University of Victoria | Economics

ECON 452 A01
Information and Incentives
Spring 2026; CRN 21052

ECON 551 A01
Information and Incentives
Spring 2026; CRN 21061

1.5 credits, 3 Contact hours (lectures)

Lectures: Mondays, Thursdays 11:30 – 12:50, BEC 363
Instructor: Dr. Daniel Rondeau
Office: BEC 342
E-Mail: rondeau@uvic.ca
Office Hours: Wednesdays 10:30 – 12:30 or by appointment
Brightspace: https://bright.uvic.ca/d2l/home/462429

SPECIAL SCHEDULING NOTICE:

Because of a planned surgery, I will be away for two weeks starting February 26. To cover this time, the semester's schedule is affected in the following way:

1) There will be a midterm exam on February 26, in class. This will be invigilated by a student, so there will not be any opportunity for clarification questions!
2) There will be no in-person lectures on March 2, 5, 9. Instead, three 80 minute lectures will be pre-recorded and available on Brightspace during my absence. YOU WILL BE RESPONSIBLE TO COVER THIS MATERIAL but we will have a review lecture upon my return to go over the main results and answer questions.

UVic Land Acknowledgement

We acknowledge and respect the Lək̓ʷəŋən (Songhees and Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.

Course Content

Course Calendar Entry: *Introduction to the incentive problems that arise from asymmetric information in a game-theoretic framework. Assumes a knowledge of basic game theory. Topics covered include moral hazard, adverse selection and mechanism design, illustrated in the context of applications drawn from a variety of areas, including industrial organization, public economics and labour.*

While the calendar entry assumes basic knowledge of game theory, the course will begin with a review of basic and useful concepts and solution methods for static and dynamic games of complete information. This shall ensure that all students are on the same footing before we start exploring games and incentive questions under incomplete and imperfect information.

The central objective of the course is to gain an appreciation for how incomplete and/or imperfect information affect the decisions of individual economic agents, and by implication, how market outcomes may not correspond to the standard economic theory developed under assumptions of perfect and complete information.

A few lectures will take place in one of UVic's computer labs. This will give us the opportunity to play computer-mediated games and gain hands-on experience with specific decision problems that arise when agents must interact without complete or perfect information.

The list of topics below is ambitious. Since this is only the second time I teach this course, I have a good sense of what we will be able to cover, although it is also my plan to make some adjustments so that we can get to more of the last topics and applications compared to last year. Last year's lecture notes are already available on Brightspace, but I will update them as we proceed.

Topics

Introduction

- Information in games and market failure
- Types of information

1. Review of game theory concepts (under complete information)
    - Players, strategies, payoffs
    - Static games of complete information – Nash Equilibrium and Mixed Strategy Nash Equilibrium
    - Dynamic games of complete information – Subgame Perfect Nash Equilibrium

2. Static Games of incomplete information (Bayesian Games)
    - Matrix Games - Bayesian Nash Equilibrium defined
    - Large Linear Games
    - A reinterpretation of Mixed Strategy Nash Equilibrium
    - Cournot Competition under Asymmetric Information about firm type
    - Auctions

3. Dynamic Games of Imperfect information
    - Learning and Bayes' rule
    - Perfect Bayesian Nash Equilibrium
    - Perfect Bayesian Equilibrium in Mixed Strategies: 2 card poker

4. Elements of Contract Theory and Mechanism Design
    - Objectives
    - The generic Principal Agent Model
    - Participation constraints
    - Incentive Compatibility constraints
    - Pooling equilibria defined
    - Separating Equilibria defined
    - The Revelation Principle

5. Models of Asymmetric Information and Applications (a selection from as time allows)
    - Adverse Selection with a selection of problems from
        - Goods Quality Market (Lemons)
        - Insurance Market
        - Financial Market
        - Labour Market
    - Moral Hazard with a selection of problems from
        - Insurance Markets
        - Banking/Lending
        - Corporate Governance

    - Government bailouts (Too big to fail!)
- Signaling, screening with a selection of problems from
    - Education
    - Warranties
    - Dividends
    - Certification and audits

Learning Outcomes

At the end of the course, students should be able to

- Identify different types of information
- Know how to formally incorporate information asymmetry game models
- Understand the difference between game theoretic solution concepts (Nash Eq.; Subgame Perfect NE, Mixed Strategy NE, Bayeasian NE and Perfect Bayesian NE), where they apply and how to find them.
- Solve simple games of incomplete and imperfect information
- Understand the fundamental objectives and role of contract theory and mechanism design.
- Explain the difference between adverse selection, moral hazard, and signaling games
- Analyze how markets are affected by adverse selection and understand how actions by a principal can remediate information asymmetry
- Analyze how markets are affected by moral hazard how actions by a principal can remediate information asymmetry.

