

Revised March 27, 2020

Economics 477 (L01) (Regulatory Economics)

Instructor: Jeffrey Church
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Lecture Location: SA 121
Lecture Days/Time: T 17:00-19:45

Office: SS 442
Office Hours: W 14:00-16:00

(Winter 2020)

Course Description:

The objective of this course is to introduce regulatory economics, defined as price and entry regulation. Price and entry regulation occur when the state restricts who can provide services and approves the terms (price, quality, product variety etc.) of service. The course will consider four broad topics: (i) Why regulate? (ii) How should firms/industries be regulated? (iii) How are firms actually regulated? and (iv) a discussion of the costs and benefits of opening up network industries to competition. There will be a focus on the regulation and structure of the Alberta Interconnected Electric System (AIES), regulation of telecommunication by the Canadian Radio-Television and Telecommunications Commission (CRTC), and oversight of pipelines by the National Energy Board (NEB).

Course Learning Outcomes:

Students who successfully complete this course will:

- (i) Understand and appreciate the history, rationale, and functioning of regulatory institutions. This involves having some familiarity with the regulation and institutions in a number of sectors, including:
 - CRTC and telecom in Canada.
 - Electricity in Alberta.
 - NEB and pipelines in Canada.
- (ii) Understand and appreciate key principles, theories and ideas in the regulatory economics literature including:
 - The rationale for regulation encompassing both public interest justifications and the economic theory of regulation. The public interest justification focuses on how the intersection of natural monopoly technology and transaction costs provides a rationale for efficiency enhancing regulation. The economic theory of regulation views regulation and its institutions as the result of political pressure to allocate the government's coercive power to create and redistribute rents.
 - Rate making principles, including Ramsey, peak load, and nonlinear pricing.
 - Regulatory risk, stranded costs, and incentives to invest.
 - The effect of asymmetries of information on regulation.
 - The costs, benefits, and issues associated with introducing competition into network industries by unbundling services and creating regulatory access to wholesale services to create competition at retail.
 - The costs and benefits of vertical integration.

- (iii) Be able to apply the key principles in the regulatory literature to analyse, critique, and craft regulatory institutions, processes, and policies.
 - Assess the strengths and weaknesses of different regulatory policies.
 - Assess the strengths and weaknesses of different regulatory institutions.
- (iv) Develop skills in researching, writing, and presenting analysis of regulatory issues.

Course Outline:

1. Why Regulate? The Rationale for Regulation and Theories of Regulation
2. Optimal Pricing of Natural Monopoly
3. Regulation Under Asymmetric Information
4. Regulatory Regimes
5. Access Pricing and Introducing Competition into Network Industries
6. Regulation in Practice (Electricity, Pipelines, and Telecommunications)

A detailed reading list and course outline will be provided.

Prerequisites/corequisites:

Econ 471

Required Textbook(s):

Church, J., and R. Ware. 2000. *Industrial Organization: A Strategic Approach*. San Francisco: McGraw-Hill.

[Required for certain chapters. Available online at
<http://homepages.ucalgary.ca/~jrchurch/page4/page5/page5.html>.]

Decker, C. 2015. *Modern Economic Regulation*. Cambridge: Cambridge University Press.

Books on Reserve:

Armstrong, M., S. Cowan, and J. Vickers. 1994. *Regulatory Reform: Economic Analysis and British Experience*. Cambridge, Mass.: MIT Press.

Biggar, D. and M. Hesamzadeh. 2014. *The Economics of Electricity Markets*. United Kingdom: Wiley.

Bonbright, J., A. Danielsen, and D. Kamerschen. 1988. *Principles of Public Utility Rates*. Second Edition. Arlington, Virginia: Public Utilities Reports.

Berg, S., and J. Tschirhart. 1986. *Natural Monopoly Regulation*. Cambridge: Cambridge University Press.

Cave, M., S. Majumdar, and I. Vogelsang, ed. 2002. *Handbook of Telecommunications Economics*. Volume 1, Amsterdam: Elsevier.

Cave, M., S. Majumdar, and I. Vogelsang, ed. 2005. *Handbook of Telecommunications Economics*. Volume 2, Amsterdam: Elsevier.

Crew, M.A, and D. Parker. 2005. *International Handbook of Regulation*. Northampton, MA: Edward Elgar.

Decker, C. 2015. *Modern Economic Regulation*. Cambridge: Cambridge University Press.

The Economist. 2018. *Style Guide*. 12th edition. New York: Hachette Book Group.

Giacchno, L., and J. Lesser. 2011. *Principles of Utility Corporate Finance*. Vienna, Virginia: Public Utilities Reports.

Glachant, J-M., D. Finon, and A de Hauteclocque, eds. 2011. *Competition, Contracts, and Electricity Markets*. Northampton, MA: Edward Elgar.

