Description

Welcome to Technology Commercialization (ENTRE 541). The course provides graduate students with the principles and practice of building a technology commercialization plan for an innovative new technology. The Course is designed to leverage the skills and perspectives of students in cross-disciplinary teams so students learn how to work effectively with peers from other disciplines in assessing complex, situations.

Student teams will develop and present a commercialization plan from technologies made available by the University of Washington and Washington State University. 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.

Course lectures, guest speakers and student work assignments are intended to build upon each other so that students are able to start building a plan immediately. From technology, product and market assessments, to selecting business models and understanding required capital, written assignments are intended to inform the final commercialization plan and presentation.

All students will be required to sign a UW or WSU Participation and 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

- To understand the key concepts for evaluating and commercializing new technologies arising within academia or industry including: technology assessment, market and product opportunity assessment, business model options, financial model development, fundraising strategies and commercialization plan presentation.
- To apply those concepts toward the creation and presentation of a commercialization plan for an innovative technology --- and to do so while working in a cross disciplinary team.

Course Requirements

This class requires a high level of involvement and commitment. 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 two (2) team interim reports/presentations, and one (1) final team deliverable (commercialization 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.

Grading

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<thead>
<tr>
<th>Class Contribution</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Class Contribution</td>
<td>20%</td>
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<tr>
<td>(2) Individual written assignments</td>
<td>30%</td>
<td>(300 points – 150 points each)</td>
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<tr>
<td>(2) Team interim reports/presentations</td>
<td>20%</td>
<td>(200 points – 100 points each)</td>
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<tr>
<td>(1) Team final report/presentation</td>
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Individual/team reports and presentations will be judged on the quality and strength of the analysis, 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. Grades for individual students may be adjusted (up or down) to account for differences in performance of individual members of a project team.

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 or accessing a supporting Excel file or web page), please otherwise refrain from use of computer, phone, PDA, 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 gather 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.
Course Schedule and Work Plan

Course lectures, guest speakers and student work assignments are intended to build upon each other so that students are able to start building a plan immediately. From technology, product and market assessments, to selecting business models and understanding required capital, written assignments are intended to inform the final commercialization plan and presentation.

Session 1: Introduction

Class session: April 1st, 2014 | 6:00 PM – 9:20 PM | PCAR 393

- Introduction - course overview, grading, student deliverables & team projects
- Setting the stage – Technology commercialization landscape
- Overview of UW Technology Transfer Office & Programs
- Student projects

**Deliverables:**
- Student signed UW or WSU Participation & Confidentiality Agreement

**Required Reading:**

- UW Center for Commercialization Participation & Confidentiality Agreement
- List of available team project technologies (to be posted on Blackboard)
- Student project presentation & written deliverable (posted on Blackboard)

**Suggested Readings:**

- Technology Ventures, From Idea to Enterprise - Chapter 2, Opportunity and the Concept Summary

**Guest speakers:**

Patrick Shelby, Director, New Ventures, UW Center for Commercialization (C4C) – *Mission & Programs of C4C*

Session 2: Technology Evaluation & IP Protection

Class session: April 8th, 2014 | 6:00 PM – 9:20 PM | PCAR 393

- Intellectual Property overview & issues
- Design Thinking
- Student Team meeting time

**Required Reading:**


**Suggested Reading:**

- Technology Ventures, From Idea to Enterprise - Chapter 10, Legal Formation and Intellectual Property (pgs. 237-244)

**Guest speakers:**

Andy Graham, Patent Portfolio Manager, UW Center for Commercialization – *IP Overview*
Craig Hajduk, Managing Director, Artefact Group – Design Thinking

**Session 3: Evaluating Applications & Markets**

**Class session:** April 15th, 2014 | 6:00 PM – 9:20 PM | PCAR 393

- Primary & Secondary Research to explore application/industry opportunities
- UW Spinout Experience – Aqueduct Neurosciences

**Deliverables:** Individual Assignment #1

Each student to turn in a completed “Cloverleaf Model” technology readiness checklist for their team technology along with a written summary of commercial readiness.

- To what extent are Market, Technology, Commercial, and Management Readiness conditions met? For those elements where conditions are met --- how confident are you?
- What elements deserve the most focus for investigation to complete your commercialization plan? What can you team add to the commercialization thinking for this technology?

