EECS Department Laboratories

"The University of Wyoming's Department of Electrical Engineering and Computer Science is well known for its strong laboratory program. The laboratory experience is the heart of a good engineering education, and the facilities in EECS at the University of Wyoming are exceptional.

The Electrical Engineering and Computer Science Department's curriculum is very lab-intensive. Labs are updated, remodeled, and maintained continuously to keep up with the rapidly changing field of electrical and computer engineering, as well as the field of computer science. Teamwork between course instructors and staff ensures that necessary parts and test equipment are available, and laboratory teaching assistants, typically graduate students, ensure the equipment is functional and that students understand how to operate the equipment properly.

Within the department, a variety of equipment is available for faculty and student use, including an open graduate student lab, a student lab, and a teaching lab, running Microsoft Windows and Red Hat Linux Operating Systems. In addition, the computer classroom with removable hard drives that enable multiple operating systems to be run gives students' exposure to many platforms. The department also maintains a cluster of dual-processor Linux servers.

Students are also encouraged to work with faculty members on research projects, these projects typically use equipment dedicated to research activities."

The following is a list of the department laboratories and some of the updates that have been made recently.

Industrial Automation Lab (EN 5064)

This laboratory supports our Industrial Automation educational activities. This laboratory was developed in direct response to demand from our advisory council in support of industries throughout the State.

Senior Design (EN 5061)

This lab supports our Senior Design sequence of courses. Seniors have the freedom to choose projects from the different electrical and computer engineering disciplines, and this lab is well-equipped to support the different types of designs. This includes a wide variety of test equipment, prototyping stations, computer simulation and software development systems, and development systems for microcontroller programming.

Electronics II (EN 5058)

The Electronics II lab was completely renovated in the summer of 2021. This lab supports the sequence of two required electronics courses, as well as several elective courses. In the summer of 2023, new computers were installed at each laboratory bench.

Electronics I (EN 5054)

This lab supports several classes, including Bio-Instrumentation, Communication Theory, Image Processing, and Digital Signal Processing. The majority of the equipment on the benches in this lab was replaced approximately five years ago and remains very functional for the courses it supports. In the summer of 2023, new computers were installed at each laboratory bench.

Circuits (EN 5049)

The Basic Circuits lab has been significantly upgraded. Six new laboratory benches have been installed, with updated electrical connections. In addition, lab equipment, including oscilloscopes, function generators, frequency counters, and multimeters, has been replaced with updated models.

Edge ML Research Lab (EN 5041)

The lab hosts several Edge Machine Learning (ML) research activities funded by the Wyoming Department of Transportation (WYDOT). The research activities encompass the development of Machine Learning models executing on Edge devices to aid WYDOT operators in implementing Intelligent Highway approaches on Wyoming roads. In this lab, the development of Edge ML devices for the autonomous determination of no-pass zones on two-lane roads and intersection no-parking zones, an autonomous collision avoidance system for snowplows, and a black ice detection system is underway.

Student Computer Laboratory (EN 5038)

In the summer of 2023, sixteen new computers with dual monitors were purchased for this lab. The dual monitors have been very popular with the students and make working on many different types of reports and designs much easier. New chairs, carpet, lighting, and electrical, have all added to the environment of the lab. An overhead projector has also been installed to allow class demonstrations.

Auxiliary Student Computer Laboratory (EN 5031)

This lab has been fully remodeled, including new computers, tables, chairs, carpet, and lighting. The number of workstations has been increased from 4 to 6, and dual-wide, flat-panel monitors have been installed. This has eased the congestion in the main lab and increased the total number of workstations available in the lab area from 16 to 23.

Digital Design and Microprocessors (EN 5030)

This lab supports our Digital and Advanced Digital design course, as well as a sequence of Microprocessor and Microcontroller courses. New lab computers were installed in the summer of 2023 at each bench, and all the labs have been redeveloped for the latest developer's tools. New development boards for the Microprocessors class, the Digital Systems class, and the Advanced Digital course have all been integrated into the labs. A new network device programmer has also been integrated into many of the labs.

HPC & ML Education Lab (EN 5022)

This lab features twenty-five high-end GPU workstations, purchased with research and educational grants, to support faculty in teaching courses on High Performance Computing (HPC), Machine Learning (ML), Computer Vision, and Image Processing. High-end GPU workstations are necessary for teaching cutting-edge courses that utilize GPUs for Computational Purposes.

Computer Science General Lab (EN 4086)

It has both MS Windows and Linux. The Windows boxes have the same software as the computers in ENG 4059. This lab contains CD burners; however, duplication of copyrighted material is strictly prohibited.
It is open Monday through Friday, 8 am and 5 pm

Computer Science Teaching Lab (EN 4059)

Purpose: Teach Computer Science classes.
When there are no classes scheduled in this lab, it is available for general use during the day (between 8 am and 5 pm). Check the door for a list of scheduled courses and opening times.