ORIGINAL COURSE IMPLEMENTATION DATE: September 2012
REVISED COURSE IMPLEMENTATION DATE: January 2019
COURSE TO BE REVIEWED (six years after UEC approval)**:** May 2024
Course outline form version: 10/27/2017

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: ECON 207	**Number of Credits:** 3 Course credit policy (105)

Course Full Title: Introduction to Game Theory and Strategic Thinking
Course Short Title: Game Theory
(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)

Faculty: Faculty of Science	**Department (or program if no department):** Economics

Calendar Description:

The methodology and analytical tools used to study decision making in situations characterized by strategic interaction are considered in this course. To help translate theory into practice, students participate in in-class teaching games.

Prerequisites (or NONE):	ECON 100.
Corequisites (if applicable, or NONE):	NONE
Pre/corequisites (if applicable, or NONE):	NONE

Antirequisite Courses *(Cannot be taken for additional credit.)*
Former course code/number:
Cross-listed with:
Dual-listed with:
Equivalent course(s):
(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar hours	45
Tutorials/workshops	
Supervised laboratory hours	
Experiential (field experience, practicum, internship, etc.)	
Supervised online activities	
Other contact hours:	
Total hours	**45**

Labs to be scheduled independent of lecture hours: ☒ No ☐ Yes

Special Topics
This course is offered with different topics:
☒ No ☐ Yes *(Double-click on box to select it as checked.)*
If yes, different lettered courses may be taken for credit:
☐ No ☐ Yes, repeat(s) ☐ Yes, no limit
(The specific topic will be recorded when offered.)

Transfer Credit
Transfer credit already exists: *(See bctransferguide.ca.)*
☐ No ☒ Yes
Submit revised outline for rearticulation:
☒ No ☐ Yes *(If yes, fill in transfer credit form.)*

Grading System
☒ Letter Grades ☐ Credit/No Credit

Expected Frequency of Course Offerings:
Annually
(Every semester, Fall only, annually, every other Fall, etc.)

Department / Program Head or Director: Michael K. Maschek, Ph.D.	**Date approved:**	January 2018
Faculty Council approval	**Date approved:**	February 2018
Dean/Associate VP: Jacqueline Nolte	**Date approved:**	February 2018
Campus-Wide Consultation (CWC)	**Date of posting:**	April 13, 2018
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	May 18, 2018

Learning Outcomes:

Upon successful completion of this course, students will be able to:

- Classify games in terms of their key characteristics and constraints.
- Illustrate simultaneous move games using the normal form representation.
- Illustrate sequential move games using the extensive form representation.
- Use various equilibria concepts, such as Nash equilibrium and sub-game perfect Nash equilibrium, to solve simultaneous and sequential move games in pure strategies.
- Use the concept of mixed-strategy Nash equilibria to solve games of complete information.
- Detail how trigger-strategies can support superior outcomes in repeated, simultaneous move games.
- Model and solve games of incomplete information.

Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods *(Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.)*

Lecture/seminar format with in-class participation in teaching games, problem-solving and discussion.

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials *(If more space is required, download Supplemental Texts and Resource Materials form.)*

	Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1.	Osborne	An Introduction to Game Theory	☒	Oxford	2009
2.	Gibbons	Game Theory for Applied Economists	☒	Princeton University Press	1992
3.	Dixit/ Skeath/ Reily	Games of Strategy, 4th Edition	☒	Norton	2015
4.	Tadelis	Game Theory: An Introduction	☒	Princeton University Press	2013
5.			☐		

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Typical Evaluation Methods and Weighting

Final exam:	30%	Assignments:	20%	Field experience:	%	Portfolio:	%
Midterm exam:	20%	Project:	20%	Practicum:	%	Other:	%
Quizzes/tests:	10%	Lab work:	%	Shop work:	%	Total:	100%

Details (if necessary):

Typical Course Content and Topics

What is game theory?
Basic theory: normal-form representation of games
Dominant strategies and dominant strategy equilibria
Iterated elimination of strictly/weakly dominated strategies
Motivation and definition of Nash equilibrium
Mixed strategies
Existence of Nash equilibrium
Infinitely repeated simultaneous move games and trigger strategies
Basic theory: extensive-form representation of sequential games
Backward induction and sub-game perfect Nash equilibrium
Sequential games of complete but imperfect information
Static games of incomplete information: normal form representation of Bayesian games
Definition of Bayesian equilibrium