

Economics 329 (L01) - Electricity Markets

Instructor: Blake Shaffer
Phone
Email: blake.shaffer@ucalgary.ca

Lecture Location: ST 139
Lecture Days/Time: TR 9:30-10:45

Office: SS 444
Office Hours: TR 10:45-12:00

Fall 2019

Course Description:

Economic analysis of the deregulated electric power industry including the pricing of power, energy and capacity, power supply and demand, market structure, market architecture, and the design and testing of market rules.

Course Outcomes:

Students will learn why electricity markets pose interesting economic problems, the solutions proposed and how basic economic theory can shed light on real world problems.

Course Outline:

Electricity has some unique characteristics that pose unique economic problems. Some jurisdictions have sought to use markets (deregulation) to tackle these problems rather than central planning (regulation), other jurisdictions have not. Even within market based systems there are important differences in structure and market rules. Not all the drivers are economic, some are technical, some historical and some political. The interplay between all these factors can be complex, controversial and, often, poorly understood.

To make the course as accessible as possible the focus will be on using the Alberta Electricity Market as a case study, comparing and contrasting this to the approaches used elsewhere. As we approach the fall of 2019 the Alberta Electricity Market is in the midst of a major transition. A phase out of coal generation is underway along with an expected increase in generation from renewable sources. The market design itself has been the subject of much change, with the introduction and subsequent revocation of a capacity market. All of these changes make for an exciting time to be studying electricity markets.

Topics covered in the course will include:

- Fundamentals about the electric system and electric generation
- How the Alberta electricity market works: Uniform clearing price auctions
- Ensuring reliability: How do markets provide security and adequacy?
- Coal phase-out and support for new renewable generation: Correcting for market failures?
- The interplay between climate policies and electricity markets: In Alberta and beyond
- New frontiers: The potential role of demand-side management, energy storage and electric vehicles

There is no required textbook for this course. Government and industry publications will be used as appropriate; these will be identified in class. Interested students are welcome to consult with the instructor for additional suggested readings.

Prerequisites/corequisites:

Econ 201 and 203

Required Textbook(s):

None

Recommended Textbook(s):

Stoft, Steven (2002), Power system economics. (available electronically via library.ucalgary.ca)

Books on Reserve:

None

Field Trip:

A field trip is planned during class hours on **October 24** to visit either a trading floor or Alberta's system control room in downtown Calgary. Transportation will be left to students. The location will be easily accessible via C-train from main campus (University Station). The field trip will fit within class hours, including travel time to/from main campus, to accommodate those with classes immediately preceding or following this class.

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.

Grade Determination and Final Examination Details:

Grades will be determined based on two assignments (approximate due dates late-September and late-November), a midterm exam (October 22) and a final exam (to be scheduled by the Registrar during the final exam period of December 9-19).

ASSIGNMENTS (2)	30%
	(15% each)
MIDTERM EXAM	25%
FINAL EXAM	45%
	<hr/>
	100%

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

A passing grade on any particular component of the course is not required for a student to pass the course as a whole.

If a student's letter grade on the final exam exceeds their midterm letter grade, the weight of the

midterm is transferred to the final exam. The student must have written the midterm 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](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.

The final examination will be comprehensive, scheduled by the Registrar, held in a classroom, and last 2 hours. 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 www.ucalgary.ca/registrar/exams/deferred_final. Under no circumstance will this be accommodated by the Department.

Tests and exams WILL NOT involve multiple choice questions.

Non-programmable calculators WILL be allowed during the writing of tests or final examinations.

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 date for the in-class midterm will be October 22.

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 Dishonesty, 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.

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.

BCS

2019-08-12