Griffin, J.M., and S. Puller. 2005. *Electricity Deregulation: Choices and Challenges*. Chicago: University of Chicago Press.

- Harris, C. 2006. *Electricity Markets*. John Wiley: West Sussex, UK.
- Leautier, T.-O. 2018. *Imperfect Markets and Imperfect Regulation*. Cambridge: MIT Press.
- Leveque, F., ed. 2006. *Competitive Electricity Markets and Sustainability*. Northampton, MA: Edward Elgar.
- Levy, B., and P. Spiller, eds. 1996. *Regulations, Institutions, and Commitment*. Cambridge: Cambridge University Press.
- Maille, P. and B. Tuffin. 2014. *Telecommunication Network Economics*. Cambridge: Cambridge University Press.
- Makhholm, J. 2012. *The Political Economy of Pipelines*. Chicago: University of Chicago Press.
- Modern Language Association. 2016. *MLA Handbook*. 8th edition. Modern Language Association.
- Newbery, D. 2000. *Privatization, Restructuring, and Regulation of Network Utilities*. Cambridge: MIT Press.
- Picard, R. and S. Wildman, eds. 2015. *Handbook on the Economics of the Media*. Northampton, Mass: Elgar.
- Rose, N., ed. 2014. *Economic Regulation and Its Reform*. Chicago: University of Chicago Press.
- Smith, M. and R. Telang. 2016. *Streaming, Sharing, Stealing*. Cambridge: MIT Press.
- Spulber, D. and C. Yoo. 2009. *Networks in Telecommunications: Economics and Law*. Cambridge: Cambridge University Press.
- Stoft, S. 2002. *Power System Economics: Designing Markets for Electricity*. Piscataway New Jersey: IEEE Press
- Train, K. 1991. *Optimal Regulation: The Economic Theory of Natural Monopoly*. Cambridge: The MIT Press.
- Villadsen, B. et al. 2017. *Risk and Return for Regulated Industries*. London: Academic Press.

Desire2Learn:

This course will make use of the Desire2Learn (D2L) platform. Students who are registered in the course can log on at <http://d2l.ucalgary.ca> through their student centre. Please note that D2L features a class e-mail list that may be used to distribute course-related information. These e-mails go to your University of Calgary e-mail addresses only.

Term Project:

The term project in this course can **EITHER** be an economic analysis of a major regulatory decision or a research project on regulatory policy. For a case analysis students are expected to use the principles/theories introduced in class to consider whether the decision in the case is consistent with efficiency. For a research project students are expected to *use economics to make a policy recommendation*. This entails using economics to determine the relative efficiency of different options to address a problem and make a recommendation. In both cases the term project is written in stages, with feedback and opportunity to revise. Only the final submission is graded. Detailed instructions on the term project will be provided.

Summer Internship in Regulatory Economics:

The Department of Economics Summer Internship Program in Regulatory Economics has placed students in summer positions since 2000. Students have been placed at a large number of different organizations

and firms including the Alberta Electric System Operator (AESO), Alliance Pipeline, ATCO, Department of Energy (Alberta), Capital Power, Alberta's Market Surveillance Administrator (Electricity), ENMAX, Enbridge, EPCOR, Kinder Morgan, the National Energy Board, TransCanada Energy and TransCanada Pipelines (TCPL), the Alberta Utilities Commission (AUC), the Utilities Consumer Advocate (UCA), and Telus.

For students to be eligible for the Summer Internship Program, they must have completed the senior courses in Industrial Organization (Econ 471) and Regulatory Economics (Econ 477), three years of studies, and have a grade point average of at least 3.0 over their last 15 courses and in the required course sequence in industrial organization. Recommended courses include a course in Excel (Econ 311), econometrics (Econ 495), and the economics of competition policy (Econ 571).

Grade Determination and Final Examination Details:

MIDTERM EXAM	20%
FINAL EXAMINATION	40%
TERM PROJECT	<u>40%</u>
	100%

The official grading system will be used. See <http://www.ucalgary.ca/pubs/calendar/current/f-1-1.html>.

Students must receive a passing grade on the final exam to pass the course.

If a student's letter grade on the final exam exceeds their midterm(s) letter grade, the weight of the midterm(s) is (are) transferred to the final exam. The student must have written the midterm(s) or provided supporting documentation for the absence(s) such as a medical note or statutory declaration.

As per the Writing Across the Curriculum Statement in the Calendar, writing and grading thereof will be a factor in the evaluation of student work. See <https://www.ucalgary.ca/pubs/calendar/current/e-2.html>.

Any student work which remains undistributed after the last day of classes will be available to students through the instructor's office during the instructor's office hours.

Confirming to University policy in response to the COVID-19 virus the final exam will be an open book, take-home final, administered through D2L. It will be due at the same time your Registrar scheduled final exam was to end, i.e., 14:00 April 18. It will be available 24 hours before that on D2L and it will be handed in using Dropbox on D2L.

