Description. This course will develop concepts and models from two branches of game theory in order to analyze the question of why social structures exist and why they take the forms that they do. So-called “rational game theory” uses payoff numbers to represent the preferences of players, and then predicts that players choose the strategy that they prefer, given the strategies of the other players. In contrast, evolutionary game theory uses payoff numbers to represent the fitness of players, and predicts the survival of those strategies with the highest fitness. At numerous junctures, the course will critically examine the differences between these two approaches.

The primary text will be Skyrms (2004). In addition, the material on rational game theory will draw extensively from Osborne (2004). Further, the material on evolutionary game theory will be supplemented by guest lectures by Geoff Wild of the Department of Applied Mathematics. Further reading material may appear on the course website at owl.uwo.ca.

Learning Outcomes.
● Students will acquire the rudiments of rational game theory and evolutionary game theory.
● Students will apply both kinds of game theory to model repeated social interaction.
● Students will evaluate the strengths and weaknesses of the two different approaches.

Prerequisites. Students may register for the course if they fall into at least one of the following three categories.
● A third or fourth year student in an Honors module in Economics
● A second-year or higher student in any module who has earned a mark of 80 or higher in Calculus 1000 and in one other higher-level University Mathematics course.
● Students granted special permission by the instructor.
Evaluation. Students will write two examinations. The first exam will occur on February 13 in lieu of a lecture. It will cover rational game theory. The second exam will be the course’s final exam. It will cover evolutionary game theory only. Each exam will be worth 30% of the course grade. (During examinations, students are permitted to have no electronic devices other than a nonprogrammable nongraphing calculator.)

In addition, students will give one in-class presentation, the topic for which must be approved by the instructor, and write a term paper on a topic that must also be approved. The presentation will be worth 15% of the course grade, and the term paper will be worth 25%.

Help. My phone is 661-2111x85384, and my email is pstreuf@uwo.ca. My office hours are in 4040 Social Science, on Tuesdays and Fridays from 1:30 to 2:30, and by appointment. The department undergraduate advisor can be reached at 519-661-3507 or SSC Room 4075 or econugrd@uwo.ca.

Tentative Schedule. The lectures, the midterm examination, and the presentations will take place in SSC 2024 on Fridays from 10:30-1:30, according to the following tentative schedule.

A. Rational game theory
   ● February 13. First examination.

B. Evolutionary game theory
   ● March 6. Applications to biology (by Geoff Wild).
   ● March 20. Applications to social science and economic behavior.
• March 27. Evolution of cooperation in spatial neighborhoods.
• Final exam (on evolutionary game theory only).

C. Presentations
• April 3 (and other dates as needed).

Department Warning about Registration. You are responsible for ensuring you are registered in the correct courses. If you are not registered in a course, the Department will not release any of your marks until your registration is corrected. You may check your timetable by using the Login on the Student Services website at https://studentservices.uwo.ca/secure/index.cfm. If you notice a problem, please contact your home Faculty Academic Counsellor immediately.

Department Warning about Prerequisites. You are responsible for ensuring that you have successfully completed all course prerequisites, and that you have not taken an anti-requisite course. Lack of prerequisites may not be used as a basis for appeal. If you are found to be ineligible for a course, you may be removed from it at any time and you will receive no adjustment to your fees. This decision cannot be appealed.

If you find that you do not have the course prerequisites, it is in your best interest to drop the course well before the end of the add/drop period. Your prompt attention to this matter will not only help protect your academic record, but will ensure that spaces become available for students who require the course in question for graduation.

Department Warnings about Scholastic Offences and Plagiarism Checking Software. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: http://www.uwo.ca/univsec/handbook/appeals/scholoff.pdf

All written work may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between Western University and Turnitin.com (http://www.turnitin.com).
Bibliography.


Osborne, Martin J. (2004), An Introduction to Game Theory, Oxford University Press (required textbook).

Please Note
Department Policies for 2014 – 2015

Remember that the University expects all students to take responsibility for their own academic Programs. Also remember to check your registration to make sure you are enrolled in the correct courses.

1. Guidelines and policies for the Faculty of Social Science and the Department of Economics are posted online in the current Western Academic Calendar at http://westerncalendar.uwo.ca.


3. **Cheating as an academic offence**: Students are responsible for understanding what it means to “cheat”. The Department of Economics treats cheating incidents very seriously and will investigate any suspect behavior. Students found guilty will incur penalties that could include a failing grade or being barred from future registration in other economics courses or programs. The University may impose further penalties such as a notation on your official academic transcript, suspension or expulsion.

4. **Plagiarism**: Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge it by using quotation marks where appropriate and referencing with footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the current UWO Academic Calendar at http://westerncalendar.uwo.ca/2014/pg113.html). The University of Western Ontario uses software to check for plagiarism and students may be required to submit their written work in electronic form. Those found guilty will have penalties imposed as noted in point 3.

