

MATH 121 – WINTER 2017
GAME THEORY
JOHN BAEZ

Lectures: Tuesday & Thursday, 11:10 – 12:30 pm, Sproul 1340, with John Baez.

Discussions:

Section 2: Monday 8:10 – 9 am, CHASS Interdisciplinary South 1121, with Jolene Britton.

Section 3: Monday 2:10 – 3 pm, CHASS Interdisciplinary South 1121, with Kenny Courser.

Section 4: Monday 3:10 – 4 pm, Humanities and Social Sciences 1404, with Jolene Britton.

John Baez's office: Surge 248.

John Baez's office hours: Thursday 3:30–5:00 pm.

John Baez's email address: baez@math.ucr.edu

Grades: Homework will count for 40% of your grade. Quizzes and games in class and the discussion section will count for 15%. The midterm will count for 15%, and the final will count for 30%. I will use this formula to compute a numerical grade for you and at the very end of the course I will use my own special curve to determine your letter grade for the course. I won't give you letter grades until then.

Homework will usually be assigned on Tuesday of week n and due at the start of class on Tuesday of week $n + 1$. Get started on your homework early so you can ask Brandon and me for help!

Buy a clicker and register it for this course now! We'll use clickers to give quizzes in class and the discussion sections. You need to register your clicker *for this class* at

<https://clickers.ucr.edu/clicker/login>

If you don't register your clicker, you'll get a zero for every quiz. If you skip a quiz, your grade will be worse than if you get the wrong answer.

No calculators, notes, etc. are allowed on the midterm and final. Only bring paper, pen or pencil, and your brain.

No late homeworks will be accepted, and no makeup quizzes or tests will be given. Exceptions can be made only if you present a report from the police (in case of car accidents), a doctor's certificate (in case of illness), or a written invitation to an interview for a fellowship or scholarship.

If you want to learn, I will enjoy teaching you. But if you cheat, I will enjoy flunking you!

Website: Keep track of your grades, see assignments, and more on ILearn:

<http://ilearn.ucr.edu>

PLAN OF THE COURSE

The textbook for the course is online:

<http://math.ucr.edu/home/baez/games/>

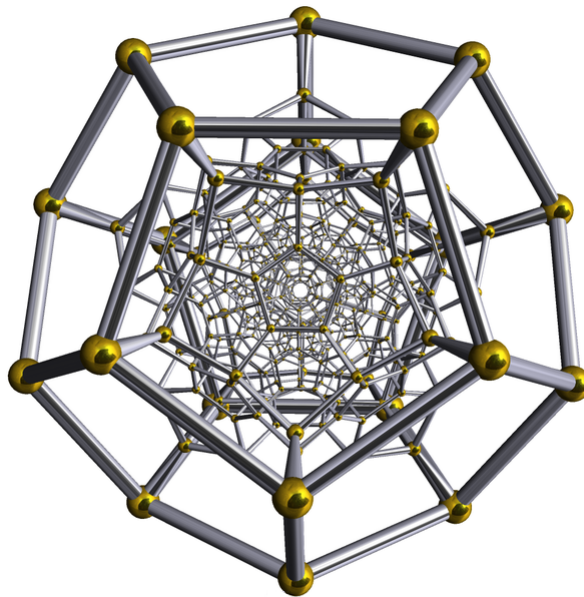
For each section, you can ask questions by going to where it says ‘On Azimuth’. That’s my blog. Post questions there and I’ll see them. But **it’s essential that you take good notes**—and if you miss a class, get the notes from someone who takes good notes.

We’ll cover at least these topics:

- The classification of games, and different contexts where games show up: economics, politics, biology and daily life.
- Two-player games with pure strategies: the concept of Nash equilibrium and the minimax method.
- One-player games of chance: calculating probabilities and expected values.
- Two-player games with mixed strategies: proof that a Nash equilibrium always exists.

Midterm: We’ll have the midterm sometime after you’ve learned about one-player games of chance.

Final: Thursday March 23, 11:30–2:30 in our usual classroom. The final will cover *everything I taught you!*



The universe is full of magical things, patiently waiting for our wits to grow sharper.