Course prerequisites/corequisites

There is formally no pre-requisites for the course. However, as stated above, the calendar entry "assumes basic knowledge of game theory". To ensure that everyone is on the same footing, the first two weeks will review the central methods of game theory as they apply to games of complete.

Textbook

The course will rely on a number of chapters from a variety of textbooks:

Bonanno, G. 2019. Uncertainty, Risk and Information: an economic analysis, independently published. Available for free download at https://faculty.econ.ucdavis.edu/faculty/bonanno/PDF/URI_book.pdf

Bonanno, G. 2018. Game Theory. independently published. Available for free download at https://faculty.econ.ucdavis.edu/faculty/bonanno/PDF/GT_book.pdf

Gibbons, R., 1992. *Game Theory for Applied Economists*. Princeton University Press.

Laffont, J.J. and Martimort, D., 2009. The theory of incentives: the principal-agent model. In *The theory of incentives*. Princeton university press.

Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). *Microeconomic theory*. Oxford University Press.

Rasmusen, E., 2007. *Games and information: An introduction to game theory*. Blackwell publishing.

Salanié, B., 2005. *The economics of contracts: a primer*. MIT press.

Select papers may also be selected as required reading as the semester proceeds.

Brightspace

Brightspace will be used extensively for the course. All students are expected to be fully functional with the system. Lecture notes will be posted in *Brightspace.* Lecture notes are not necessarily exhaustive. In particular, class discussions may leas to additional material be presented only in lectures and not appear in the notes. Attendance to lectures is an integral part of succeeding in this course.

All announcements will be posted via *Brightspace*.

Grading

The course grade is determined as follows:

Grading Element	Weight	Date
Quiz on Game Theory	15%	Thursday January 22 in class
Mid Term Exam	25%	Thursday February 26 in class
Paper no.1	10%	Monday March 16 before the beginning of lecture.
Paper no.2	10%	Thursday April 2 before the beginning of lecture.
Final Examination	40%	TBD (48 hour take home)

The instructor reserves the right to require a student to meet for an oral examination of the submitted paper. The objective of such an oral examination is to verify a student's understanding of all parts of the written paper submitted. Oral examinations will result in a pass/fail outcome. A pass will leave the paper's original assigned grade. A fail will result in a grade of 49% or lower on the paper.

How to Succeed in this course

The most difficult aspect of game theory and its applications is NOT mathematics. One becomes adept at game theory by constantly thinking strategically. This required developing a certain mindset for formal strategic thinking that few of us get exposed to until we take courses on the subject. Game theory is far more than a set of mathematical tricks, and developing a mindset is best accomplished by immersing oneself in the logic of the problems at hand.

Thus, the best way to ensure success is to constantly read and solve new problems. To that effect, I will post new problems to Brightspace on a regular basis. DO NOT LET THEM PILE UP. Do them as they are presented. This will help you keep up with the material but also identify where you need review the material or come to office hours. Since we will be building our knowledge bit by bit, it will be best to keep up to avoid bottlenecks and panic prior to exams!

Mandatory/Essential Course Components

All elements of grading are compulsory and must therefore be completed in order to obtain a passing grade.

Grading Scale

A+	A	A-	B+	B	B-	C+	C	D	F or N
90-100	85-89	80-84	77-79	73-76	70-72	65-69	60-64	50-59	0-49

Students should review the University's more detailed summary of grading.

Missing Assessments

Should students encounter a situation where they miss an exam or cannot submit an assignment at its due date, they may qualify for an academic concession. Students are required to indicate the specific grounds on which they are requesting an academic concession and to provide a justification outlining the impact of the circumstances on their ability to complete course requirements. For in-course extensions, please fill in the form and follow the instructions on the form *[or specify alternative means of communicating a request such as filling in a request on Brightspace]*. I will not respond to informal requests of academic concessions. *[Note any automatic academic concessions such as putting the weight of a missed midterm for a legitimate reason on the final, dropping the two worst grades of quizzes etc.]* In case you miss the final exam, fill in a request for a deferral.

Students are advised not to make work or travel plans until after the examination timetable has been finalized. Students who wish to finalize their travel plans at an earlier date should book flights that depart after the end of the examination period. Students do not qualify for an academic concession if travel plans conflict with the examination.

