

Course Objectives

- Be introduced to the basics of electronic components, circuits, coding, and environmental sensors
- Develop core skills in building interactive electronic devices with various environmental sensors using open source hardware prototyping platforms
- Gain experience of building environmental sensors, logging sensor measurements, and analyzing collected data
- Gain practical experience of making a prototype device from creative idea to solve real-world problems by combining multiple sensors
- Understand how designed spaces and natural landscapes affect various environmental conditions and human comforts with sensors

Textbook

- Environmental Monitoring with Arduino: Building Simple Devices to Collect Data About the World Around Us by Gertz, Emily, and Patrick Di Justo (2012)

Course Mechanics

This course is online (via the Canvas system) and conducted asynchronously (i.e. students can access class materials and conduct lab exercises anytime with their own schedule). However, the class activities and assignments (video lectures, readings, quizzes, and lab exercises) will be released on a weekly basis (with weekly due dates), so that course workloads are evenly distributed throughout the term. The materials for building environmental sensing devices will be leased with no cost, and students will return them at the end of the term.

In addition to online assistance, the instructor will be available during office hours to work one-on-one with students wishing in-person assistance.