

**University of Calgary
Department of Communication and Culture**

**Science, Technology and Society STAS 401.05 L01
Special Topics in Science, Technology and Society
Innovation and Contemporary Society**

Fall 2014

Tuesday 9 September to Tuesday 2 December (excluding Tuesday 11 November)

Tu 3:30PM – 6:15 PM

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Office Hours: Mondays 10:00 – 11:00, Tuesdays 10:00 – 11:00, or by appointment

Course Description

The term “innovation” has acquired considerable power in the popular imagination. Both the creation and preservation of wealth and prosperity are commonly linked to innovation, which in turn has become the cornerstone of virtually all concepts of the knowledge society or knowledge economy. However, these expectations and claims are almost exclusively associated with technology and with technical change. Indeed, the origins of theories attributing economic performance and social development to innovation hinge almost entirely upon technical change. Nevertheless, there remain many questions about the definition, nature and consequences of innovation. Many of these concern the relationship between technical and socio-economic factors in innovation.

This course will explore various social, economic and political theories of innovation and discuss their implications in a variety of practical contexts. In a seminar format, students will become familiar with the intellectual history of innovation as a socio-economic concept and with how this concept has inflected contemporary thinking about such matters as social development, economic performance, commerce, and the organization and governance of public and private institutions.

The course will be conducted as a seminar involving both discussion of core readings provided by the instructor and student presentations based upon research assignments. Students will also prepare a term paper on a topic of their choice.

Objectives of the Course

To examine critically contemporary perceptions of innovation as embodied in technological change and explore new thinking about innovation as a social and political process.

To become familiar with the theory and evidence surrounding innovation and a socio-economic phenomenon.

To gain experience researching and presenting topical issues related to science technology and society in an innovation context.

Textbooks and Readings

All readings can be accessed electronically through the main library journal collection or through D2L where indicated.

1. Intellectual origins

Ruttan, V. (1959) Usher and Schumpeter on Invention, Innovation, and Technological Change, *The Quarterly Journal of Economics*, 73 (4), 596-606.

Hospers, Gert-Jan (2005) Joseph Schumpeter and his legacy in innovation studies, *Knowledge, Technology & Policy*, 18 (3), 20-37.

Godin, B. (2006) The Linear Model of Innovation: The Historical Construction of an Analytical Framework, *Science, Technology, & Human Values*, 31 (6), 639-667.

2. Innovation and Economics

David, P. (1985) Clio and the economics of QWERTY, *American Economic Review*, 75 (2), 332-337.

Baumol, W. J. (2003) Innovations and growth: two common misapprehensions, *Journal of Policy Modeling*, 25, 435-444.

Nelson, R. & S. Winter (1977) In search of a useful theory of innovation, *Research Policy*, 6, 36-76.

3. Social dynamics of innovation

Florida, R. (2002) The economic geography of talent, *Annals of the Association of American Geographers*, 92 (4), 743-755.

Hawkins, R. & C. Davis (2012) Innovation and Experience Goods: A Critical Appraisal of a Missing Dimension in Innovation Theory, *Prometheus – Critical Studies in Innovation*, 30 (3), 235-259.

Eltham, B. (2013) Three arguments against 'soft innovation': towards a richer understanding of cultural innovation, *International Journal of Cultural Policy*, 19 (5), 537-556.

4. Institutional dynamics of innovation

Wright, G. (1990) The origins of American economic success, *American Economic Review*, 80, 651-668.

(D2L) Weiss, C. and W. B. Bonvillian (2011) Complex Established 'Legacy' Sectors, The Technology Revolutions that Do Not Happen, *Innovations*, 6, (2), 157-187.

Freeman, C. (2002) Continental, national and sub-national innovation systems – complementarity and economic growth, *Research Policy*, 31, 191-211.

5. Innovation and policy

(D2L) Soete, L. (2007) From industrial to innovation policy, *Journal of Industrial Competitiveness and Trade*, 7, 273-284.

Shane, S. (2009) Why encouraging more people to become entrepreneurs is bad public policy, *Small Business Economics*, 33, 141-149.

Smith, K. (2009) Innovation as a Systemic Phenomenon: Rethinking the Role of Policy, *Enterprise & Innovation Management Studies*, 1(1), 73-102.

6. Innovation and industry

Pavitt, K. (1990) What we know about the strategic management of technology, *California Management Review*, 32 (3), 17-26.

Baumol, W. (1990) Entrepreneurship: Productive, Unproductive, and Destructive, *Journal of Political Economy*, 98 (5), 893-921.

Rosenberg, N. (1990) Why do firms do research (with their own money)?, *Research Policy*, 19, 165-174.

7. Innovation and knowledge

Pavitt, K. (1991) What makes basic research economically useful?, *Research Policy*, 30, 109-119.

Mazzoleni, R. & R. Nelson (1998) Economic theories about the benefits and costs of patents, *Journal of Economic Issues*, 32 (4), 1031-1052.

