

Waterloo ExL Community of Practice: Interdisciplinary-Based Learning

Waterloo faculty members Jennifer Lynes, Associate Professor at the School of Environment, Enterprise, and Development and Wayne Chang, Lecturer at the Conrad School of Entrepreneurship and Business worked together to establish the Interdisciplinary-Based Learning Community of Practice. Interdisciplinary-based learning is a foundational element of experiential learning (EL) where students from different departments or faculties work in teams to solve problems.

This community of practice explored the tremendous opportunity for interdisciplinary courses and projects for student teams to work with external community partners. Interdisciplinary teams bring added value to both student learning and potential outcomes for the community partner. However, there are barriers and challenges to create an interdisciplinary learning environment. This community engaged attendance from across campus to create a venue for 1) engaging all academic disciplines to share their teachings and learnings with peers around the theme of interdisciplinary entrepreneurship and innovation, 2) discussing opportunities for developing new initiatives on campus.

The benefits of interdisciplinary-based learning:

- Develop key transferable skills: teamwork, leadership, collaboration
- Opportunity for hands-on learning, this can be especially beneficial for students who are unable to participate in other types of EL (such as international students)
- Breaking down the barriers between disciplines
- Exciting way to teach, each iteration will be a different experience
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The challenges of interdisciplinary-based learning:

- Setup classroom and space makes teamwork difficult (theatre-style lecture halls)
- Large classes can make teamwork logistically challenging
- Students are siloed by cohort, cannot take courses outside of cohort
 - There is demand for interdisciplinarity in ENG but not enough time/space in the program for students to participate
- Preparing students to branch out, need confidence to work in diverse team setting
- Different evaluation methods across disciplines
- Co-teaching – who gets the credit?

Opportunities to overcome challenges of interdisciplinary-based learning:

- Creates student outcomes that are more portable; in the real world, disciplines are not as relevant, so students can bring skills to a variety of contexts
- Failure can be an outcome – use it to teach resilience
- Engage other groups across campus to build relationships and create a stronger learning environment, for example: SSO will deliver presentations on working effectively in groups

Opportunities at the University of Waterloo for interdisciplinary courses:

- Accounting
- Engineering – across discipline (for example: mechanical and management science)

- Conrad School of Entrepreneurship and Business
- School of Environment, Enterprise, and Development
- Knowledge Integration
- Arts
- Social work
- Aviation

Opportunities at the University of Waterloo for interdisciplinary projects:

- Capstones – could be university wide
- Engineering sprints (art/math sprints)
- Courses with case studies and simulations
- Courses with a prize component, such as the Halt Prize

Explore some “natural fits” to interdisciplinary-based learning:

- Computer science working with arts students on a project with an online component, such as historical archives, or develop a digital community
- Engineering and environment: ENG students have skills and ENV students can identify problems to solve, for example eco-car competition or project on a green supply chain
- Engineering and philosophy/social science: explore the ethics around AI

Examples of existing courses using interdisciplinary-based learning:

- [INTEG 375: Special Topics in Knowledge Integration: Technology Art Studio](#), known as “tech art” is composed of 10 fine arts students and 10 engineering students working in teams on a self-directed project.
- [INTEG210: Making collaboration work](#), is an interdisciplinary course not offered to KI students. Course is designed to teach collaboration and find opportunities for collaboration
- INDEV308: Intro to Social Entrepreneurship
- BET courses