If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam <https://www.ucalgary.ca/pubs/calendar/current/g-6.html>. Under no circumstance will this be accommodated by the Department.

Tests and exams WILL NOT involve multiple choice questions.

Programmable calculators, cellphones, textbooks, course notes, and other electronic devices will not be allowed during the writing of tests or final examinations. Students are reminded that simply being able to access their cellphone during an exam is academic misconduct.

The exact date for the in-class midterm will be announced at least one week in advance

THERE WILL BE NO MAKEUP OR DEFERRED QUIZZES/TESTS/EXAMS under any circumstances, nor may the quizzes/tests/exams be written early. Students unable to write the quizzes/tests/exams because of documented illness, family emergency, religious observance, or university-sanctioned event will have the weight shifted to the final examination; otherwise a grade of zero will be assigned.

Reappraisal of Grades and Intellectual Honesty:

For Reappraisal of Graded Term Work, see Calendar I.2

<http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

For Reappraisal of Final Grade, see Calendar I.3

<http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

Statement of Intellectual Honesty, see Calendar K.4

<http://www.ucalgary.ca/pubs/calendar/current/k-4.html>

Plagiarism and Other Academic Misconduct, see Calendar K.5

<http://www.ucalgary.ca/pubs/calendar/current/k-5.html>

Academic Accommodations:

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services. SAS will process the request and issue letters of accommodation to instructors. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor. The full policy on Student Accommodations is available at <http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>.

Freedom of Information and Protection of Privacy (FOIP) Act:

Personal information is collected in accordance with FOIP. Assignments can only be returned to the student and will be accessible only to authorized faculty and staff. For more information, see <http://www.ucalgary.ca/legalservices/files/legalservices/faq-students.pdf> and http://www.ucalgary.ca/legalservices/files/legalservices/faq-faculty_0.pdf.

Internet and Electronic Communication Device information:

The use of cell phones for any purpose in class is prohibited. Computers and tablets may be used for note taking only unless otherwise authorized by the instructor.

Copyright Legislation:

See the University of Calgary policy on Acceptable Use of Material Protected by Copyright at www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf. Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

Recording of Lectures:

Recording of lectures is prohibited, except for audio recordings authorized as an accommodation by SAS or an audio recording for individual private study and only with the written permission of the instructor. Any unauthorized electronic or mechanical recording of lectures, their transcription, copying, or distribution, constitutes academic misconduct. See <https://www.ucalgary.ca/pubs/calendar/current/e-6.html>.

Important Dates:

Please check: <http://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html>.

Student Organizations:

Faculty of Arts Students' Association (F.A.S.A.):

Economics Department Representative

Office: SS 803, E-mail: econrep@fasaucalgary.ca and Web: www.fasaucalgary.ca.

Society of Undergraduates in Economics:

<https://www.ucalgarysue.com/>.

Society of Undergraduates in Economics is a student run organization whose main purpose is to assist undergraduate economics students to succeed both academically and socially at the University of Calgary. Services include access to the exam bank, career events such as Industry Night and information sessions, mentorship programs, and social events for members. They invite you to join by contacting SUE at societyofundergradsineconomics@gmail.com.

Faculty of Arts Program Advising and Student Information Resources:

- Have a question, but not sure where to start? The Arts Students' Centre is your information resource for everything in Arts! Drop in at SS102, call them at 403-220-3580, or email them at artsads@ucalgary.ca. You can also visit the Faculty of Arts website at <http://arts.ucalgary.ca/undergraduate>, which has detailed information on common academic concerns, including program planning and advice.
- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at 403-210-ROCK [7625] or visit them in the MacKimmie Library Block.

Student Support and Resources:

- See <https://www.ucalgary.ca/registrar/registration/course-outlines> for information on campus mental health resources, the Student Ombuds' Office, Student Success Centre, Safewalk, and Emergency Evacuation and Assembly.
- Online writing resources are available at <https://ucalgary.ca/student-services/student-success/writing-support>.

Notes:

1. Students are responsible for all assigned material, e.g., supplementary material posted on D2L, regardless of whether or not the material was covered in class.

JRC

2019-12-13

UNIVERSITY OF CALGARY

DEPARTMENT OF ECONOMICS

ECONOMICS 477

AMENDMENT TO COURSE OUTLINE

J. Church

Winter 2020

Confirming to University policy in response to the COVID-19 virus the final exam will be an open book, take-home final, administered through D2L. It will be due at the same time your Registrar scheduled final exam was to end, i.e., 14:00 April 18. It will be available 24 hours before that on D2L and it will be handed in using Dropbox on D2L. This replaces the existing statement in the course outline: “The final examination will be comprehensive, scheduled by the Registrar, held in a classroom, and last 2 hours.”