Course Website: onQ page. All assignments will be posted online.

Lectures: The class will be held remotely for at least the first 6 weeks. The link is available through onQ.

Office Hours: Tu & Th 13:00-15:00.

Main References: No textbook required. However, you may find the following references useful: Game Theory in Action by Stephen Schecter and Herbert Gintis, 2016, and Evolutionary games and population dynamics by Josef Hofbauer and Karl Sigmund.

Description: This course highlights the usefulness of game theoretical approaches in solving problems in the natural sciences and economics. Basic ideas of game theory, including Nash equilibrium and mixed strategies; stability using approaches developed for the study of dynamical systems, including evolutionary stability and replicator dynamics; the emergence of co-operative behaviour; limitations of applying the theory to human behaviour.

Prerequisites: (MATH 120 or MATH 121 or MATH 124) and (MATH 110 or MATH 111 or MATH 112). Equivalency: MATH 239. Recommended: MATH 110 or MATH 111.

Grading Policy: Homework assignments (x5) 30%, Midterm 20%, Final Exam 50%.

Homework: There will be a total of 5 assignments. Students may choose to submit their homework assignments in groups of up to 4 students (make sure to clearly write the names and student numbers of all students in the group). Homework assignments must be submitted on or before the due date, no exceptions. Late submissions will not be accepted. All students in a group will receive the same mark on the assignment.

Midterm and final exam: There will be a single 48-hour take-home midterm exam. The final exam date, time, and location to be announced.

Class Policy:

• Queen’s University Academic Integrity Policies will apply (see https://www.queensu.ca/arts/sci/students-at-queens/academic-integrity).

• All written tests and exams will be closed book. Calculators are permitted.

• No collaboration is permitted during written exams.