

Simon Fraser University
Political Science Departments
TECHNOLOGY and INNOVATION POLICY
(POL 457W)

Fall 2011
Wed, 9:30-13:20
WMC 2220

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Description and Schedule

Description

Objectives

This course is designed to introduce students to contemporary issues of science, technology, and innovation policy from a comparative international perspective of states and firms. The course is interdisciplinary in its approach, reviewing material from political science, development, economics, and business. The course begins with an historical and conceptual introduction to innovations and their role in economic growth and development. The second part introduces classic and contemporary works that seek to explain innovation and when, how, and why it occurs. The third part analyzes cases of technology development and failure from around the world. Students will be guided through a case or issue study throughout the course, giving them experience at creating and presenting original research relevant to business, economics, and policy. Guest speakers will share their real life career experiences.

Required Books

This is an upper level course, so students should be prepared to work through complex material. Books, wherever possible, will be placed on reserve, and articles are generally available through library servers. All other material will be available at the bookstore through custom courseware. Custom courseware is numbered sequentially as it appears in the course and the package.

Assignments

The keys to success in any course for both the professor and student are thorough preparation and active participation. Students must not only attend every session, but also engage in an in depth discussion of the topic.

Students will be graded upon participation, examinations, and writing assignments. The assignments are the following:

- 1- Thorough preparation and active participation in every class. Students should make notes from the readings and come prepared to discuss them in class. The powerpoint slides, avail. from my website, will be a good guide to the topics of the lecture and discussion for each class.
- 2- At the end of each slide presentation, there will be short exercises that will guide class group discussion at the beginning of class the following week. Students will prepare short 3-5 page reaction papers and present their opinions to the class. Students must complete at least 3 exercises, and all students will participate in the Measurement class exercise (which will count as one).
- 3- A research policy brief of up to 15 pages that examines an issue or case related to

innovation policy. Students will present their findings to the class at the end of the course. The professor will give instructions for each stage and be available for consultation throughout the process.

Suggested topics: look into the biography of an inventor; investigate how a product was invented and changed; examine a country or region's innovation profile; evaluate a current set of policies around innovation; investigate and evaluate an innovative company. These will be discussed in depth in the first class.

Grading

The assignments will be graded proportionally as follows:

- participation, includes timely attendance and discussion, 10%
- peer review exercises, 5%
- 3 exercises of 3-5 pp. including 5 minute presentations to the class (15%),
- research paper, 70%, including
 - proposal topic with preliminary literature review 5%
 - literature review 15%
 - outline of paper 10%
 - rough draft (polished finished product) 20%
 - final paper with analysis 10%
 - 10 minute presentation to class 10%

Assignments are due promptly at the beginning of class. There will be an increasing penalty for any work that is late. Pls. see my website (listed at the top) for grading philosophy, lecture slides and suggestions on reading and writing that you can download. I am generally willing to read and discuss drafts with at least one week's notice.

Plagiarism

-Plagiarism, or the use or ascription of someone else's work as your own, is a serious offence. For university policies, please see <http://www.sfu.ca/policies/Students/index.html> and <http://students.sfu.ca/academicintegrity>

Office Hours I am generally available 9-4 M-F for you to drop in, except for teaching and meeting times. You are welcome to consult by e-mail or set up an appointment to ensure you catch me. I will set up a class e-mail list.

Schedule

The schedule is planned by weeks. Readings should be done prior to each class.

I. Introduction to Course (Sept 7)

- About the Professor, the students, and the course;
- Introduction to Technology Policy

W Introduction to Research Project Templates

W Quick Write- What are your initial thoughts about what would be some appropriate topics; what is a reasonable scope, and what is your assessment of the feasibilities of each?

W Structure of Academic Writing

Assignment for next week: Bring a short 1-2 page summary of the topic you intend to pursue, for peer review and for my feedback.

