INSTRUCTOR
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COURSE
name: History of Early Mathematics (section 1-code 3069)
meeting time: TTh at 2:00-3:15 p.m.
meeting place: LA5-171
text: Notes
materials: A reasonable calculator
prerequisites: Concurrent enrollment in or completion of a 200-level math class. But mathematical sophistication and maturity will be appreciated.
description: The course is a review of the development of mathematical ideas through the ages. It will follow a chronological order with the purpose to gain insight as to the depth and subtlety of a particular subject. It will also use some central individuals in mathematics as pivots to describe the times and topics relevant to that individual. Although we will always be relying in history to lead us through, and we will be looking at the lives of some of our characters, do not expect a bushel of anecdotes (see Bibliography below).
tentative syllabus: The (tentative) list of topics for the course, together with the respective chapters in the book are given below:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Days</th>
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<th>Topic</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roots</td>
<td>2</td>
<td>Egypt and Mesopotamia</td>
<td>2</td>
<td>Greek Beginnings</td>
<td>2</td>
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<tr>
<td>Athens</td>
<td>1</td>
<td>Early Alexandria</td>
<td>4</td>
<td>Greek Twilight</td>
<td>2</td>
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<td></td>
<td></td>
<td>Midterm Exam</td>
<td></td>
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<tr>
<td>India and Islam</td>
<td>2</td>
<td>China</td>
<td>1</td>
<td>Middle Ages</td>
<td>1</td>
</tr>
<tr>
<td>Early &amp; Late Renaissance</td>
<td>3</td>
<td>Gateway</td>
<td>4</td>
<td>Birth of Calculus</td>
<td>2</td>
</tr>
</tbody>
</table>

bibliography: Naturally, there are many books on the history of mathematics. Some of my favorite authors are: Kline, Boyer, David, Dunham, Hollingsdale and Eves. It is particularly important in history that you get other perspectives besides mine.
goals & objectives: There are five major objectives in the course, to improve your performance in each of the following: mathematical reading, mathematical writing, mathematical problem solving, mathematical rigor, and knowledge of (mathematical) historical names, places and facts.
### Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

### ADMINISTRATIVE

**timeliness**
- Everything should be on time when assigned unless compelling reasons exist.

**make-up policies:**
- A make-up exam will be considered when you inform me ahead of time and have a reasonable excuse, or other very special circumstances.

**last day to drop:**
- **Friday, November 18th, 2016** is the last day to drop the course without the Dean’s signature. If you intend to drop, please secure my signature in plenty of time. Additionally, since this course has high enrollment, and some students have not been able to register, if you do not make a serious effort to succeed in the course, you will not be allowed to drop.

**Disability**
- Please inform me as soon as possible, but certainly within two weeks from the start of the course, of any assistance you may need to deal with any university-verified disability/special need.

### ASSESSMENT
- You will be assessed in all five objectives.

**Tests**
- Midterm Exam  Tuesday, October 11  25%
- Final Exam    Thursday Dec. 15, 12:30  25%

The tests will test your recollection of simple historical facts by fill-in-the-blank questions, your reading and writing ability by asking to write a short essay based on some assigned readings in the text, your ability to reproduce preselected proofs from the text, and your problem-solving ability by asking you to solve problems similar (but definitely not identical) to previous homework problems. You will receive test helpers before each exam.

**Homework**
- Every week, homework will be posted on the web with its due date. Homework should not be late. It will be picked up at the beginning of the class. Team work for the homework is acceptable (if not preferred). Usually, as in most of the courses I teach, a student who has done her/his homework performs adequately in problem solving part of the exams. 18%

**Class Activities**
- At least 6 times during the semester you will be given a mathematical activity relevant to the material being covered to be worked on in groups 10%

**Impromptu Essays**
- At least 4 times during the semester you will be given 15 minutes to write a short essay describing your opinion on some relevant topic to the class. 7%

**Research Project**
- You and your team (of at most 3 students) will follow up the historical roots of some mathematical topic relevant to K-12 math education. 10%

**Class Participation**
- Class participation is mainly based on your contributions to the class environment, as measured by me. The final grades will be assigned (approximately) traditionally 5%