Hughes, A. (2011) Open innovation, the Haldane principle and the new production of knowledge: science policy and university-industry links in the UK after the financial crisis, *Prometheus- Critical Studies in Innovation*, 29 (4), 411-442.

8. Monitoring and measuring innovation

Hawkins, R. (2012) Looking at innovation from a uniquely Canadian perspective: The case for a new alliance of practice, policy and scholarship, Discussion Paper, Ottawa: Institute for Science, Society and Policy, March.

Martin, B. R. (1995) Foresight in Science and Technology, *Technology Analysis & Strategic Management*, 7 (2), 139-168.

Freeman, C. and L. Soete. (2009) Developing science, technology and innovation indicators: what we can learn from the past, *Research Policy* 38 (4), 583–589.

Internet and electronic communication device information

It is disruptive to the learning goals of the course to engage in electronically enabled activities unrelated to the course while teaching sessions are in progress. Students are reminded to turn mobile telephones and other electronic devices off during the sessions and to use laptops for course-related purposes only. Students not wishing to comply with these terms may be asked to withdraw from the session.

Students expecting emergency communications during a session are exempted from these provisions upon prior notification of the instructor.

Recording of lectures will be permitted only for students who have a formally diagnosed physical or learning disability that requires this action. Written proof of disclosure of such disabilities to the relevant university administrative bodies will be required before such permission is granted (refer to the Students with Disabilities section below).

Assignments and Evaluation

1. Reading responses (40%) – Each student will prepare two written in-depth critical responses (20% each) to papers selected by the student from the reading list. Each paper will be approximately 750 words (3-4 four double spaced pages) and should contain (1) a brief explanation of the intellectual stance of the author and the context of the reading, (2) a brief outline of the content and main ideas, (3) an extended discussion of the author's insights and their implications for understanding innovation in the contemporary social milieu. ***Reading responses can be submitted anytime after week three (23 October). November 4 is the deadline for receipt of both responses.***

2. Topical Seminars (20%) – Each student will lead one seminar on their Term Paper topic. The seminar will be assessed according to how well it expands upon and contextualizes basic concepts and theories as contained in the readings and discussed in class. ***The Seminars will be scheduled for the last three weeks of Term***

3. Term Paper (40%) – Each student will write a fully documented research paper (2500-3000 words exclusive of bibliography) exploring innovation as it applies to a topic of their own choosing. ***Topics must be approved by the instructor. All topics must be approved by 4 November. Papers can be submitted at anytime during the Term, but all papers must be received by the last day of class (December 2).***

Registrar-scheduled Final Examination: No

All assignments and exams must be completed or a course grade of F may be assigned at the discretion of the instructor.

Submission of Assignments:

Please hand in your essays directly to your tutor or instructor if possible. If it is not possible to do so, a daytime drop box is available in SS320; a date stamp is provided for your use. A night drop box is also available for after-hours submission. Assignments will be removed the following morning, stamped with the previous day's date, and placed in the instructor's mailbox.

Please include your name and ID number on all assignments, and be prepared to provide picture ID to pick up assignments or look at final exams in SS 320 after classes have ended. Personal information is collected in accordance with the *Freedom of Information and Protection of Privacy (FOIP) Act*. For more information, see <http://www.ucalgary.ca/secretariat/privacy>

Note: It is the student's responsibility to keep a copy of each submitted assignment. For courses in which assignments are submitted electronically, it is the student's responsibility to ensure that the correct copy of the assignment is submitted. (Including

the version date or version number in your file name may help you avoid submitting the wrong version of your written assignments.)

Policy for Late Assignments

Assignments submitted after the deadline may be penalized with the loss of a grade (e.g.: A- to B+) for each day late.

Students with Disabilities

If you are a student with a disability who may require academic accommodation, it is your responsibility to register with the Student Accessibility Services (220-8237, <http://www.ucalgary.ca/access/>) and discuss your needs with your instructor no later than 14 days after the start of the course.

Writing Skills Statement

Department policy directs that all written assignments (including, to a lesser extent, written exam responses) will be assessed at least partly on writing skills. For details see <http://comcul.ucalgary.ca/needtoknow>. Writing skills include not only surface correctness (grammar, punctuation, sentence structure, etc) but also general clarity and organization. Sources used in research papers must be properly documented. If you need help with your writing, you may use the Writing Centre. Visit the website for more details: <http://www.ucalgary.ca/ssc/writing-support>

Grading System & Dept of Communication and Culture Grade Scale

Work in this course will be graded using letter grades, The following grade scale percentage equivalents are used in Communication and Culture:

Grade Point Value	Description	Grade	Department grade scale equivalents	Letter grade % equivalent for calculations
4.00	Outstanding	A+	96 - 100%	98.0%
4.00	Excellent—superior performance, showing comprehensive understanding of subject matter.	A	90 - 95.99%	93.0%
3.70		A -	85 - 89.99%	87.5%
3.30		B+	80 - 84.99%	82.5%
3.00	Good--clearly above average performance with knowledge of subject matter generally complete.	B	75 - 79.99%	77.5%
2.70		B-	70 - 74.99%	72.5%
2.30		C+	65 - 69.99%	67.5%
2.00	Satisfactory—basic understanding of the subject matter.	C	60 - 64.99%	62.5%
1.70		C-	55 - 59.99%	57.5%
1.30	Minimal pass—marginal performance; generally insufficient preparation for	D+	53 - 54.99%	54.0%

	subsequent courses in the same subject			
1.00		D	50 - 52.99%	51.5%
0.00	Fail – unsatisfactory performance or failure to meet course requirements.	F	00 - 49.99%	0%

Plagiarism

Using any source whatsoever without clearly documenting it is a serious academic offense. Consequences include failure on the assignment, failure in the course and possibly suspension or expulsion from the university.