5. It is Department of Economics policy that **NO** assignments be dated, stamped or accepted by staff. Students are responsible for submitting assignments in class or to the instructor during office hours.

6. When appealing a mark, students should refer to the University’s Procedures in the current UWO Academic Calendar (http://westerncalendar.uwo.ca/2014/pg112.html). Please note the relevant deadlines.

The Department will not consider any appeal unless an attempt has been made to settle the matter first with your instructor. If after this discussion you remain dissatisfied with a grade or other decision, you may proceed with a written appeal (e-mails are not acceptable) to the Undergraduate Director in Economics, stating the reasons for your appeal. A useful form and checklist is provided at (http://economics.uwo.ca/undergraduate/program_counselling/responsibilities_policies.html#appeals).
7. Systematic adjustments of a class grade distribution (either up or down) can occur in Economics courses. The fact that grades have been adjusted is not grounds for an appeal.

8. Note the following add and drop deadlines:

   Last day to add a Second term half course:
   **Tuesday, January 13th, 2015**

   Last day to drop second term half course without academic penalty:
   **Monday, March 9th, 2015**

9. Faculty of Social Science policy states that oversleeping or misreading an exam schedule is not an excuse for a make-up. This rule applies to all mid-term tests and final exams in the Department of Economics.

   **Policy Regarding Makeup Tests and Final Examinations**

   *Academic Accommodation will not be granted automatically on request. You must demonstrate by documentation that there are compelling medical or compassionate grounds before academic accommodation will be considered.*

   If you decide to write a test or an examination, you must be prepared to accept the mark you earn. Rewriting tests or examinations, or having the value of the test or examination reweighted on a retroactive basis, is not permitted. Book airline flights after you know the dates of your final examinations. Airline flights must not conflict with test or final exams.

   If you are requesting a makeup test for a midterm or a final examination, unless medically incapable, notify your instructor by email or phone, preferably prior to the scheduled date of the test, but definitely within **24 hours** of the date of the test or exam. Failure to follow this procedure may result in denial of a request for academic accommodation or result in a grade of zero. Set up an appointment as soon as possible to meet personally with your instructor. If the instructor is not available, you may send an email message, copying the Undergraduate Coordinator at econugrd@uwo.ca (Social Science Room 4075). **Notifying your instructor of a missed test or exam does not automatically entitle you to a makeup test.**

   Students who seek a makeup test or examination must provide medical or other relevant verification that their absence from a regularly scheduled test or examination is beyond their control. Documentation must support your reasons. Medical documentation should be given to the Academic Counselling Office of your *home* Faculty as soon as possible (preferably within **24 hours of the test**) if you know you may not be able to write your final examination on the scheduled day and time. Failure to follow this procedure, or to provide supporting documentation, may result in denial of a request for academic accommodation or result in a grade of zero. If your documentation is not acceptable, you will be given a zero for the missed test.
For personal illness, if you consult Student Health Services regarding your illness or personal problem, you should request a Student Medical Certificate from the physician. If you were seen by an off-campus doctor, obtain a certificate from his/her office at the time of your visit. The off-campus medical certificate form must be used and can be found at:  
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf. Notes stating "For Medical Reasons" are not considered sufficient.

For any other circumstances, if you are not sure what documentation to provide, ask your Academic Counselor. If your documentation is judged sufficient, the academic counselor will issue a Recommendation for a Special Examination (a single form for midterms or a triple color form for final examinations). Once you have this form, contact your instructor as soon as possible to make arrangements. Even if approved from your home faculty Academic Counselor, there is no guarantee that you will be allowed to write the makeup test and exam.

For final examinations, you need permission from your home Faculty Counsellor, your instructor, and the Department Undergraduate Director. Failure to follow this procedure may result in an examination grade of zero. You must ensure that the Special Examination form has been signed by the instructor and Department Undergraduate Director and that the form is returned to the Academic Counseling Office for approval without delay. Make-up final examinations, if permitted, will be written within one month of the end of the exam period.

Policies Regarding Academic Accommodation

Information about the Faculty of Social Science’s policies regarding academic accommodation is found on its website at http://counselling.ssc.uwo.ca/procedures/havingproblems.asp or in Social Science Room 2105. Your “Academic Rights and Responsibilities” are also outlined in the current UWO Calendar at http://westerncalendar.uwo.ca/2014/pg111.html. Claiming that “you didn’t know what to do” is not an acceptable excuse for not following the stated procedures.

Policy Regarding Class Attendance

If your instructor views your class attendance as unsatisfactory, you can be prohibited from writing the final examination. If there is intent to make use of this University policy, you will be notified in writing.

Statement on Mental Health and Support Services

If you or someone you know is experiencing emotional/mental distress, there are several resources here at Western to assist you. Please visit http://www.uwo.ca/uwocom/mentalhealth/ for more information and a complete list of resources, as well as how to obtain help.