

Robotics Mentorship Practicum (Community-Engaged Learning)

Credits: 1–2 (variable)

Quarter: Autumn / Winter

Format: Hybrid (1 in-class meeting; rest asynchronous + community-based fieldwork)

Designation: Community-Engaged Learning (CELE) -- TBD

Course Description

This community-engaged practicum provides undergraduate students the opportunity to serve as technical mentors with FIRST Washington Robotics teams in underserved Seattle-area middle and high schools. Students apply engineering knowledge while supporting youth in robotics design, programming, and competition preparation.

The course integrates **community engagement, equity-focused education, and reflective practice**, aligned with UW's CELE standards. Students will critically examine the role of engineering in society while developing mentorship, leadership, and communication skills through sustained partnership with community organizations.

Community Engagement Designation (CELE Alignment)

This course meets CELE Community-Engaged Learning requirements through:

- **Reciprocal Partnerships:** Collaboration with FIRST Washington Robotics programs and K–12 schools
- **Community-Identified Need:** Expanding access to STEM mentorship in underserved schools
- **Structured Preparation:** Required training in youth mentoring, equity, and safety
- **Sustained Engagement:** Weekly service (2 - 5 hours/week depending on credits)
- **Critical Reflection:** Ongoing reflection assignments linking service to academic content
- **Assessment & Feedback:** Community partner evaluation of student contributions

Learning Objectives

By the end of the course, students will be able to:

Technical & Applied Learning

- Apply ECE/engineering concepts in real-world mentoring environments

- Support robotics design, fabrication, and programming processes

Communication & Leadership

- Communicate technical concepts to non-expert (K–12) audiences
- Demonstrate leadership, teamwork, and mentorship skills

Community Engagement & Equity

- Analyze inequities in access to STEM education
- Support inclusive and culturally responsive learning environments
- Articulate the societal role of engineers in community contexts

Reflective Practice

- Critically reflect on personal growth and community impact
- Evaluate university–community partnerships

Course Structure & Expectations

Credit Options

Credits	Weekly Hours	Total Hours
1 credit	2-3 hrs/week	~20 - 30 hrs
2 credits	4 -5 hrs/week	~40 - 50 hrs

(Aligned with CELE EDUC 401 expectations: 2.5–10 hours/week)

Required Components

1. **Pre-Service in-person training (Week 1)**
2. **Community-Based Mentorship (Weeks 2–9)**
3. **Reflection Assignments (Ongoing)**
4. **Work Hour Verification (week 10)**
5. **Final Reflection Paper**

Weekly Schedule (10-Week Quarter)

Week 1 – Preparation & Foundations

- First class will be an in-person training with the FIRST Washington team. Students will complete:
 - Mentorship training module (1 hr)
 - UW Youth Program Safety Training
 - FIRST Washington required training (if applicable)
- Readings/Modules:
 - Educational equity in STEM
 - Community-engaged learning principles
- Assignment:
 - **Reflection #1:** Positionality & expectations (1 page)

Week 2 – Community Placement & Orientation

- FIRST Washington volunteer team to assign students to Robotics team
- Meet team director/educator
- Establish schedule and goals
- Assignment:
 - **Community Learning Plan (CLP):** (1 page)
 - Goals for mentoring
 - Anticipated contributions

Weeks 3–4 – Early Engagement

- Begin mentoring (technical + relational support)
- Possible activities:
 - Assist with robot design, programming, or build
 - Observe team dynamics and learning environment
- Assignment:
 - **Reflection #2:** Communication & challenges (1 page)

Weeks 5–6 – Deepening Engagement

- Increased responsibility: Lead small group instruction or troubleshooting as required
- Topics:
 - Inclusive mentoring strategies
 - Youth engagement techniques
- Assignment:
 - **Mid-Quarter Reflection:**
 - Connect experience to equity and access in STEM (1 page)

Weeks 7–8 – Leadership & Impact

- Continue mentorship
- Support competition preparation if applicable
- Gather feedback from team director
- Assignment:
 - **Reflection #3:** Leadership, impact, and community partnership (1 page)

Week 9 – Integration & Wrap-Up

- Final mentoring sessions
- Document contributions and outcomes
- Begin final reflection

Week 10 – Synthesis & Submission

- Submit:
 - **Signed Work Hours Verification Form by team leader**
 - **Final Reflection Paper (2 pages)**

Assignments & Grading

Component	Percentage
Training Completion	10%
Community Learning Plan	10%
Reflection Assignments (3–4 total)	30%
Community Engagement (hours + participation)	40%
Final Reflection / Portfolio	10%

Reflection Requirements (CELE-Compliant)

Reflection assignments must:

- Connect **experience to course concepts**
- Address **equity, access, and community impact**
- Encourage **critical self-awareness and positionality**

Suggested prompts:

- How does your role influence student participation in STEM?
- What systemic barriers affect K–12 robotics participation?
- How does this experience shape your identity as an engineer?

Computer Resources: Students will need a computer with Zoom or Teams in order to engage with teams if they are assigned a remote team. Must be familiar with basic programming (Python and C).

