

## Economics 329 (L01) Electricity Markets

Instructor: James Conville & Richard Kendall-Smith  
Phone: N/A  
Email: [jconvil@ucalgary.ca](mailto:jconvil@ucalgary.ca), [rpkendal@ucalgary.ca](mailto:rpkendal@ucalgary.ca)

Lecture Location: KNB 126  
Lecture Days/Time: TR 17:00 – 18:15

Office: SS 338  
Office Hours: TR 15:30 – 16:30

Fall 2023

### 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 Learning 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 is a good with unique physical, environmental, and social challenges. Economic theory and principles provide insight into understanding these challenges and can be used to inform policy decisions. Some jurisdictions use central planning to tackle these challenges while others use markets that can vary considerably in their rules and structure. These challenges will be examined in this course using economic theory and the Alberta electricity market as a case study.

Topics covered in the course will include (dates for topics may be subject to change):

<u>Week</u>	<u>Week Beginning (Tuesday)</u>	<u>Topic</u>	<u>Items Due (Date)</u>
1	September 5, 2023	Introduction to Electricity Markets & Production Technologies	
2	September 12, 2023	Costs of Production	
3	September 19, 2023	Demand	
4	September 26, 2023	Equilibrium & Efficiency	
5	October 3, 2023	Offers, Strategic Behaviour & Market Power	
6	October 10, 2023	Reliability	Assignment (October 10, 2023, end of class)
7	October 17, 2023	History of the Alberta Market	Midterm Examination (October 17, 2023)
8	October 24, 2023	Adequacy	
9	October 31, 2023	Nature of the Grid	

10	November 7, 2023	Carbon & Climate Policy	
11	November 14, 2023	<i>Fall Reading Week (No Classes)</i>	
12	November 21, 2023	Regulation & Market Design	
13	November 28, 2023	Retail Markets	Briefing Note (November 28, 2023, end of class)
14	December 5, 2023	Course Review	

**Prerequisites/Corequisites:**

Economics 201.

**Required Textbook(s):**

There is no required textbook.

**Recommended Textbook(s):**

Biggar, D. R., & Hesamzadeh, M. R. (2014). *The Economics of Electricity Markets*. John Wiley & Sons Ltd.  
 Glachant, J-M, Joscow, P. L., & Pollitt M. G. (Eds.). (2021). *Handbook on Electricity Markets*. Edward Elgar Publishing, Inc.

Hunt, S. (2002). *Making Competition Work in Electricity*. John Wiley & Sons, Inc.

**Required Access to Technology:**

Excel, access to Internet.

**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:**

Assignment	15%
Midterm	25%
Briefing note	20%
Final Exam	<u>40%</u>
	100%

**Examination Details:**

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 date for the in-class midterm will be October 17, 2023.

Students will be required to write a one-page briefing note in which some aspect of electricity markets is discussed. The instructor will provide further detail in class about the structure of the note and acceptable topics. The briefing note will be due on November 28, 2023.

**Grading Policies:**

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. Students committing academic misconduct during the final exam will not receive a passing grade for the course.

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.

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>.

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.

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 <https://www.ucalgary.ca/pubs/calendar/current/g-3-4.html>. Under no circumstance will this be accommodated by the Department.

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.

**Reappraisal of Grades:**

*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>

**Academic Misconduct and Intellectual Honesty:**

Academic Misconduct refers to student behavior that compromises proper assessment of students' academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

*Statement of Intellectual Honesty, see Calendar K.3*

<https://www.ucalgary.ca/pubs/calendar/current/k-3.html>

*Plagiarism and Other Academic Misconduct*

<https://ucalgary.ca/student-services/student-success/learning/academic-integrity>

**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

<https://www.ucalgary.ca/legalservices/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf> and <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/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

<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/faq-privacy-faculty-members.pdf> and <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/faq-privacy-students.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 <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Acceptable-Use-of-Material-Protected-by-Copyright-Policy.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>.

**Instructor Intellectual Property:**

Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

**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](mailto:econrep@fasaucalgary.ca) and Web: [www.fasaucalgary.ca](http://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 [sue@ucalgarysue.com](mailto:sue@ucalgarysue.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](mailto: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 Tower.

**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.
2. Course material dealing with a particular assignment will typically be covered in class at least 7 days before the assignment is due; thus, assignments can be completed at any time up to, and including, the due date. Given these factors, only situations where someone can document illness or domestic affliction for an extended period (i.e., the entire 7 days prior to the due date) would possibly warrant shifting the assignment weight to the final exam. Furthermore, technical problems can be expected to occur with computer systems (and internet availability) so it may be a good idea to not wait until the last minute to submit your assignment.

JC & RKS

2023-08-10