

**Mathematics and Politics, Summer I, 2026**
**MATH 1007**



**Instructor:** Anthony Christiana

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**Class Meeting:**

**MTWR,** 4:00-5:30, Monroe Hall 115
5/18/26 - 6/25/26

**Textbook (optional):** *The Mathematics of Politics,* by E. Arthur. Robinson and Daniel. H. Ullman.

**Learning outcomes:** At the end of this course, students should be able to:

- Understand and explain different voting methods;
- Understand and identify different criteria of said methods;
- Prove certain theorems regarding these criteria, e.g, Arrow's theorem;
- Explain different apportionment methods and what criteria they satisfy;
- Recognize what properties certain methods satisfy that make them optimal;
- Identify different strategies in game theory and their outcomes;
- Model decision making scenarios through game theoretic means;
- Apply mathematical reasoning to politics and describe political scenarios in a mathematical language.

**Homework:** Some short homework problems will added to a list every class (except before exams). Each **Monday**, I will collect your solutions from the previous week and return them by Friday.

**Quizzes & Exams:**

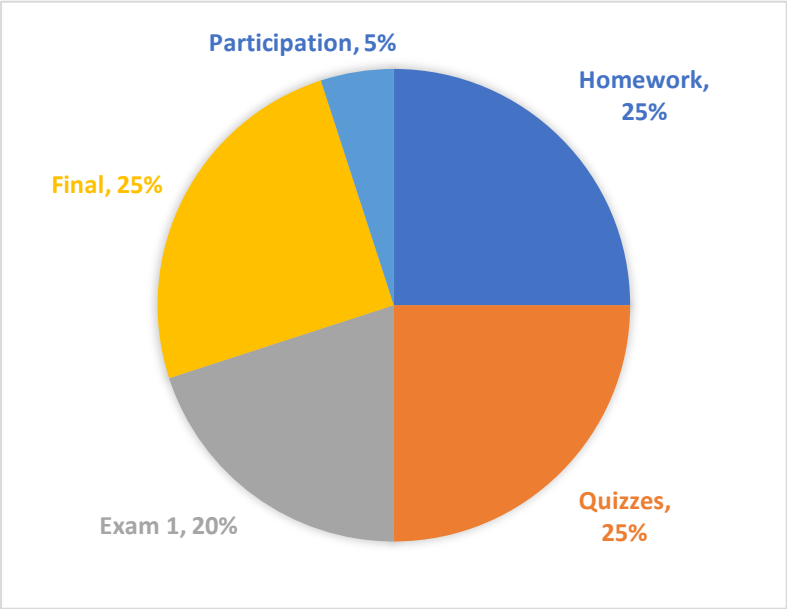
1. **Quiz #1:** Thursday, May 21
2. **Quiz #2:** Thursday, May 28
3. **Exam #1:** Thursday, June 4
4. **Quiz #3:** Thursday, June 11
5. **Quiz #4:** Thursday, June 18
6. **Final Exam:** Friday, June 25

**Topics Schedule:** For this six-week course, we will spend two weeks each on **Voting, Apportionment,** and **Game Theory,** in that order. If you have any suggestions for points of emphasis, please let me know and I can try and accommodate.

**Grading:** I'll post all the grades on Blackboard (hopefully) relatively quickly. Please let me know if you notice a mistake.

As far as "Participation" goes, you can think of this more as "engagement with the course." That is, you don't need perfect attendance, nor to constantly have your hand in the air, but to generally be an active member of what will be a small class!

**Office Hours:** I will stick around after every class for lingering questions. Otherwise, you can shoot me an email and we can meet in-person or over Zoom, as I have a lot of flexibility in the summer.




**Calculator policy:** Calculators are NOT allowed during exams. But if you bring in an abacus, slide rule, or compass, I won't stop you.

**Accommodations:** Accommodations will be considered case by case according to university policies. All requests must be based on medical emergency, disability, religious observance, three finals on one day or other acceptable circumstances in accordance with university policies. To be considered, you must inform me your situation **by email** appropriately **in advance** and provide written documents from appropriate sources to substantiate your claim.

**Academic integrity:** All students are expected to know and work in compliance with the GWU Code of Academic Integrity. It states: "Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information." For the remainder of the code, see: http://www.gwu.edu/~ntegrity/code.html

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Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: http://gwired.gwu.edu/dss/

**UNIVERSITY COUNSELING CENTER (UCC)**

The University Counseling Center (UCC) offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include:

- crisis and emergency mental health consultations
- confidential assessment, counseling services (individual and small group), and referrals

Phone: 202-994-5300

Website: http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices