

# Course Syllabus

Course Name & Number:	FIN 579 C/D – Special Topics in Finance: Game Theory
Quarter	Spring 2022
Start & End Dates	03/28/2022 - 06/10/2022
Grading	Graded
Credits	4 credits
Prerequisites	B ECON 500 (Introduction to Business Economics)
Course Website	<a href="https://canvas.uw.edu/courses/1552115/">https://canvas.uw.edu/courses/1552115/</a>

## Course Overview

Game theory teaches us how to think strategically: it is a method of analysis used to study, and guide, decision-making in environments where there is mutual interdependence. Information economics helps us analyze situations in which one agent has greater information than another agent with whom it interacts. This course surveys and develops concepts and techniques of game theory and information economics and their applications to issues of business strategy, including advertising and pricing decisions, negotiation and bargaining situations, entry deterrence games, etc.

## Course Learning Objectives

The course will help students to:

- Identify strategic environments and model them as games.
- Analyze economic situations using game theory techniques, and recommend and prescribe strategies to implement in such environments.

- Devise strategic moves that allow you to exploit a situation (change a game) to your advantage.
- Apply game theory techniques to defend or critique a business decision.

## Faculty Info

### Alexis León

Email: [aleond@uw.edu](mailto:aleond@uw.edu)

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Office: PCAR 427

Virtual Office Hours:

by appointment

## Faculty Bio

Alexis León is Associate Teaching Professor of Finance and Business Economics and has been at Foster School of Business, University of Washington, Seattle since 2016. He received his PhD in Economics from the Massachusetts Institute of Technology. In addition to Foster and MIT, Alexis has also taught at the University of Pittsburgh, Universitat Autònoma de Barcelona, and Universitat Pompeu Fabra (UPF) in Barcelona, Spain.

## Communications Guidelines

Please do not hesitate to contact me with any questions, comments or concerns you may have regarding your learning experience in this course. Email is the most efficient method of communication, whether to resolve any doubts or exchange ideas, or to set up a time for a call. Office hours (via Zoom or in person) can be held by appointment; please let me know when you are open and I will do my best to match my schedule to yours.

## Email and Internet

UW Email and Canvas are the official means of communication for this class. You should check your @uw.edu email account regularly along with the Announcements section of this course on Canvas.

# Course Structure and Format

## Course Time Commitment

This **4**-credit course requires approximately **8-12** hours of work per module. Please expect to spend more time during those modules which include exams or larger assignments.

## Organization and Delivery Method

This course uses [Canvas](#) for the facilitation of communications between faculty and students, posting course materials, submission of assignments, and posting of grades. The course is organized by modules, which correspond to the following weeks in the Quarter:

<b>Module</b>	<b>Topic:</b>	<b>Class Dates:</b>
1	Introduction; Simultaneous Games (1): Nash equilibrium	3/27/2022 - 4/03/2022
2	Simultaneous Games (2): Prisoner's Dilemma	4/04/2022 - 4/10/2022
3	Simultaneous Games (3): Repeated Games, Cooperation	4/11/2022 - 4/17/2022
4	Simultaneous Games (4): Mixed Strategies, Unpredictability	4/18/2022 - 4/24/2022
5	Sequential Games (1): First- and Second-Mover Advantage	4/25/2022 - 5/01/2022
6	Sequential Games (2): Strategic Moves	5/02/2022 - 5/08/2022
7	Sequential Games (3): Bargaining, Principal-Agent	5/09/2022 - 5/15/2022
8	Sequential Games (4): Games of Incomplete Information	5/16/2022 - 5/22/2022

9	Summary and Conclusion: Choosing the Right Game	5/23/2022 - 5/29/2022
10	Mini-Presentations	5/30/2022 - 6/10/2022

## Course Format

Each module will provide you with a variety of learning experiences. You can expect the following types of activities throughout the Quarter:

## Class Sessions

Every Module will include a class session on Tuesday evening at 6:00pm in PCAR 390. Further details and expectations regarding advanced individual work to be completed before each session, such as readings, will be included in the Canvas Module overview page for that Module.

