Northeastern University — Seattle Campus

EECE 5698 / CS 7180

NEW COURSE

Special Topic: Robot System Server

What if you could command an entire fleet of robots?

Anyone can learn to make a robot follow a path. But controlling a **whole fleet** of robots — routing medicine deliveries through a hospital, dispatching supply runs to offices across a building — is a different challenge entirely.

That's where the Robot System Server comes in — and as far as we know, no course or textbook anywhere teaches you how to build one.

Until now.

A fleet of mobile robots

What You Will Build

- Extend Open-RMF and RMF-Web (from Open Source Robotics Foundation — the team behind ROS and Gazebo)
- Fleet Management system for deploying multiple robots simultaneously
- Task Assignment engine to dispatch jobs intelligently across the fleet
- Map Server for spatial awareness across the deployment environment
- Tested on simulated TinyRobots — and potentially real TurtleBot 4s

Course Details

- Offered Spring 2027 — cross-listed in ECE & CS
- Team-based project: each team owns a module (Fleet, Task, Map, or Core Infrastructure)
- Heavy Python programming; some C#
- Counts as an elective in EECE, CS, or Robotics programs
- Prerequisite: EECE 5550/5554 or CS 5335 (or Graduate Admission)
- Future goal: control a live TurtleBot 4 fleet in our own buildings!

Instructors: Prof. Xian Li & Prof. Steve Shafer **Time & Location:** TBD

Sign up — and build something not taught anywhere else.