Game Theory
Math 5750/6880-003, Spring 2018

Class meets: 01/09/2018 to 04/24/2018
Time: TH 02:00PM-03:20PM
Holidays: March 18-25 (Spring Break)
Place: AEB 350
Instructor: Sung Chan Choi, JWB 121
Website:
Email: choi@math.utah.edu
Office Hours: TBA

Text: *Game Theory* by Thomas Ferguson, 2nd edition,
Free download at [http://www.math.ucla.edu/~tom/Game_Theory/Contents.html](http://www.math.ucla.edu/~tom/Game_Theory/Contents.html)

Prerequisites: Math 2270, Linear Algebra (or the equivalent).
Topics covered, if time permits:

1. Impartial Combinatorial Games
   (a) Take-Away Games
   (b) The Game of Nim
   (c) Graph Games
   (d) Sums of Combinatorial Games

2. Two-Person Zero-Sum Games
   (a) The Strategic Form of a Game
   (b) Matrix Games
   (c) Domination
   (d) The Principle of Indifference
   (e) Solving Finite Games
   (f) The Extensive Form of a Game

3. Two-Person General-Sum Games
   (a) Bimatrix Games – Safety Levels
   (b) Noncooperative Games – Equilibria
   (c) Cooperative Games

4. n-Person Games in Coalitional Form
   (a) Many-Person TU Games
   (b) Imputations and the Core
   (c) The Shapley Value
Printing: LCB 155 C
Free printing are available in the T. Benny Bushing Mathematics Center, located between LCB and JWB. The regular hours is M-Th 8:00am - 8:00pm, Fri 8:00am - 6:00pm.

Grade Distribution:

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<tr>
<td>Quiz</td>
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<tr>
<td>Midterm Exam 1</td>
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<tr>
<td>Midterm Exam 2</td>
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<td>Final Exam</td>
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Grade Distribution:

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Grading Scale:

Course Policies:

- Exams and quizzes are closed book, closed notes.
- If you cheat on any quiz or exam, I will automatically give you a zero for that grade.
- I do NOT allow the use of laptop computers in my classroom. But tablets are okay if you are taking notes on it.
- There will be no retakes of exams … ever. Your score is what you get.
- You may take an alternate exam if you submit a documented verification about it to me first and explain the extenuating circumstances that make it necessary. Needing to work, babysitting your siblings, oversleeping, or needing more time to study do not pass as acceptable reasons.
- I will demand respectful behavior in my classroom. Examples of disrespect include reading a newspaper or magazine in class, social chatting with your friend in class, text-messaging your buddies during class or cuddling with your girl/boyfriend in class.
- There will be no cursing nor negative ranting (for example, "math sucks") on any written work turned in. The penalty for such things on your written work will be a zero score on that assignment or test!
- You need to have a valid email address registered with Campus Information System.
- You need to check CANVAS everyday.
- Student Responsibilities: All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. You have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, collusion, fraud, theft, etc. Students should read the Code carefully and know you are responsible for the
content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. See http://regulations.utah.edu/academics/6-400.php

- I reserve the right to change my policies stated in this syllabus at some point in the semester. If I do make a change to a policy, I will announce it in class and send the change in email.

Other Important Dates:

- 1/19(F): Last Day to Add, Drop(Delete), Elect CR/NC, or Audit Classes
- 3/2 (F): Last Day to Withdraw from classes
- See http://registrar.utah.edu/academic-calendars/spring2018.php

ADA:
The American with Disabilities Act requires that reasonable accommodations be proved for students with physical, cognitive, systemic learning, and psychiatric disabilities. The student needs to have such a disability approved by the Disability Service Office (162 UNION, 581-5020) in order to have the accommodations provided. The instructor need to be informed about such a disability and approved accommodations at the beginning of the semester.