

Math 342 – The Mathematics of Social Choice (Spring 2014)

Instructor: Kevin Woods, King 220B, Kevin.Woods@oberlin.edu. Call me Kevin!

Lectures: MWF 2:30-3:20pm, King 239.

Office Hours:

Monday 3:30-5pm, Tues 12-2pm, Wed 3:30-5pm, Thurs 11am-12pm, and by appointment. Also, feel free to stop by any time my door is open (but be understanding if I say I am too busy).

Textbook:

None. I will either post suggested readings on blackboard or give you handouts of what I talk about in class. You are not responsible for anything not covered in class.

Prerequisites:

Discrete Math. The only important thing from Discrete is comfort with mathematical proofs and readiness for a 300-level math class. An implicit prerequisite is Calc I (a prereq for Discrete). In the last quarter/third of the class, we will need optimization using derivatives, simple integration, and an intuitive understanding of Riemann sums.

Blackboard:

I will post homework and other announcements on Blackboard.

Grading:

Problem Sets (40%),
Project (10%),
Two Take-Home Midterms (15% each),
Final Exam (20%).

Problem Sets (40%).

The best way to learn the concepts in this course is to get your hands dirty! I hope you will work in groups on these, though your written solutions must be in your own words. This is also an opportunity to work on writing careful, clear proofs and explanations. Good mathematics is articulate mathematics! Explain things carefully and in complete sentences. Imagine that another student in the class who hasn't done this problem yet will read your solution: they should be able to understand it without having to ask you questions. These problems will be graded very strictly for how coherently written they are. Problem sets will be due approximately every Wednesday.

Honor Code: You should (but aren't required) to work together on these problems, but your written solutions must be your own. In particular, you should never be reading someone else's solutions. Please indicate on your solutions who you worked with.

Late Work Policy: If they are handed in before 4:30pm that day, you get full credit. If they are handed in the next day before 4:30pm, you get 90%. Two days, 70%, three school days 50%, more than that 0%.

Project (10%).

You will work in groups of 2 or 3 on a topic not covered in the course. This could be a topic in the textbook or some other book, or it could be a topic from a journal article. Your group will give a presentation to the class on your topic (8-10 minutes * size of group), in the last couple of weeks of the semester. We will probably schedule special class times on the weekend to do this. I will give more information later about possible topics, requirements, etc.

Two Take-home midterms (15% each).

Tentatively due March 12 and Wednesday, April 16. These will be open notes, and you'll get several days to work on them. You are not allowed to talk to anyone about these questions. I'll give you more information as the time approaches.

Final Exam (20%).

Saturday, May 17, 7-9pm. The final exam will cover the entire course. It will be closed book, but you will be able to use something like an 8.5x11 sheet with notes.

Disabilities:

If you have a disability of any sort that may affect your performance in this class, please consult with me and with Jane Boomer in the Office of Disability Services. All requests for accommodation must go through that office.