

**Western University - Faculty of Engineering**  
**ENGSCI 9015**

**Commercializing Innovation: how smart companies use intellectual property and data assets  
to make money from ideas**

Course Outline – Summer 2021

**Objectives:**

The world's most valuable companies like Apple, Amazon, Alphabet, Microsoft, Facebook hold 95% of their value in intangible assets that include intellectual property and data. This course will explore how leading and early stage technology companies can capture economic returns simply from the ideas that they create and own.

While intellectual property has often been considered a legal framework, more frequently, smart innovators are able to extract significant market value from their intellectual property and data stocks.

Internationally, there is a global arms race for artificial intelligence-related intellectual property. The United States and China are amassing thousands of patent filings related to AI and machine learning. A fundamental component of implementing AI is data. As oil is to an engine, so is data the fuel of AI technologies. This course will explore the existing and future potential to extract intellectual property from generational technologies like artificial intelligence and data driven technologies.

Integral the execution of these strategies is the intellectual property strategist and the patent engineer. This class will provide engineers with the ability to identify, generate, and strategically use intellectual property and data assets to drive business.

**Format:**

This course includes three components (1) scheduled online class time (2) pre-recorded lectures, and (3) online course materials. The (1) scheduled class time will include interactive exercises based off of the (2) pre-recorded lectures and (3) online course materials. The (3) online course materials, as assigned, are mandatory aspects that each student is expected to complete in advance of the (1) scheduled class time.

**Topics:**

The following list details some of the specific aspects to be covered:

1. Innovation and commercialization of technology: the rise of intellectual property  
This component will introduce the student to innovation concepts, intellectual property, and how the tangible economy has shifted to a knowledge-based economy and a data driven economy.
2. Driving business with intellectual property and data assets

This component will introduce the students to intellectual property business strategies and how companies use intellectual property and data assets to drive their business.

3. The patent engineer:

a. From idea to granted patent – the role of the patent engineer

This component will teach the students how to work with inventors to extract intellectual property. Students will also learn how to prepare a patent application, including the various practical considerations. Students will also learn patent prosecution and examination basics.

b. Freedom to operate; IP landscaping; prior art libraries

This component will discuss how companies need to manage their freedom to operate constraints, including assessing, mitigating, and dealing with infringement risk of other's intellectual property.

4. Innovation asset management:

a. Early stage companies to global IP champions

This component will detail the different strategies that companies at different stages employ to match their business needs

b. Portfolio building, acquisition, divestiture

Students will learn how IP portfolios can be generated and traded as assets.

c. IP valuation and monetizing

This component will consider the various ways to value intangible assets and how companies are able to monetize IP assets directly.

5. Joint IP strategies

This component will explore the often messy and complicated arrangement when two or more groups come together to develop and commercialize technology and the consideration that companies should make to ensure a successful joint IP strategy.

6. Data as an innovation asset

This component will explore how some of today's most valuable companies are able to make money from data, and how intellectual property strategies for data play an integral role in monetizing data. Data privacy and other regulatory concerns will also be explored.

7. Strategic standards setting – an IP multiplier

This component will detail how companies can imbed their intellectual property into strategic standards, to further lock in their competitive advantage. In addition, this component will explore how, if standards become regulated, companies who own the IP of the regulation further extend their business position.

8. Case study: Artificial intelligence IP strategies

In this component, students will see the strategies and types of intellectual property that companies use to advance their position in emerging technologies like artificial intelligence and machine learning.

9. Case study: Clean technology

This component will detail the opportunity and strategies that governments and companies can use intellectual property strategies to environmental goals.

10. National level strategies: US, China, Canada, and the world

This component will survey how different countries use their domestic and international positions to extract intellectual property advantage to benefit their economies.

**Prerequisite:** This course is open to any MEng student at any stage of the program.

**Corequisite/ Antirequisite:** None

**Schedule:**

Online class sessions:

Tuesdays 9-10:30: May 11, 18, 25, June 1, 8, 15

Final Assessment Tuesday, June 22

Asynchronous materials posted on OWL regularly.

