Systems Engineering II	3
Any 3 courses of the following:		9
CS 4440	Supervisory Control and Critical Infrastructure Systems	
CS 4502	Real-Time Operating Systems	
CS 4543	Embedded Systems	
CS 4556	PLC Programming for Automation	
CS 4701	Artificial Intelligence	
CS 4712	Machine Learning	
CS 4715	Deep Learning	
CS 4731	Evolutionary Computation	
CS 4771	Python for Machine Learning	
CS 4885	Machine Vision	
ME 4540	Assistive Technologies for Physical Impairment	
ME 4640	Robotics Kinematic and Kinetic Analysis	
Total Hours		**15**

Courses to total 15 credits for this certificate

Students should consult with their academic advisor regarding this certificate.

1. Graduates will be able to apply modern software design and engineering principles and practices to the hardware, software, safety and environmental aspects of a robotic system.

2. Graduates will be able to analyze, evaluate and design parts of the robotic stack and will be able to communicate with other disciplines working on robotic systems.