Economics 421 (M001): Game Theory and Economic Strategy
Fall 2017
Professor Buzard

This course examines situations in which each agent's behavior affects the well-being of the other agents. Game theory is a technical framework for rigorously analyzing decision-making in such settings. Almost every type of interaction between living things is strategic. We will focus on human interaction and assume that people behave in a rational, deliberate manner. In addition to exploring theory in the abstract, we will consider a variety of applications from economics, political science, sports and everyday life.

Schedule: MW 12:45 – 2:05 p.m. in Hall of Languages, Room 114

Class Website: All materials and announcements will be posted on **Blackboard,** https://blackboard.syr.edu. Announcements will also be pushed to SU email accounts. It is each student's responsibility to check for announcements on a daily basis.

Required Materials:
- Book (on reserve at Bird Library): Watson, J., *Strategy: An Introduction to Game Theory* (Norton) **3rd Edition**, 2013.
- Turning Point Technologies Response Card (RF, RF LCD, NXT or QT2). You must create a TurningPoint Account and register your **Response Card** (also referred to as "**clicker**") and license to receive credit for responses. See "Clicker Information" PDF for more details.

Office Hours and Contact Information:
- Professor Buzard (kbuzard@syr.edu, 315-443-4079): Tuesdays 2:00-4:00pm; Wednesdays 10:30 – 11:30 am in Eggers 131.
- Teaching Assistant Guanyu Liu (gliu03@syr.edu): Mondays 10:00-11:00am, Thursdays 2:00-3:00pm in Eggers 124.

Prerequisites: The prerequisites for this course are Intermediate Microeconomics (ECN 301 or 311) and Calculus (MAT 284, 285, 295 or 296). You will need to already be comfortable with partial differentiation or be able to learn it quickly. Appendix A of the Watson text is a good gauge of the math you will need. There will be two math quizzes during the semester; for each quiz, you must keep re-taking a version until you earn a score of at least 80% in order to stay in good standing to earn participation points.

Course Approach: This course centers learning around students. Working most often in small teams, we will emphasize reflection and discussion of course material and how it relates to applications to help each other understand issues in which you are interested. While one goal is to learn important tools of strategic analysis, most important is learning how to *think* about situations you might encounter in the future.

I believe that the best use of class time is to work together on the most challenging questions with the guidance of your instructors, so students are asked to read AND WATCH the basic materials ahead and are **quizzed at the beginning of each class** to ensure everyone is prepared. We will use the **Turning Point Response Card clickers** for these quizzes (quizzes are graded for accuracy) and for individual and team responses to discussion questions posed throughout each class period (these responses are graded for participation only and not correctness so that there is no anxiety about grades as we wrestle with new ideas). Short periods of lecture will be interspersed with individual reflection and team discussion to move the conversation forward and introduce key new concepts and challenges. In this way, it is my hope that we do the "heavy lifting" of learning in class at a relatively even pace, with little need for cramming for exams. The learning community that we will create together will become the defining feature of the course.

In addition to the textbook, I will periodically introduce articles, videos, games and other outside materials from various sources. Those materials that are required material for exam purposes will be made clear.

Problem Sets: Weekly or bi-weekly problem sets will be assigned and points awarded for prompt completion and/or accuracy. Deadlines depend on the learning community's progress through the material.

Examinations: There will be three non-cumulative examinations (although some material will build on earlier parts of the course). Exam 1 and Exam 2 will take place during class on Oct. 4 and Nov. 8, respectively. Exam 3 will take place during the final exam period on Monday, December 11 from 12:45-1:45 p.m. Monday, December 11 from 1:45-2:45 p.m. will be the sole time to make up any missed exams. This will be the *only* way to make up a missed exam.

