

Faculty of Science Course Syllabus
Department of Economics
Economics 2211
Economics of Innovation
Fall 2018

Instructor(s): Jonathan J Simms jjjsimms@dal.ca A-13, 6220 University Ave.

Lectures: 17:35 – 18:55 Tuesdays and Thursdays Mona Campbell Bldg. Room 1108

Teaching Assistant:

Course Description

This course examines the place of innovation in microeconomic policy space. It does so from two perspectives: the capacity of the private sector to recognize and address productivity gaps with investments in innovative products, processes and methods, on the one hand, and the capacity (i.e., limits) of government policy and program initiatives to promote innovation in their economies, on the other. NOTE: All Economics courses, unless stated otherwise, must have a minimum grade requirement of C for their prerequisite courses.

Course Prerequisites

ECON 1101 or ECON 1102, or by permission of the professor

Course Objectives/Learning Outcomes

- To enhance students' understanding of the innovation imperative in growing economy
- To improve students' knowledge of what accounts for the state of innovation performance
- To survey with students the key factors that comprise a framework for an innovation strategy
- To improve students' capacity to critically assess innovation policy in a global context

Required Course Materials

Atkinson, Robert D. and Ezell, Stephen J., "Innovation Economics: The Race for Global Advantage", New Haven: Yale University Press. 2012

Course Assessment

Component	Weight (% of final grade)	Date
<i>Bio Application</i>	10	Sept 13, Dec 4
<i>Case Study/Assignments</i>	20	Oct 9, Nov 6
<i>Research Project Proposal/Pitch</i>	25	Nov 19 th 4:30pm/ Pitch to follow
<i>Final</i>	45	TBA

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D	(50-54)
A (85-89)	B (73-76)	C (60-64)	F	(<50)
A- (80-84)	B- (70-72)	C- (55-59)		

Course Requirements

This is a course for economics majors and those who have already declared a field of study in science, engineering and sustainability and who would like to explore the implications of their anticipated pursuits in the context of the economy. To that end, each week of classes will include one session on the topic assigned for that week and a second session designed to introduce the practical aspects of science, technology, engineering and mathematics' (STEM's) contributing innovations to productivity and growth in our modern, post-industrial economy.

The practical/experiential sessions will be of three varieties:

Field Trips. Field trips may be arranged according to the existing Faculty of Science practices and rules, with the possibility of additional fees for buses etc, if necessary, and these fees will be announced in advance. Such visits may be to one or more of the following: a research lab, a business, public sector facilities, and a non-governmental organization. These will be designed to introduce the economic considerations – both upstream and downstream - that are required for the pursuit of a new invention, introducing a new innovation, investing in a commercialization opportunity, or offering an environmentally sustainable product or production process.

Presentations: Guest Speakers/ Panel discussions on economics topics that pertain to the inputs, operations and outputs of innovation initiatives such as, intellectual property and patent law, management innovation, processing innovations, product and service innovations, and public policy (regulatory and program development).

Workshop. “The Research Entrepreneur Entering the Innovation Ecosystem”: the micro- and macro-economic considerations involved in the policy and program aspects behind major R&D funding programs and the practical steps required to explore, develop and produce a winning “Start-up” application proposal.

Students will be evaluated on the following:

“Bio Application” (value 10%): Delivery at the end of the first two weeks of classes of a one-to-two page student biography with career intentions, explaining how an understanding the economics of innovation will add value to their careers. In the last two weeks of classes, the students will repeat the exercise. Linkages drawn across such elements as purpose, background, rationale, demonstrated knowledge and experience, together with clarity of writing, will determine grades. The grade will be applied following the second submission.

Case Studies/Assignments (Value 20%): There will be two 5-page assignments: the first in a macro-economic context, will examine innovation, writ large, and a public sector innovation strategy. The second will be set in a micro-economic context, examining sustainable manufacturing. Both will reference the activities and case studies of the Organization for Economic Co-operation and Development (OECD). With a membership of 35 countries, the OECD provides a forum in which governments can work together to share experiences and seek solutions to common problems.

Joint Project and “Pitch” (Value 25%): Drawing on the various components of the course, together with lessons gained from the workshop, students will work in groups of up to 5 members to prepare a proposal demonstrating the economic theory and rationale for the funding of an innovation (e.g., a research grant, financial investment in a new innovative production process, or the funding of the commercialization of a new product or service) that advances the social, economic or environmental benefits to the firm, the community or the industrial economy, in general, in one of four industries: information technologies, advanced manufacturing, ocean technologies, and life sciences. In addition to their multi-sectioned project binder, each group will deliver a ‘pitch’ for the proposal to the class, and each group will adjudicate the “pitch” of another group. Of the 25% value, 5% will be based on the Individuals’ participation in the “pitch” to the class; 5% will be based on the individuals’ evaluation – rubric to be provided - of another group due at the next class; and 15% will be based on individuals’ content in their joint project.

Final Examination (Value 45%): a multiple choice section, a required question section, and an optional questions section.

Course Policies

To make-up for missing a submission or the final exam, students will require a medical certificate.

As this is a more experientially-based course, your attendance and participation is particularly essential. Therefore, absence from three of the eight presentations and field trips (combined total) will result in a deduction of 10 points from your final grade.

All deliverables – biography, assignments and project – are to be double-spaced, 12-pt font, New Times Roman with bibliographies and annexes, as required). No more than 15% of the text is to be quotations. Citation protocols APA or Chicago may be used.

