Math 494: Cryptography and War:
How Mathematicians Saved Democracy
Course Syllabus

Course Goals: This upper-division course has two goals. The first is to explore the mathematics of cryptography and cryptanalysis. In the process of doing so, we will investigate several other areas of mathematics including linear algebra, number theory, and probability. The second goal of this course is to provide a unique study-abroad experience. To meet this goal there will be a number of field trips that will enhance our study of mathematics.

Prerequisite: Math 250 or Math 160 with C- or better.

Participation: I expect every member of this course to be an active participant. That means that you must do all homework necessary to prepare for class, be willing to present material to your classmates, and be active in group and individual exercises. Attendance in class is mandatory. An unexcused absence will result in significant loss of participation points, and repeat offenders will be sent home.

Class: The class will meet Monday through Friday from 9-12 in the morning, starting Tuesday, January 7 and ending Thursday, January 23.

Field Trips: The class will include six mandatory field trips. The field trips will all be paid for as part of your tuition. The time, meeting place, and any additional details will be provided later. The tentative field trip schedule is:

Monday, January 6 (1:30 pm)	British Museum (Short walk)
Monday, January 15 (2 pm)	Churchill War Rooms
Thursday, January 16 (8 am)	Bletchley Park (Train)
Monday, January 20(1pm)	Science Museum
Wednesday, January 22 (1:30pm)	Top Secret Location Wait for Encrypted Message

Additionally, the following events will take place for all the London classes:

Monday, January 6	Orientation/ Opening Dinner
Thursday, January 8 (7:30 pm)	Hamilton Musical
Saturday, January 11 (10 am)	Tate Modern (Optional)
Saturday, January 18 (8am)	Trip to Oxford (Optional)
Friday, January 25	Farewell Dinner Cruise

Free Time: You can feel free to plan side trips or other activities on the weekends starting after class on Fridays. There are only optional events on the weekends.

Homework: There will be nightly assignments in this class which must be completed by the next day. These will make up a high percentage of your grade and you should expect to spend several hours a day on them. The solutions must be written up clearly and, whenever possible, in complete sentences.

Exams: There will be two exams in this course: one hour midterm on Wednesday, January 16 (taken during last part of class time) and a comprehensive two-hour final exam on Friday, January 24.

Plagiarism: The work you turn in must be your own. You may work together on the homework assignments but what you turn in must be your own understanding of how to solve the problem. The best way to ensure this is write up your solutions by yourself after you have worked together on the problem. **Copying from another student or another source without proper documentation is a violation of academic integrity and will not be tolerated.**

Grading: Your grade will be determined by the following assignment of points:

Participation in Class	10 Percent
Participation in Field Trips	10 Percent
Homework	28 Percent
Midterm	24 Percent
Final	28 Percent
Total	**100 Percent**

YR MV RX IV RK KZ DV ZE CF EU FE !