Grading Weights: Reading quizzes 10%; Class participation 15%; Homework 15%; Exams 60%.
- The score (before curve) for class participation and reading quizzes is calculated from 85% of the total points in each category. That is, you only need to get 85% of the quiz questions correct to get the full 10% of the grade and click-in on 85% of the discussion questions to get the 15% for class participation. This is to allow for family emergencies, illness, job interviews, commuting delays, lost/forgotten clickers and similar circumstances since there is no way to make up these portions of the course. No other allowances will be made; this policy substitutes for 'excused' absences."
- In order to receive a team assignment and be eligible to earn participation points, you must:
    1. submit a 400-word synopsis (Blackboard/Turnitin) of Aug. 28's class material pertaining to the course design and commitments to the learning community by Sept. 1 at 11:59pm;
    2. complete the Syllabus Quiz (Blackboard) by Sept. 1 at 11:59pm.
        - If Blackboard access has not been granted by midnight on Aug. 31, the deadlines for items 1 and 2 will be extended to 11:59pm the day after Blackboard access is granted.
    3. a student who registers after class on Wednesday, Aug. 30 must arrange to complete the math pre-test by Wednesday, Sept. 6;
    4. submit the First Class Survey (Google Form) by Fri., Sept. 8 at 11:59pm;
    5. register a TurningPoint Clicker (Blackboard/Turningpoint) by Fri., Sept. 8 at 11:59 pm;
- Because poor attendance causes difficulties for small team dynamics, I reserve the right to withdraw a team assignment from any student whose attendance falls to less than 70% of class sessions that involve team work. If this action must be taken, that student **forfeits** all future class participation points. In addition, no class participation points can be earned as long as a student's attendance is below the 70% threshold, regardless of team assignment status.

Curve: Overall grades will be curved so that the following percentages of letter grades are awarded:

Grade	Percent of Students Receiving that Grade (Approximate)
A	20-30
B	25-35
C	25-35
D & F	5-10

Course Policies:

1. SU's religious observances policy (http://supolicies.syr.edu/emp_ben/religious_observance.htm) recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes. An online notification process is available through MySlice/Student Services/ Enrollment/My Religious Observances from the first day of class until the end of the second week.

2. If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

3. SU's Academic Integrity Policy defines expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations (ECN 421: No collaboration allowed on written quizzes, clicker quizzes or exams), as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. For more information about the policy, see http://academicintegrity.syr.edu. The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level.

4. Some work in this class will be submitted via the plagiarism detection and prevention system Turnitin. Turnitin compares submitted documents against documents on the Internet and against student papers submitted to Turnitin at SU and at other colleges and universities. I will take your knowledge of the subject matter of this course and your writing level and style into account in interpreting the originality report. Keep in mind that all papers you submit for this class will become part of the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers.

5. As stated in the University's Academic Rules and Regulations, student work prepared for this course in any media may be used for educational purposes. You grant permission to have your work used in this manner by registering for, and by continuing to be enrolled in, this course. After you have completed this course, any further use of your work will either be rendered anonymous by removing all of your personal identification or your written permission will be secured. If you object in any way, please send me an email no later than the second week of class at kbuzard@syr.edu.

6. Students have one week from the day on which an exam is returned to request a re-grade. This must be done in writing. Re-grading may be requested for make-up exams during the final exams period through the first week of Spring semester. If a student submits his/her exam for re-grading, the student's entire exam will be re-graded by the professor (with no guarantee of a higher total score).

7. If you arrive late to an exam, you will be allowed to take the exam in the time that remains *as long as no one has turned in his/her exam and left the room*. Once a classmate has turned in his/her exam, you will earn a zero on the test if you arrive late, but will be eligible to take the make-up exam during finals.

8. Electronic devices other than TurningPoint clickers are allowed *only* as needed to access an electronic version of the textbook AND as long as it does not become a distraction to others. Other use of electronic devices is not allowed and will be enforced by the confiscation of the device for the duration of class and/or the deduction of participation points. The wearing of headphones during class is strictly prohibited. No electronic or other devices of any kind are allowed during quizzes or exams.

Course Outline

Topic	Chapters in the textbook

A. Representing Games

Extensive form, strategies, normal form	1 – 3
Beliefs/mixed strategies, assumptions	4 – 5

II. Analysis of Static Settings

Best response, rationalizability, applications	6 – 8
Equilibrium, applications	9 – 10
Mixed strategy equilibrium	11

III. Analysis of Dynamic Settings

Extensive form, backward induction, SPE	14 – 15
Examples and applications	16

IV. Information

Random events and incomplete information	24
Bayesian equilibrium, applications	26 – 27
PBE, applications	28 – 29