# UNIVERSITY OF SASKATCHEWAN

Department of Economics

## ECON 873.3 (02)
### ADVANCED MICROECONOMIC THEORY
T2: 2024/25

## Course Details

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| **Time:** | Monday and Wednesday, 11:30-12:50 |
| **Location:** | ARTS 214 |
| **Prerequisites:** | ECON 800 or equivalent |
| **Website:** | Some materials will be available on Canvas. |

## Description and Expected Learning Outcomes

Contract theory is the field of economics that concerns itself with finding and understanding mechanisms that allow for mutually beneficial trade in situations of information asymmetry. Contract theory addresses a large number of practically important questions, such as: What types of contracts do insurers offer to their clients? Who can get insurance? What salary patterns and career paths should firms offer their employees? What auction mechanism yields the highest return? Who should own a firm?

This course introduces the central concepts and methods used in contract theory. It presents a number of classic results, and equips students with the analytical tools to find efficient solutions for problems under asymmetric information.

## Instructor

Andreas Pollak   Phone: 966-5221
Arts 812   E-mail: a.pollak@usask.ca (preface subject with "ECON873")
**Office Hours:**   Wednesdays, 13:30-14:30, or by appointment

## Textbooks

**Required Textbook:**
Patrick Bolton and Mathias Dewatripont: *Contract Theory*, MIT Press, Cambridge (MA) and London, 2005. [referred to as **BD**]

**Other relevant books:**
Chiappori, P.-A. and B. Salanié (2003), "Testing Contract Theory: a Survey of Some Recent Work" in *Advances in Economics and Econometrics*, vol 1, M. Dewatripont, L. Hansen and S. Turnovsky (eds.), Cambridge University Press.
Fudenberg, and J. Tirole, (1992), *Game Theory*, MIT Press.
Hart, O. (1995), *Firms, Contracts and Financial Structures*, Clarendon Press (chap. 1-4).
Laffont, J.J. and D. Martimort (2002), The Theory of Incentives: The Principal-Agent Model, Princeton University Press.
Salanié, B. (1997), Contract Theory: A Primer, MIT Press

| Tentative Course Outline and Readings |
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1. Introduction
   **BD, Chapter 1**

2. Moral Hazard

   **BD, Chapters 4 and 6**

   Holmstrom, B. (1979). "Moral Hazard and Observability." Bell Journal of Economics: 10:74-91.

   Holmstrom, B. and P. Milgrom (1990), "Multi-Task Principal-Agent Analyses," Journal of Law, Economics and Organization, 7, Special Issue.

   Mirrlees, J. (1999), "The Theory of Moral Hazard and Unobservable Behavior", Review of Economic Studies 66: 3-21.

3. Adverse Selection: Signalling and Screening

   **BD, Chapters 2 and 3**

   Adams, W. and J. Yellen (1976), "Commodity bundling and the burden of monopoly," Quarterly Journal of Economics 90: 475-498.

   Baron, D. and R. Myerson (1982), "Regulating a Monopolist with Unknown Costs," Econometrica, 50(4): 911-30.

   Laffont, J-J and J. Tirole (1986), "Using Cost Observation to Regulate Firms," Journal of Political Economy, 94(3).

   Maskin, E. and J. Riley (1984), "Monopoly with Incomplete Information," Rand Journal of Economics, 15: 171-96.

   Mirrlees, J. (1971), "An exploration in the theory of optimum income taxation," Review of Economic Studies 38: 175-208.

4. Multilateral Contracting: Auctions and Mechanism Design

   **BD, Chapter 7**

   Cremer, J. and R. McLean (1988), "Full Extraction of the Surplus in Bayesian and Dominant Strategy Auctions," Econometrica 56, 1247-1258.

   d'Aspremont, C. and L. Gerard-Varet (1979), "Incentives and Incomplete Information," Journal of Public Economics, 11: 24-45.

   Maskin, E. and J. Riley (1984), "Optimal Auctions with Risk-Averse Buyers," Econometrica 52(6): 1473-1518.

   Milgrom, P. and R. Weber (1982), "A Theory of Auctions and Competitive Bidding," Econometrica 50(5):1089-1122.