II. Importance of Technology to Politics, Economics, and Business (Sept 14)

Readings: -Bart Verspagen, "Innovation and Economic Growth," pp.487-513 in Jan Fagerberg, David C. Mowery and Richard R. Nelson, *The Oxford Handbook of Innovation*, NY: Oxford U Press, 2005 available on-line through library catalogue and HD 53 094 2005

-Richard G. Lipsey, Kenneth I. Carlaw and Clifford Bekar. *Economic transformations: general purpose technologies and long-term economic growth*, pp. 1-15 & 25-49 NY: Oxford U. Press, 2005, available on-line through library catalogue and HC 79 T4 L57 2005

W Peer Review Exercise- on Topic Choice Scope and Feasibility

W Walkthrough of preliminary proposal

W Possible Research Sources for Technology Topics

III. Schumpeter and Vernon- Classic Innovation Theory (Sept 21)

Readings: Joseph Schumpeter, *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*, NY: McGraw-Hill, 1964 (written in 1939), pp. 59-83 & 108-115, HB 3711 S392 (1)

- Vernon, R., 1966. International investment and international trade in the product cycle. Q J Econ 80, 190–207, available through library subscription.

Assignment due: preliminary proposal and literature review

-Bring copy of Schumpeter and Vernon to class

W What are the elements of a good analytical framework? Group exercise using this week's readings.

IV. Technology Diffusion (Sept 28)

Readings: -Richard Lipsey, Technology and Globalization, working paper, will be sent.

-Everett M. Rogers, *Diffusion of Innovations*, 5th ed. Toronto: Free Press, pp.11-31, 210-18, 337-62 (2).

W Discussion of preliminary proposal; group exercise on how to improve proposals

W What is Required for a Literature Review, with walkthrough example

V. National Innovation Systems Approach (Oct 5)

Readings:

-Richard R. Nelson, "Capitalism as an Engine of Progress," pp.52-83 in Nelson, *The Sources of Economic Growth*. Cambridge: Harvard U Press, HD 75 N45 1996 (3)

-Elias G. Carayannis and David F. J. Campbell, A "Mode 3" Systems Approach for Knowledge Creation, Diffusion, and Use: Towards a Twenty-First-Century Fractal Innovation Ecosystem," 71-111 in Carayannis and Christopher Ziemnowicz, *Rediscovering Schumpeter*, NY: palgrave macmillan, 2007, HC 79 T4 R4255 2007 (4)

W Identifying and structuring paradigms for a Literature review, group exercise

Assignment: Bring copy of literature review for peer review next week

VI. Measurements of Science and Technology Performance (Oct 12)

In class exercise

-Lea Velho, "Science and Technology in Latin America and the Caribbean: An Overview," UNU Feb 2004, will be sent

-OECD, *Science, Technology, and Industry Scoreboard*, latest free on-line edition avail. through library database (link will be sent)

-Hira, Learning from the Tigers, article will be sent

W Peer Review of Literature Reviews

VII. How Firms Succeed (Oct 19)

Readings: -Michael E Porter, "The Five Competitive Forces that Shape Strategy" and "The Competitive Advantage of Nations," pp.3-35 & 172- 211 in *On Competition*, Boston: Harvard Business Review, HF 1414 P67 2008 (5)

-Sandor Boyson and Chaodong Han, 2008. "Eras of enterprise globalization: from vertical integration to virtualization and beyond," 26-57 in Juan J. Palacios, *Multinational Corporations and the Emerging Network Economy in Asia and the Pacific*, NY: Routledge, HD 62.4 M838 2008 (6).

-Constantine Markides, "Racing to be Second: Innovation through Imitation," 211-221 in Julian Birkinshaw, et. al, *The Future of the Multinational Company*, West Sussex: Wiley, HD 2755.5 F865 2003 (7).

-Seishi Kimura, Changing Context of Firm-based Late Industrialization in the Global Business Transformation, 33-78 in *The Challenges of Late Industrialization: The Global Economy and the Japanese Commercial Aircraft Industry*, NY: Palgrave macmillan, HF 1414 K515 2007 (8).

Assignment due: Literature review

W How to move from a literature review to an outline

Assignment: Bring outline of your paper for peer review next week.