Online MOOC: Modules to be assigned and completed before each class, available here: <https://mooc.cigionline.org/>

**Instructor:**

Assistant Professor James W. Hinton, [jhinton3@uwo.ca](mailto:jhinton3@uwo.ca)

Jim Hinton is the founder of Own Innovation and a proud supporter of Canadian technology companies. In addition to being an IP lawyer, he is both a patent and trademark agent before the Canadian IP Office, and works directly for Canadian companies with the US Patent and Trademark Office.

Jim is the co-founder of the Innovation Asset Collective, Canada's patent collective. He is also a fellow at the Centre for International Governance Innovation, where he studies IP and innovation policy. Jim also has a background in mechanical engineering and worked in heavy truck manufacturing and fiberglass project management, before law school. Additionally, he has a Bachelor of Engineering from McMaster University and a Juris Doctor from the University of Toronto.

Guest experts and innovators may present on specific topics.

**Course Materials:**

Edison in the Boardroom Revisited: How Leading Companies Realize Value from Their Intellectual Property by Suzanne S. Harrison, 2011

CIGI MOOC: <https://mooc.cigionline.org/>. Students will be expected to complete assigned modules before class and email a screenshot to the instructor in advance of each week's class.

### **Evaluation:**

The final course mark will be determined from MOOC participation, a midterm examination and a final examination. The reports will focus on the continual application of the business principles learned in the course to a practical situation. Students will be evaluated on their engagement with the material and contribution to class discussions, and thus attendance will be nearly mandatory.

Participation in class	30%
MOOC completion	30%
<u>Final assessment</u>	<u>40%</u>
	100%

### **Scholastic Offences:**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: [http://www.uwo.ca/univsec/handbook/appeals/scholastic\\_discipline\\_grad.pdf](http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_grad.pdf).

### **Plagiarism:**

University policy states that plagiarism, defined as the “act or an instance of copying or stealing another’s words or ideas and attributing them as one’s own.” (excerpted from Black’s Law Dictionary, West Group, 1999, 7th ed., p. 1170) is a scholastic offence. In submitting any written work as part of the coursework requirements for this course students must ensure that this work is written in their own words. Whenever students take an idea or a passage of text from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

A student who is found guilty of plagiarism in respect of any written work submitted as part of the coursework requirements for this course will be given a grade of zero for the submitted work. Repeated acts of plagiarism, either in this course or any other course subsequent to a first offence, will result in the student being given a failing grade for the course in which the subsequent offence occurs, and may also incur further penalties such as requiring the student to withdraw from the program in which they are enrolled in.

### **Attendance:**

Any student who, in the opinion of the instructor, is absent too frequently from class, laboratory, or tutorial periods will be reported to the Dean (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Dean, the student will be debarred from taking the regular final examination in the course.

**Accessibility:**

Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

**Conduct:**

Students are expected to arrive at lectures on time, and to conduct themselves during class in a professional and respectful manner that is not disruptive to others. Late comers may be asked to wait outside the classroom until being invited in by the Instructor. Please turn off your cell phone before coming to a class, tutorial, quiz or exam.

On the premises of the University or at a University-sponsored program, students must abide by the Student Code of Conduct:

<http://www.uwo.ca/univsec/board/code.pdf>.

**Sickness and Other Problems:**

Students should immediately consult with the Instructor or Department Chair if they have any problems that could affect their performance in the course. Where appropriate, the problems should be documented (see attached). The student should seek advice from the Instructor or Department Chair regarding how best to deal with the problem. Failure to notify the Instructor or Department Chair immediately (or as soon as possible thereafter) will have a negative effect on any appeal.

For more information concerning medical accommodations, please see: [http://www.uwo.ca/univsec/handbook/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/handbook/appeals/accommodation_medical.pdf).

**Notice:**

Students are responsible for regularly checking their email, and the course OWL site for notices related to the course.