You must document not only direct quotations but also paraphrases and ideas where they appear in your text. A reference list at the end is insufficient by itself. In-text citations must be provided, and readers must be able to tell exactly where your words and ideas end and other people's words and ideas begin. Wording taken directly from a source must be enclosed within quotation marks (or, for long quotations, presented in the format prescribed by the documentation style you are using). Paraphrased information must not follow the original wording and sentence structure with only slight word substitutions here and there. These requirements apply to all assignments and sources, including those in non-traditional formats such as Web pages or visual media.

For information on citation and documentation styles (including APA, Chicago, IEEE, MLA, and others), visit the links provided at <http://www.ucalgary.ca/ssc/node/208> . If you have questions about how to document sources, please consult your instructor or the Writing Centre (3rd Floor TFDL, <http://www.ucalgary.ca/ssc/writing-support>).

Academic Misconduct

For information on academic misconduct and its consequences, please see the University of Calgary Calendar at <http://www.ucalgary.ca/pubs/calendar/current/k.html>

Research Ethics

Whenever you perform research with human participants (i.e. surveys, interviews, observation) as part of your university studies, you are responsible for following university research ethics guidelines. Your instructor must review and approve of your research plans and supervise your research. For more information about your research ethics responsibilities, see <http://arts.ucalgary.ca/research/research/research-ethics>

Important information, services, and contacts for students

For information about . . .	Visit or contact . . .
ARTS PROGRAM ADVISING (PIC)	SS 102 403-220-3580 picarts@ucalgary.ca
CAMPUS SECURITY	http://www.ucalgary.ca/security/ 403-220-5333
• Calgary Police Service	403-266-1234 Emergency: call 911
• Emergency Text Messaging	http://www.ucalgary.ca/emergencyplan/textmessage

<ul style="list-style-type: none"> • Emergency Evacuation & Assembly • Safewalk Program 	http://www.ucalgary.ca/emergencyplan/assemblypoints If you feel uncomfortable walking alone at any time, call Campus Security for an escort (220-5333). For more information, see http://www.ucalgary.ca/security/
DESIRE2LEARN (D2L) Support <ul style="list-style-type: none"> • IT help line 	http://elearn.ucalgary.ca/desire2learn/home/students 403-220-5555 or itsupport@ucalgary.ca
STUDENT SUCCESS CENTRE <ul style="list-style-type: none"> • Writing Support Services • Student Services Mobile App 	http://ucalgary.ca/ssc http://www.ucalgary.ca/ssc/writing-support http://ucalgary.ca/currentstudents
STUDENTS' UNION CONTACTS <ul style="list-style-type: none"> • Faculty of Arts Reps • Student Ombudsman 	http://www.su.ucalgary.ca/governance/elections/home.html http://www.ucalgary.ca/provost/students/ombuds
SU WELLNESS CENTRE <ul style="list-style-type: none"> • Counselling Services • Health Services • Distress centre 24/7 CRISIS LINE • Online resources and tips 	403-210-9355 (MSC 370), M-F, 9:00–4:30 pm http://ucalgary.ca/wellnesscentre/counselling http://ucalgary.ca/wellnesscentre/health 403-266-HELP (4357) http://ucalgary.ca/wellnesscentre/healthycampus If you're concerned about a friend or your own well-being, it is important to seek help early. Call or visit the SU Wellness Centre or the 24-hour crisis line.

Schedule of Lectures and Readings

Session	Date		
1	Sept 9	Introduction and organization	
2	Sept 16	Theme 1: Intellectual origins	Discussion
3	Sept 23	Theme 2: Innovation and economics	Discussion
4	Sept 30	Theme 3: Social dynamics of innovation	Discussion
5	Oct 7	Theme 4: Institutional dynamics of innovation	Discussion
6	Oct 14	Theme 5: Innovation and policy	Discussion
7	Oct 21	Theme 6: Innovation and industry	Discussion
8	Oct 28	Theme 7: Innovation and knowledge	Discussion
9	Nov 4	Theme 8: Monitoring and measuring	Discussion

		innovation <i>Deadline for approval of Term Paper topics</i>	
10	Nov 11	No Class – Statutory holiday	
11	Nov 18	(Scheduling as agreed with students at beginning of the course) <i>All Term Papers due in class December 2.</i>	
12	Nov 25		
13	Dec 2		