**Suggested Reading:**


**Guest speakers:**

- Sean Campbell, CEO, Cascade Insights – Internet Based Secondary Research Methods
- Erik Haroldson, Sr. V.P. TNS Global – Primary Research Methods
- Tom Clement, President & CEO, Aqueduct Neurosciences – Perspectives from a UW Spinout experience

**Session 4: Business Model Evaluation**

**Class session:** April 22nd, 2014 | 6:00 PM – 9:20 PM | PCAR 393

- The Lean Canvas – a handy tool for business model exploration
- The License or Spinoff Decision

**Required Reading/Viewing:**


- **Learn how to create a lean canvas:** Watch: Capture your Business Model in 20 minutes – Lean Canvas [http://www.youtube.com/watch?v=7o8uYdUaFR4](http://www.youtube.com/watch?v=7o8uYdUaFR4)

**Suggested Reading:**

- Technology Ventures, From Idea to Enterprise – Chapter 3, Vision and the Business Model, Chapter 4, Competitive Strategy, Chapter 11, Pages 253-258
Session 5: Pre-Commercialization Milestone Funding & Team Update #1

Class session: April 29th, 2013 | 6:00 PM – 9:20 PM | PCAR 393

Suggested Reading:
- Technology Ventures, From Idea to Enterprise – Chapter 16, Pages 369-376

Deliverables: Team progress report #1
  - Team presentation and commercialization progress report:
    - Technology description (in layman’s terms)
    - Technology features and potential benefits
    - IP Protection & Commercialization status
    - Possible applications & markets
    - Team focus for commercialization planning --- how do you intend to add value?

Guest speaker:

Dr. Bala Nair, Assistant Professor, Anesthesiology & Pain Medicine. UW Medicine
Smart Anesthesia Manager – Company Spinoff or License?
Ben Straughan, Partner, Perkins Coie – License vs. Spinoff Considerations

Session 6: UW Spinout Experiences

Class session: May 6th, 2014 | 6:00 PM – 9:20 PM | PCAR 393

Required Reading:
- Explore and understand the business and offerings of:
  - www.wallyhome.com
  - www.qazzow.com

- Be prepared to engage with guest speakers to explore topics that will contribute to your project.

Guest speakers:

John P. DesRosier, Ph.D., Executive Director, Life Sciences Discovery Fund – LSDF Funding
Janette Ennis, GAP Funding Manager, UW Center for Commercialization - Leveraging federal funding

Session 7: Licensing

Class session: May 13th, 2014 | 6:00 PM – 9:20 PM | PCAR 393

Deliverables: Individual Assignment #2
  - Each student to turn in a proposed Lean business model canvas for their team project along with a written summary describing key elements of the model.
Guest speakers:
Dr. Vikram Jandhyala, Professor & Chair, UW Dept. of Electric Engineering

Session 8: The Inrix Experience & Team Update #2
Class session: May 20th, 2014 | 6:00 PM - 9:20 PM | PCAR 393

Required Reading:
  - How would you characterize the opportunity for Real Time Traffic Information (RTTI)?
  - What key decisions & relationships drove the growth of Inrix?

Guest Speakers:
Brian Mistele, President & CEO Inrix

Deliverables: Team Progress Report #2
Team presentation and commercialization progress report:
- Summary and results of team focus for commercialization analysis
- Key 1-2 year commercialization milestones
- Funding requirements and sources to achieve milestones

Session 9: Company Launch: Angel & Venture Financing
Class session: May 27th, 2014 | 6:00 PM - 9:20 PM | PCAR 393

Required Reading:

Suggested Reading:

Guest speakers:
Dan Rosen, Board Chair, Alliance of Angels (AoA) – AoA and Angel Investing
Greg Gottesman, Managing Director, Madrona Venture Group – A Venture Capitalist perspective

Session 10: Student Team Commercialization Presentations
Class session: June 3rd, 2014 | 6:00 - 9:20 PM | PCAR 393

Deliverables: Completed written commercialization plan & PowerPoint presentation

See separate document entitled “Student project presentation & written deliverable” found on the course Blackboard page. Students will present their plans (10 minute presentation + 10 minute Q&A) to an outside review committee composed of C4C & researcher representatives.