- Session 1: Tuesday / 29-Mar / 6:00pm - 8:45pm
- Session 2: Tuesday / 5-Apr / 6:00pm - 8:45pm
- Session 3: Tuesday / 12-Apr / 6:00pm - 8:45pm
- Session 4: Tuesday / 19-Apr / 6:00pm - 8:45pm
- Session 5: Tuesday / 26-Apr / 6:00pm - 8:45pm
- Session 6: Tuesday / 3-May / 6:00pm - 8:45pm
- Session 7: Tuesday / 10-May / 6:00pm - 8:45pm
- Session 8: Tuesday / 17-May / 6:00pm - 8:45pm
- Session 9: Tuesday / 24-May / 6:00pm - 8:45pm
- Session 10: Tuesday / 30-May / 6:00pm - 9:20pm

## Readings

I have selected a few short articles from the popular media (e.g.: New York Times, Financial Times, CNN, etc.) that address issues related to the material presented that week. Links to all these articles will appear in the corresponding Module pages on Canvas.

While there is no required textbook in this course, you may find some of the following references useful to supplement the material from class:

- *Microeconomics*, 3<sup>rd</sup> Edition, by Austan Goolsbee, Steven Levitt, and Chad Syverson. New York: Worth Publishers – Macmillan Learning, 2020 [especially chapters 11, 12 and 16]
- *Games, Strategies, and Decision Making*, 2<sup>nd</sup> Edition, by Joseph E. Harrington, Jr. New York: Worth, 2015 [a bit too technical in its coverage of most issues in this course]
- *A Course in Game Theory*, by Martin Osborne and Ariel Rubinstein, Cambridge: MIT Press, 1994. [available for free via download at: <http://books.osborne.economics.utoronto.ca/>]  
[Links to an external site.](#)
- *The Art of Strategy: A Game Theorist's Guide to Success in Business and Life*, by Avinash Dixit and Barry Nalebuff, New York: W. W. Norton & Company, 2008

## Video

Some modules will include short videos covering relevant topics in the Module. These will be available via Canvas.

## Discussions

Most modules will include a Discussion Board topic in Canvas. Some of them will be optional, while others will be graded assignments. Instructions for completing these assignments are included within the Module pages.

## Homework Assignments

Submitted work in this course will include four (4) problem sets, designed to test your understanding of key concepts and models and to give you an opportunity to employ those economic principles in a practical context. These are team assignments: each team should discuss approaches to solving the problems and turn in one paper for the whole group. To receive full credit for a problem set, you must make a reasonable attempt to solve every problem assigned. Only one problem on each homework will be graded; this will be randomly selected after the due date. Problem sets may be written neatly by hand or typed, and submitted electronically (in one file, preferably in pdf format) via the corresponding Canvas Assignment dropbox.

## Exam

You will be tested on your knowledge of the material via one exam. You will have a multi-day window to complete the exam, which should take you no more than 4-6 hours. The questions will be based on the types that you will have seen in the homework assignments or in class, but will not be pure regurgitation of mathematical steps: the test will be designed to stretch you a bit further, in order to better determine your true level of understanding of the key economic principles and game theoretical tools presented in the course.

This is an individual assignment. You may use the class session slides and video recordings, your notes, the homework solutions, and any other materials on the class [Canvas site](#) to assist you. You may not collaborate with your classmates or use any materials not provided by me (i.e., economics resources on the internet). Your completed exam should be submitted electronically via the appropriate Canvas Assignment drop box by the end of **Monday, May 23<sup>rd</sup>**. Any disputes of your exam grade must take place within one week of scores being posted, and must be submitted in writing.

## Team Project

The goal of this group project is to research, write and present a short (no more than 10-12 pages) research paper that applies game theoretical tools we learn in class to a real-world issue.

You will find the relevant instructions, deliverables and deadlines in the [Team Project Assignment Guide](#)

[Actions](#), on Canvas.

## Grading Policies

## Submitting Assignments

Instructions for submitting assignments are included with the assignment descriptions on Canvas. Due dates for all graded work are included in the Course Calendar below, and on Canvas. **Please do not send me your work as an email attachment.**

## Late or Missed Assignments

Please notify me **before** an assignment is due if an urgent situation arises and the assignment cannot be submitted by the due date. Published assignment due dates (Pacific Daylight Time - PDT) are firm.

## Graded Material Overview

Activity:	#:	Value	Total:
Homework Assignments (Problem Sets)	4	50	200
Discussions	3	50	150
Exam	1	300	300
Team Project	1	350	350
Total:			1000 points

I will follow the agreed Foster School guidelines for elective courses, and assign end-of-quarter course grades with a median of 3.5.