VIII. Policy Challenges in a Development Context (Oct 26)

Readings:

-Atul Kohli. 2004. States and Industrialization in the Global Periphery, 1-24 in *State-Directed Development: Political Power and Industrialization in the Global Periphery*. NY: Cambridge U. Press, HD 3616 D452 K64 2004 (9).

-Peter Evans, State Structures, Government-Business Relations, and Economic Transformation, 63-87, Sylvia Maxfield and Ben Ross Schneider, eds. *Business and the State in Developing Countries*. Ithaca: Cornell U. Press, HD 3616 D452 B87 1997 (10).

-William F. Maloney, "Missed Opportunities: Innovation and Resource-Based Growth in Latin America," *Economia*, Fall 2002, 111-65, available through library subscription.

W Discussion of literature reviews

W: Outline circulation for peer review

IX. Debate on Technology Policy (Nov 2)

Debate topic 1: Should the state have an active policy to favour certain firms or industries in cutting edge technologies?

Debate topic 2: What strategy should developing countries follow in regard to technology?

Should they prioritize basic needs or technology acquisition? Is it realistic and desirable for them to try to catch up to Northern technologies?

Assignment due: Outline for Paper

W Moving from Outline to Drafting the Paper

X. Application to Public Policy and Case Study Examples from the Developing World (Nov 9)

-Hira, Nokia and Embraer articles with cases will be sent

-Linsu Kim, "Crisis construction and organizational learning: Capability building and catching up at Hyundai Motor," *Organizational Science* 9 (1998): 506-21 available through library subscription.

W Checklists for your preparing your final paper

W Tips on Presenting a Research Paper

XI. Site Visit or Guest Speaker (Nov 16)

W Rough Draft of Final Paper Due

XII. Student Presentations (Nov 23)

W Discussion of Rough Drafts

XIII. Student Presentations and Final Paper Due (Nov 30)

AN IMPORTANT REMINDER:

Plagiarism involves using another author's words without attribution or otherwise presenting another person's work as one's own. It is a fraudulent and serious academic offence that will result in a severe academic penalty. Also, close paraphrasing of another author's work & self-plagiarism, including submitting the same, or substantively the same, work for academic evaluation more than once, are unacceptable practices that will result in a severe academic penalty.

The university policies on academic honesty are available at <http://www.sfu.ca/policies/teaching/t10-02.htm> and <http://www.sfu.ca/policies/teaching/t10-03.htm>.

The Department of Political Science's interpretation of this policy can be found at http://www.sfu.ca/politics/undergrad/ug_misc.html, and is available in hard copy format outside our General Office. All students are responsible for familiarising themselves with these policies.

A helpful SFU Library tutorial on plagiarism is at <http://www.lib.sfu.ca/researchhelp/tutorials/interactive/plagiarism/tutorial/introduction.htm>

The DOs and DON'Ts of AVOIDING PLAGIARISM

Do not:

- submit an entire paper or part(s) of a paper or papers that has been written or researched by any other person(s);
- submit a paper as an assignment that has been bought from another person or from a 'paper mill' or essay service;
- submit a paper or other written assignment that has been submitted at another time or for a different course by yourself or any other student or former student;
- submit material that has been downloaded from a website, without acknowledging (using appropriate citation style) that you have done so;
- take someone else's idea(s) and represent it/them as your own;
- copy any text verbatim, or with only slight variation from the original text, without using quotation marks and documenting the source with proper citation style;
- do not closely paraphrase another's material; either paraphrase completely in your own words, or cite as a direct quotation using quotation marks (in either case, give full credit and details regarding authorship and location of the original material);

Do:

- learn how to cite material properly (there are many good guides on this, including the departmental one);
- use a recognized citation style (eg. APA, MLA, Chicago), according to instructions given by the course instructor, and be consistent in the use of the style throughout any single piece of written work;
- carefully read and make sure you understand the university's policy on academic honesty;
- ask the instructor of this course or other faculty members if you have any questions about plagiarism.