

Technology Commercialization (ENTRE 541)

Winter 2021

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Office hours: Usually Friday afternoon or by arrangement

Description

Technology Commercialization (ENTRE 541) provides graduate students with the opportunity to work with UW scientists and engineers to identify potential applications, markets and business models for breakthrough discoveries invented at UW labs. You can see the list of technologies here (Note: This link will not work until all the confidentiality agreements are in). The course is focused on building student skills with commercial analysis --- requiring research, critical thinking, and informed speculation regarding the risk/reward of commercializing a very early-stage technology.

Each year thousands of innovations are discovered within industry, academia and research institutions yet only a handful ever make the complete path from idea --- to product ----to market --- to satisfactory financial return. ENTRE 541 provides students with the tools, questions and experience of exploring that process firsthand.

The research and analysis conducted by students in this class will be centered on six key questions that represent the key steps in the commercialization process:

- **Technology Evaluation**: Is the technology novel, competitive, and --- if appropriate --- protectable?
- **Possible Solutions/Applications**: Can a compelling solution be created that solves real and substantial user needs?
- **Possible Markets**: What is the nature of the market where we might bring a solution and how might we enter it with highest chance of success?
- **Making money**: Is there a profitable new business or license revenue stream to be had? What business model might be the first to test?
- **Assembling a plan**: What key commercialization milestones must be completed to improve the odds of a successful new business or license?
- **Funding the plan**: How will the plan be funded by private or public sources?

Students will answer these questions for a UW invented technology and prepare a feasibility plan that contains an assessment of the underlying technology, a proposed product/solution that incorporates the technology, a conceptual business model for a business that could generate a reasonable return, and a one-year roadmap of milestones needed to move the venture forward.

In addition to working on a feasibility plan, students will learn and apply key concepts taught in the course to their own business experience.

This is a four (4) credit course and the expectation is that students will spend at least ten hours a week on combined class time and independent research.

All students will be required to sign a UW Confidentiality Agreement and must pledge confidentiality regarding their classmates' projects. If you have a "conflict of interest" you must explain it in writing. If we do not receive written notification of such a conflict, we will assume that none exists. Conflict of interest may come from students analyzing companies/technologies they are working with, on, in their labs, or on behalf of their professors.

Learning Objectives

Upon completion of this course, students will be able to:

- Understand the commercialization process and gain firsthand experience working with a UW invented technology to scope possible commercialization paths.
- Understand approaches to conducting primary and secondary research to support a commercialization hypothesis.
- Understand business models --- and create a feasible business model for a solution incorporating the new technology.
- Gain experience developing and scoping project milestones.
- Gain experience presenting a business concept and feasibility plan to others.

Prerequisite

This course is designed for students who have a strong interest in exploring the process of transforming innovative new technologies into marketable products and services. It is not a traditional lecture and note-taking course but one that involves significant hands-on work as part of a team. If you are looking for a team-based experience and have time outside of class to conduct needed research and analysis --- this course may be for you.

Course Reading Materials

All required readings for the course will be posted on Canvas. Students are expected to read all materials before class and be prepared to engage in conversation regarding articles.

Course Requirements

Students are expected to attend and participate in all class meetings (unless pre-arranged with the instructor) and to spend the appropriate time needed to research their technologies and prepare for

class assignments. This course will include two (2) individual student deliverables one (1) interim team report/presentation, and one (1) final team deliverable (feasibility plan and presentation).

Class Attendance

Class attendance is critical to participation in the learning experience and is *required* aside from circumstances related to (1) illness or (2) a critical work event with your employer that cannot be rescheduled. If you are not able to attend a particular class session, please email me in advance. Regardless of the rationale, please note that you are responsible for the learning experience that takes place in your absence; please work within your team to address any material you may have missed.

Written Work

All written assignments will be due on the date scheduled. Papers will be graded on content and style, with content providing approximately 70% of the overall grade. Content includes the quality of information and conclusions, support for conclusions, and the logic and flow of the information presented. Style includes grammar, spelling, punctuation and word usage.

Look at this Final Commercialization Report as an example.

Assignments & Grading

Individual 40%

- Individual team contribution peer review 10% 100 points
- Individual assignments: 30% 300 points
 - - News article, podcast recommendation 50 points
 - One-page discussion of article *or* prepping and conducting guest speaker session 150 points
 - Final one-page reflection paper 100 points

Team 60%

- 1 Cloverleaf Analysis 10% 100 Points
- (2) Interim team updates/presentations 20% 200 points (100 points each)
- Final team report/presentation 30% 300 points

Total 100% 1000 points

See a sample of a previous Final Report and Final Presentation

Individual and team reports/presentations will be judged on the quality and strength of the analysis, the synthesis of principles taught in the course, and the collaboration of team members with different skills as expressed as a single work product of the group. Demonstrated teamwork and collaboration will improve your grade and the quality of the final work product.

Individual Participation & Assessment 400

With over 40 people in the class it will be hard to give airtime to everyone, so we will be using Canvas Discussions to allow more participation. You have three ways of getting participation points

1. Contributing to Discussion individually once during the quarter 50
2. Contributing questions for the guest speakers in advance of class *or* article review 150
3. Reflection Paper and Group peer review 200

Team Participation & Assessment

Given the significant amount of time you will be working in a team setting it will be important that you quickly become acquainted with each other's backgrounds, skills strengths, and working styles. To help each team member learn from their experience in the course a team assessment will be administered at the end of the course. You will be evaluated by your team members using an evaluation sheet that will be provided. The number of points you receive will be the average of all the scores your teammates give you.

Professionalism

Each student is expected to be fully engaged in class content and respectful of fellow students' and your instructor's attempts to do the same. Other than technologies that are directly related to class (e.g., a notebook computer for note taking), please otherwise refrain from use of computer, phone, and similar technologies during class. Please also note that participation grades are based on quality of participation in class; high quality participation requires all of your attention and focus during class time.

Academic Integrity

This class follows the principles and procedures espoused by the University of Washington Student Conduct Code and Foster School of Business MBA Honor Council to maintain academic integrity in the course. If you are unclear about how the Code applies to assignments for this course, for example, what kind of assistance is permissible for homework, whether you may study with classmates for an exam, how to cite source material gathered from the internet, etc., please ask for clarification. Suspected

violations will be handled through the MBA Honor Council in compliance with the University of Washington Student Conduct Code (<http://www.washington.edu/students/handbook/conduct.html>) as outlined in Washington Administrative Code 478-120.