

Transformational Labs for Mechatronics Engineering Education

Challenge

The global engineering academic community is witnessing an explosive growth in the number of programs and courses in mechatronics. By its nature, a mechatronics program relies heavily on hands-on experiences and labs. Microprocessor programming, sensor integration, or hobby robotics are all very typical kinds of labs that many institutions have introduced. A common lab sequence sees students programming hobby microprocessor boards and then connecting them to simple sensors to operate small motors, lights or other components. Because of the use of hobby-grade components, often the essential learning challenge becomes the programming as opposed to the system, in addition to the programming. As such, in a truly transformational education, student must be provided with high-fidelity platforms that support a more realistic or complex applications.

Program

The goal of this hands-on workshop is to introduce Quanser's unique mechatronic lab solutions and how they can take students from motivating first steps through to fully integrated systems, and prepares them to take on high-fidelity mechatronic application and design challenges. The workshop will offer participants a chance to explore how the lab solutions effectively provide students the skills and insight through appropriately constrained, guided, and engaging exercises well-connected to the theoretical foundations. Workshop attendees will gain hands-on experience with the following mechatronic lab products:

- NI ELVIS application boards: Mechatronic Sensors, Mechatronic Actuators, Mechatronic Interfacing , Mechatronic Systems
- QBot 2 myRIO

Key take-aways:

- ✓ How to transform students from motivating first steps in mechatronics through to the building of skills proficiency
- ✓ Hands-on experience with Quanser's high-fidelity mechatronics teaching platform
- ✓ Network with peers