## Course Policies

### Academic Integrity and Student Conduct

To maintain academic integrity, this program employs the principles and procedures espoused by the [University of Washington Community Standards and Student Conduct guidelines Links to an external site.](#), which establishes the expectation that students will practice high standards of professional honesty and integrity.

Implementation of the Code at Foster prohibits cheating, attempted cheating, and plagiarism—including improper citations of source material—as it pertains to academic work. The work you submit should be your own. Suspected violations will be handled in compliance with the [University of Washington Student Conduct Code Links to an external site.](#) as outlined in [Washington Administrative Code 478-121 Links to an external site..](#)

# Copyright

The course content is for class purposes only and is to be used only by the student enrolled in the course. All rights reserved. No part of this course may be reproduced, distributed, or transmitted in any form or by any means, including photography, video recordings, screenshots, or other electronic or digital methods, without the prior written permission of the instructor.

## Access and Accommodations

Your experience in this class is important. If you have already established accommodations with [Disability Resources for Students \(DRS\) Links to an external site.](#), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but are not limited to: mental health, attention-related, learning, vision, hearing, physical or health impacts), you may contact DRS at 206-543-8924 or [uwdrs@uw.edu](mailto:uwdrs@uw.edu). Reasonable accommodations are established through an interactive process between you, me and DRS. It is the policy and practice of the UW to create inclusive and accessible learning environments consistent with federal and state law.

- Website: <http://depts.washington.edu/uwdrs/Links to an external site.>
- Guide: [Getting Started / Accessing ResourcesLinks to an external site.](#)
- Email: [uwdrs@uw.edu](mailto:uwdrs@uw.edu)
- Phone: 206-543-8924
- Fax: 206-616-8379

## Course Evaluation

Course evaluations are done toward the end of the quarter during a predetermined time period. They are delivered digitally by the UW Office of Educational Assessment.

All evaluations are anonymous and are used to make improvements to the course, and are included in a faculty member's annual review. It is important to complete the evaluations and provide your honest assessment both in the quantitative and qualitative measures.

## Religious Accommodations Policy

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at [Religious Accommodations Policy Links to an external site..](#) Accommodations must be requested within the first two weeks of this course using the [Religious Accommodations Request form Links to an external site..](#)

## FERPA

Class sessions will be recorded. The recording will capture audio and video from the classroom as well as the podium computer screen. The recordings will only be accessible to students enrolled in the course to review materials. These recordings will not be shared with or accessible to the public.

For more information about the University's FERPA policy, please visit the [Office of the University Registrar's Page Links to an external site..](#)

## Spring Quarter 2022: Facts and Information

As part of our plan to continue offering safe in-person instruction this quarter, I ask that you stay home if you are experiencing symptoms and/or test positive for COVID-19. To ensure you will not miss any material, links to class video recordings will be posted on Canvas within one business day. In the event that I were experiencing symptoms or tested positive for COVID-19, I would send out an announcement with a Zoom meeting link to hold the session virtually. For more details, including answers to frequently asked questions, please check: <https://www.washington.edu/coronavirus/> [Links to an external site..](#)

## Tech Support

## Network Use Policies

Please read the University of Washington's [Student Use of UW Computing Resources Policy](#).

# Network Outages

To monitor the status of campus networks and services, visit the ItConnect eOutages page at: <https://eoutage.uw.edu/>.

## Canvas and Zoom Support

<https://itconnect.uw.edu/learn/tools/canvas/canvas-help-for-students/>

In the event of a Canvas outage, you can check the status of Canvas at <http://status.instructure.com/> [Links to an external site..](#)

For Zoom, please visit <http://status.zoom.us/> [Links to an external site..](#)

### Syllabus Purpose and Disclaimer:

This syllabus serves as a guideline for what to expect in this class and an implicit agreement between the instructor and the student.

Before contacting the instructional staff, please review these documents first to see if your question is addressed. Every effort will be made to avoid changing the course schedule, but adjustments may be necessary to accommodate errors, omissions, or unforeseen events (such as weather events).

In the event changes are made to the syllabus, students will be informed during class, on the course website, and via email. It is your responsibility to be aware of these changes, so please check your email and the course site often.