   Myerson, R. (1981), "Optimal Auction Design," Mathematics of Operations Research, 6: 58-73.

   Myerson, R. and M. Satterthwaite (1983), "Efficient Mechanisms for Bilateral Trading," Journal of Economic Theory, 29: 265-281.

5. Dynamic Adverse Selection: Renegotiation
   **BD, Chapter 9**
   Dewatripont, M. (1989), "Renegotiation and Information Revelation over Time: The Case of Optimal Labor Contracts," Quarterly Journal of Economics, 104: 589-619.
   Diamond, D. (1989), "Reputation Acquisition in Debt Markets," Journal of Political Economy, 97(4), 828-62.
   Hart, O. and J. Tirole (1988), "Contract Renegotiation and Coasian Dynamics," Review of Economic Studies, 55: 509-540.
   Laffont, J.-J. and J. Tirole (1988), "The Dynamics of Incentive Contracts," Econometrica, 56(5): 1153-1175.
   Townsend, R. (1982), "Optimal Multiperiod Contracts and the Gain from Enduring Relationships under Private Information," Journal of Political Economy, 90, 1166-86.

Required readings for each topic are printed in **bold** font.
Please note that this is a tentative list of topics, and that both the course outline and the list of readings may be updated during the term.

| Evaluation |
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There will be three components to your grade:

| Component | Date | Weight |
| --- | --- | --- |
| Assignments | TBA | 15% |
| Midterm Exam | March 3 | 20% |
| Final Exam | TBA | 65% |

The weight of the midterm will be shifted to the final if this results in a better overall grade.

**Assignments:** There will be several assignments, covering all major topics of the course. You will have at least one week to complete each assignment. While you are encouraged to cooperate solving the assignments, I expect the answers that are handed in to reflect students' individual contributions. The assignment with the lowest mark will not be used in the calculation of your overall grade. Late assignments will not be accepted. Some answer keys may be posted on Canvas, and the assignments will be discussed in class.

**Exams:** There will be an 80-minute midterm exam and a 3-hour final. Exams will be cumulative and test your understanding of the subject material and your ability to analyze and formulate solutions to specific problems. The assignments are intended to assist you in the preparation for the exams, but note that exam questions are typically different from assignment questions. All exams are closed book. Electronic devices will not be permitted during examinations, with the exception of approved non-programmable calculators without communication functions. There will be no deferred midterms.

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| **Missed Components:** | If assignments or the midterm exam cannot be completed for a justifiable reason, it may be possible to make alternative arrangements *prior to* the due date at the instructor's discretion. If no such arrangements are made and the component is missed, a grade of 0 will be assigned, unless the student provides written documentation of circumstances beyond his or her control that prevented him or her from completing the assignment on time. |
| **Attendance:** | University policies apply. Regular attendance is highly recommended. |
| **Participation:** | There are no specific participation requirements. |
| **Grading and Credit:** | This course uses a percentage grading scheme. To receive credit for this course, an overall passing grade is required. |
| **Grade Distribution:** | See http://usask.pollak.org/?teaching for the historic grade distribution in this course. |

| Other Information |
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*Recording of the Course*
Students will be allowed to record lectures if they provide a reasonable rationale and if there are no objections by other students.

*Midterm and Final Examination Scheduling* Final examinations may be scheduled at any time during the examination period (see https://students.usask.ca/academic-calendar/ for the specific dates this term); students should therefore avoid making prior travel, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students are encouraged to review all examination policies and procedures: http://students.usask.ca/academics/exams.php

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Course materials are provided to you based on your registration in a class, and anything created by your professors and instructors is their intellectual property and cannot be shared without written permission. If materials are designated as open education resources (with a creative commons license) you can share and/or use in alignment with the CC license. This includes exams, PowerPoint/PDF slides and other course notes. Additionally, other copyright-protected materials created by textbook publishers and authors may be provided to you based on license terms and educational exceptions in the Canadian Copyright Act (see http://laws-lois.justice.gc.ca/eng/acts/C-42/index.html).