Course Content

Sept 4

Imperative Atkinson, Robert D. and Ezell, Stephen J Ch 1

Sept 6	<u>Decline</u> Atkinson, Robert D. and Ezell, Stephen J Ch 2 - 3
Sept 11	<u>Challenges</u> Atkinson, Robert D. and Ezell, Stephen J Ch 4
Sept 13	PRESENTATION: Innovation Solutions (Bio Appl'n DUE)
Sept 18	<u>Trends</u>
Sept 20	FIELD TRIP 1: IDEA/ShiftKey/CDC
Sept 25	<u>Talent</u> https://www.economist.com/business/2018/08/11/more-staff-training-is-vital
Sept 27	WORKSHOP: BDC/Innovacorp
Oct 2	<u>Frameworks</u> Atkinson, Robert D. and Ezell, Stephen J Ch 5
Oct 4	FIELDTRIP 2: DEFSEC Tour
Oct 9	<u>Applied</u> Atkinson, Robert D. and Ezell, Stephen J Ch 6 (Assignment 1 DUE)
Oct 11	PRESENTATION: Patent Law/CIPO
Oct 16	<u>Social</u> Atkinson, Robert D. and Ezell, Stephen J Ch7
Oct 18	PRESENTATION: GHP and NSBI
Oct 23	<u>Governance</u> Atkinson, Robert D. and Ezell, Stephen J Ch8
Oct 25	PRESENTATION: T4G and Entrevestor
Oct 30	<u>Context</u> Atkinson, Robert D. and Ezell, Stephen J Ch10
Nov 1	FIELD TRIP 3: COVE
Nov 6	<u>Forward</u> Atkinson, Robert D. and Ezell, Stephen J, Ch 11 (Assignment 2 DUE)
Nov 8	FIELD TRIP 4: BIOPORT
Nov 13	No Class
Nov 15	No Class
Nov 20	PITCH: Advanced Manufacturing (Projects DUE by: Nov 19th 4:30pm)
Nov 22	PITCH: Digital

Nov 27	PITCH: Oceans
Nov 29	PITCH: Life Sciences
Dec 4	The Economics of Innovation/Review (Bio Appl'n DUE)

ACCOMMODATION POLICY FOR STUDENTS

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. The full text of Dalhousie's Student Accommodation Policy can be accessed here:

http://www.dal.ca/dept/university_secretariat/policies/academic/student-accommodation-policy-wef-sep--1--2014.html

Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the **Advising and Access Services Centre (AASC)** prior to or at the outset of the regular academic year. More information and the **Request for Accommodation** form are available at www.dal.ca/access.

ACADEMIC INTEGRITY

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

The Academic Integrity website (<http://academicintegrity.dal.ca>) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. The full text of Dalhousie's **Policy on Intellectual Honesty** and **Faculty Discipline Procedures** is available here:

http://www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html

STUDENT CODE OF CONDUCT

Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general:

"The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect

- the integrity and proper functioning of the academic and non – academic programs and activities of the University or its faculties, schools or departments;
- the peaceful and safe enjoyment of University facilities by other members of the University and the public;
- the freedom of members of the University to participate reasonably in the programs of the University and in activities on the University's premises;
- the property of the University or its members."

The full text of the code can be found here:



http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

SERVICES AVAILABLE TO STUDENTS

The following campus services are available to help students develop skills in library research, scientific writing, and effective study habits. The services are available to all Dalhousie students and, unless noted otherwise, are free.

Service	Support Provided	Location	Contact
General Academic Advising	Help with <ul style="list-style-type: none"> - understanding degree requirements and academic regulations - choosing your major - achieving your educational or career goals - dealing with academic or other difficulties 	Killam Library Ground floor Rm G28 Bissett Centre for Academic Success	In person: Killam Library Rm G28 By appointment: <ul style="list-style-type: none"> - e-mail: advising@dal.ca - Phone: (902) 494-3077 - Book online through MyDal
Dalhousie Libraries	Help to find books and articles for assignments Help with citing sources in the text of your paper and preparation of bibliography	Killam Library Ground floor Librarian offices	In person: Service Point (Ground floor) By appointment: Identify your subject librarian (URL below) and contact by email or phone to arrange a time: http://dal.beta.libguides.com/sb.php?subject_id=34328
Studying for Success (SFS)	Help to develop essential study skills through small group workshops or one-on-one coaching sessions Match to a tutor for help in course-specific content (for a reasonable fee)	Killam Library 3rd floor Coordinator Rm 3104 Study Coaches Rm 3103	To make an appointment: <ul style="list-style-type: none"> - Visit main office (Killam Library main floor, Rm G28) - Call (902) 494-3077 - email Coordinator at: sfs@dal.ca or - Simply drop in to see us during posted office hours All information can be found on our website: www.dal.ca/sfs
Writing Centre	Meet with coach/tutor to discuss writing assignments (e.g., lab report, research paper, thesis, poster) <ul style="list-style-type: none"> - Learn to integrate source material into your own work appropriately - Learn about disciplinary writing from a peer or staff member in your field 	Killam Library Ground floor Learning Commons & Rm G25	To make an appointment: <ul style="list-style-type: none"> - Visit the Centre (Rm G25) and book an appointment - Call (902) 494-1963 - email writingcentre@dal.ca - Book online through MyDal We are open six days a week See our website: writingcentre.dal.ca