Course Policies

This course adheres to the Undergraduate Course Policies of the Department of Economics that deal with the following issues:

- Academic concessions
- Academic integrity (plagiarism and cheating)
- Attendance
- Grading
- Inclusivity and diversity
- Late adds
- Late assignments
- Repeating courses
- Review of an assigned grade
- Sexualized violence prevention and response
- Students with a disability
- Term assignments and debarment from examinations
- Travel plans
- Waitlists

The following policies are explicitly included because of their importance:

Waitlist Policies

- Instructors have no discretion to admit waitlisted students or raise the cap on the course.
- Students on the waitlist should discuss with the instructor how to ensure they are not behind with coursework in the event they are admitted.
- Registered students who do not participate as specified in this outline during the first 7 calendar days from the start of the course may be dropped from the course.
- Registered students who decide not to take the course are responsible for dropping the course and are urged to do so promptly out of courtesy toward waitlisted students.
- Waitlist offers cease after the last date for adding courses irrespective of published waitlists.

Academic Integrity

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. Students are expected to observe the same standards of scholarly integrity as their academic and professional counterparts. A student who is found to have engaged in unethical academic behaviour, including the practices described in the Policy on Academic Integrity in the University Calendar, is subject to penalty by the University.

Review What is Plagiarism for the definition of plagiarism. Note: Submitted work may be checked using plagiarism detection software.

Student Code of Conduct

The Humanities, Science, and Social Sciences Faculties have adopted this Student code of conduct. Please, review.

University Policies

- University Calendar - Section "Information for all students"
- Creating a respectful, inclusive and productive learning environment
- Accommodation of Religious Observance
- Student Conduct
- Non-academic Student Misconduct
- Accessibility
- Diversity / EDI
- Equity statement
- Discrimination and Harassment Policy
- Policy on Human Rights, Equity and Fairness - The University is committed to promoting, providing and protecting a positive, supportive and safe learning and working environment for all its members.

Sexualized Violence Prevention & Response

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. Students are encouraged to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp . If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Contact svpcoordinator@uvic.ca.

Resources for Students

UVic Learn Anywhere - UVic Learn Anywhere is the primary learning resource for students that offers many learning workshops and resources to help students with academics and learning strategies.

Centre for Accessible Learning - Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, you are free to approach me; however, you must register with the Centre for Accessible Learning (CAL) for formal arrangements to be made. The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Centre for Academic Communication - Offers coaching on **academic integrity**, including preventing accidental plagiarism. Provides support to students with time management, reading, writing, speaking, understanding academic expectations, and other aspects of academic communication as well as creating academic posters, blogposts, PowerPoint slides, and e-portfolios.

Health Services - University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives.

Support Connect - a 24/7 mental health support service for students

•Toll-free (calls from North America): 1-844-773-1427

•International collect calls: 1-250-999-7621

Counselling Services - Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students.

Indigenous Student Services - Indigenous UVic students have access to many sources of support on campus. Before, during and after your time at UVic, you are encouraged to explore programs and services available to you, such as Indigenous counselling services and the Elders in Residence, as well as non-academic programs that may be of interest to you.

International Student Support - The University of Victoria offers a number of resources to support international students as they pursue their studies. UVic's International Centre for Students is the primary office supporting international students on campus at the university-wide level and provides various supportive program through the UVic Global Community Initiative, including a Mentorship Program and Conversation Partner Program.

For academic advising-related questions, students in the Economics Department are also encouraged to meet with the Economics Undergraduate Advisor (Brooklynn Comish-Trimble, ecadvice@uvic.ca) as well as an academic advisor in the Academic Advising Centre early in their studies to help map out a plan to declare a major and complete university program requirements. Other resources include the Centre for Academic Communication and the Math and Stats Assistance Centre.

The International Student Liason in the Economics Department is Dr. Paul Schure who can help you connect with other international and domestic students in the Department. His email address is schure@uvic.ca. Please, reach out if you are interested.

Course Experience Survey (CES)

I value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future.

When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to the CES log-in. You will use your UVic NetLink ID to access the survey, which can be completed on your laptop, tablet or mobile device. I will remind you nearer the time, but please be thinking about this important activity, especially the following three questions, during the course.

What strengths did your **instructor** demonstrate that helped you learn in this course?Please provide specific suggestions as to how the **instructor** could have helped you learn more effectively.Please provide specific suggestions as to how this **course** could be improved.

E-mail Correspondence

Emails should be limited to critical matters, such as inability to attend class, an exam, or prolonged illness, and should include the course name and number in the subject line. Questions on course material should be asked during office hours or in class. The standard format for writing a letter must be used. This means it should begin with a salutation (e.g. Dear….), include full sentences and it must conclude with a signature that includes your **full name and V#** .Text message lingo should not be used.

Use of AI

Use of AI for the writing of papers is severely restricted. Submitted papers should be written in the student's own writing.

Educational Technology involving storage outside Canada

Computer-mediated games are played on a platform with servers at the University of Virginia. When participating, you will be asked to choose a player name that does not identify you. As a result, no personal information will be stored outside of Canada.