Before you copy or distribute others' copyright-protected materials, please ensure that your use of the materials is covered under the University's Fair Dealing Copyright Guidelines available at https://library.usask.ca/copyright/general-information/fair-dealing-guidelines.php. For example, posting others' copyright-protected materials on the open web is not covered under the University's Fair Dealing Copyright Guidelines, and doing so requires permission from the copyright holder. For more information about copyright, please visit https://library.usask.ca/copyright/index.phpwhere there is information for students available at https://library.usask.ca/copyright/students/rights.php, or contact the University's Copyright Coordinator at copyright.coordinator@usask.ca or 306-966-8817.

*Integrity*
The University of Saskatchewan is committed to the highest standards of academic integrity. https://academic-integrity.usask.ca/

Students are urged to read the Regulations on Academic Misconduct and to avoid any behaviours that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence.

For help developing the skills for meeting academic integrity expectations, see: https://academic-integrity.usask.ca/students.php

Students are encouraged to ask their instructors for clarification on academic integrity requirements.

*Examinations with Access and Equity Services (AES)*
Access and Equity Services (AES) is available to provide support to students who require accommodations due to disability, family status, and religious observances.

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services (AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals at any time. Those students who are registered with AES with mental health disabilities and who anticipate that they may have responses to certain course materials or topics, should discuss course content with their instructors prior to course add / drop dates.

Students who require accommodations for pregnancy or substantial parental/family duties should contact AES to discuss their situations and potentially register with that office.

Students who require accommodations due to religious practices that prohibit the writing of exams on religious holidays should contact AES to self-declare and determine which accommodations are appropriate. In general, students who are unable to write an exam due to a religious conflict do not register with AES but instead submit an exam conflict form through their PAWS account to arrange accommodations.

Any student registered with AES, as well as those who require accommodations on religious grounds, may request alternative arrangements for mid-term and final examinations by submitting a request to AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

For more information or advice, visit https://students.usask.ca/health/centres/access-equity-services.php, or contact AES at 306-966-7273 (Voice/TTY 1-306-966-7276) or email aes@usask.ca.

*Student Supports*
Academic Help - University Library
Visit the University Library (https://library.usask.ca/) and Learning Hub (https://library.usask.ca/studentlearning/) to find supports for undergraduate and graduate students with first-year experience, study skills, learning strategies, research, writing, math and statistics. Students can attend workshops (https://library.usask.ca/studentlearning/#Eventsandworkshop), access online resources and research guides (https://libguides.usask.ca/), book 1-1 appointments (https://libcal.usask.ca/appointments) or hire a subject tutor (https://usask.tutorocean.com/search?page=1&sortBy=bestMatch&subjectTutorsForHire=true) through the USask Tutoring Network (https://library.usask.ca/studentlearning/tutor.php)
Connect with library staff through the AskUs (https://library.usask.ca/askus/index.php) chat service or visit various library locations (https://library.usask.ca/hours.php) on campus.
Enrolled in an online course? Explore the Online Learning Readiness Tutorial (https://libguides.usask.ca/Online_Learning_Readiness_Tutorial)

Financial Support
Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact Student Central (https://students.usask.ca/student-central.php).

Aboriginal Students' Centre
The Aboriginal Students' Centre (ASC) is dedicated to supporting Aboriginal student academic and personal success. The centre offers personal, social, cultural and some academic supports to Métis, First Nations, and Inuit students. The centre is also dedicated to intercultural education, brining Aboriginal and non-Aboriginal students together to learn from, with and about one another in a respectful, inclusive and safe environment. Students are encouraged to visit the ASC's Facebook page (https://www.facebook.com/aboriginalstudentscentre/) to learn more.

International Student and Study Abroad Centre
The International Student and Study Abroad Centre (ISSAC) supports student success and facilitates international education experiences at USask and abroad. ISSAC is here to assist all international undergraduate, graduate, exchange and English as a Second Language students in their transition to the University of Saskatchewan and to life in Canada. ISSAC offers advising and support on matters that affect international students and their families and on matters related to studying abroad as University of Saskatchewan students. Please visit students.usask.ca for more information.