Community Partner Role

Community partners (team directors/educators) will:

- Provide orientation and supervision
- Offer feedback on student performance
- Verify service hours
- Participate in reciprocal partnership practices

Course Policies

Religious Accommodations:

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at [Religious Accommodations Policy \(https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/\)](https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/). Accommodations must be requested within the first two weeks of this course using the [Religious Accommodations Request form \(https://registrar.washington.edu/students/religious-accommodations-request/\)](https://registrar.washington.edu/students/religious-accommodations-request/).

Accommodations & Access:

If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu. DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between the student, instructor, and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

Academic Integrity:

Engineering is a profession demanding a high level of personal honesty, integrity and responsibility. Therefore, it is essential that engineering students, in fulfillment of their academic requirements and in preparation to enter the engineering profession, adhere to the College of Engineering [Statement of Principles](#). Any student in this course suspected of academic misconduct (e.g., cheating, plagiarism, or falsification) will be reported to the College of Engineering Dean's Office and the University's Office of Community Standards and Student Conduct to initiate the [student conduct process](#). *Any student found responsible for academic misconduct may receive a zero for their grade on the impacted academic work (e.g., assignments, project, or exams), and academic consequences, with the possibility of expulsion.*

For any assignment, quiz, or exam that is suspected of academic misconduct, you will be given an "X" grade until after the Instructor has received notification by the Dean's office that the conduct process is complete.

If a student is found responsible for academic misconduct, the student will receive a grade of zero on the assignment, quiz, or exam. If a student is found not responsible, the student will receive a grade based on the standard grading criteria for that assignment, quiz, or exam.

Title IX:

The UW, through [numerous policies](#), prohibits sex- and gender-based violence, harassment, and discrimination and expects students, faculty, and staff to act professionally and respectfully in all work, learning, and research environments.

For support, resources, and reporting options related to sex- and gender-based violence, harassment, or discrimination, refer to the [UW Title IX's website](#), specifically the [Know Your Rights & Resources](#) guide. Should you wish to make the Office of the Title IX Coordinator aware of a Title IX concern, visit the [Make a Title IX Report](#) webpage.

Please know that if you choose to disclose information to me about sex- or gender-based violence, harassment, or discrimination, I will connect you (or the person who experienced the conduct) with resources and individuals who can best provide support and options. You can also access additional resources directly:

- You can request anonymous support, from [SafeCampus](#)
- You can request confidential support, from a [confidential advocate](#).
- If you know you want to submit a formal complaint, contact the [Civil Rights Investigation Office](#).

Please note that some senior leaders and other specified employees have been identified as [Officials Required to Report](#). If an Official Required to Report learns of possible sex- or gender-based violence, harassment, or discrimination they are required to contact the Office of the Title IX Coordinator and report all the details they have in order to ensure that the person who experienced harm is offered support and reporting options.

Relevant Websites

- Title IX: uw.edu/titleix/
- Survivor resources: uw.edu/titleix/survivor-resources/
- Confidential advocates: uw.edu/sexualassault/support/advocacy/
- SafeCampus: uw.edu/safecampus/
- Officials Required to Report: uw.edu/titleix/employee-reporting-expectations/

- Policies: uw.edu/titleix/policies/

Mental health & wellbeing resources :

The following wellbeing & mental health resources are available to you on campus:

- [Let's Talk](#) connects you with support from a counselor without an appointment via drop-in hours.
- [The Counseling Center](#) provides you with personal counseling, assessment, referral, and crisis intervention services (206-543-1240).
- [UW LiveWell](#) provides you with support and case consultation if you are experiencing personal hardship, including academic hardship as the result of extenuating life circumstances (206-543-6085).
- [Husky Health & Well-Being](#) provides you with a central online resource for access to health and wellness services across the campus.
- Academic Advising can help if you are experiencing challenges navigating academic commitments.
- [SafeCampus](#) is here for you to privately discuss mental, emotional, or physical safety and well-being concerns for yourself or others (206-685-SAFE [7233]). SafeCampus's team of caring professionals will provide individualized support, while discussing short- and long-term solutions and connecting you with additional resources when requested.
- [Forefront Suicide Prevention](#) provides information and services to reduce suicide by empowering individuals and communities to take sustainable action, championing systemic change, and restoring hope.
- Crisis Clinic: If you or someone you know experiences a crisis outside of business hours, please call the Crisis Clinic at 206-461-3222 or toll-free at 1-866-427-4747.
- Food and Housing: If you are experiencing food or housing insecurity, you can start with UW Emergency Aid (<https://www.washington.edu/emergencyaid/>) or the UW Food Pantry (<https://www.washington.edu/anyhungryhusky/>).
- Study Centers: <https://www.engr.washington.edu/current/academics/studycenters>

Privacy:

It is possible that some aspects of the course will take place over zoom (e.g. office hours). While students are encouraged to turn on their cameras if they are able, there is no requirement or penalty for keeping

your camera off. For any session that is recorded on Zoom, the recording will capture the presenter's audio, video and computer screen. The recordings will only be accessible to students enrolled in the course to review materials. These recordings will not be shared with or accessible to the public. The University and Zoom have FERPA-compliant agreements in place to protect the security and privacy of UW Zoom accounts. Students who do not wish to be recorded should:

- Choose a Zoom username that does not include any personal identifying information like their name or UW Net ID; and
- Not share their computer audio or video during their Zoom sessions.