



**GOSHEN COLLEGE**  
**MATHEMATICS DEPARTMENT**  
**MATH 411 HISTORY SEMINAR - SPRING 2021-22**

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<b>Catalog Description</b>	(1 credit hour) A brief survey of the history of mathematics.
<b>Learning Goals</b>	<p>By the end of the course, students will</p> <ol style="list-style-type: none"><li>1. Demonstrate knowledge of the historical development of numbers, number systems, algebra, Euclidean and non-Euclidean geometries, calculus, discrete mathematics, probability and statistics, and measurement and measurement systems, including contributions from diverse cultures;</li><li>2. Learn mathematics by reading, listening, exploring, and conversing in an effective manner; and</li><li>3. Exhibit curiosity, playfulness, creativity, confidence, perseverance, interest in multiple perspectives, and a collaborative spirit.</li></ol>
<b>Prerequisites</b>	Junior or Senior standing.
<b>Class Time</b>	T 12:30 – 1:45pm in SC 107.
<b>Structure</b>	This is a seminar, not a lecture, course. It depends heavily on the attendance and active participation of all who are enrolled.
<b>Textbook</b>	<i>Math through the Ages: A Gentle History for Teachers and Others Expanded Second Edition</i> , by William P. Berlinghoff and Fernando Q. Gouvêa, Mathematical Association of America, 2015, ISBN: 978-1-93951-212-3. We will cover almost all of the text. The first part of the text is an abbreviated history of math. The second part of the text contains sketches of historical topics. These chapters are relatively short – two to three chapters will be assigned each week to be discussed during class.
<b>Online</b>	<a href="https://moodle.goshen.edu">https://moodle.goshen.edu</a>
<b>Grading</b>	Course grades will be based on class participation (30%), class leadership (10% or more), a biographical paper and presentation (30% or less), and a topical paper and presentation (30% or less).
<b>Class Participation</b>	Before class, prepare by reading the assigned sections of the text and taking notes of the interesting ideas and questions. During class, be attentive, engage in activities, ask questions, and offer ideas.
<b>Class Leadership</b>	Lead at least one class. Leading the class involves suggesting a subset of exercises to be examined by everyone before class, preparing interesting questions for discussion and/or activities to engage participants in deepening their understanding of the ideas in the sections covered, facilitating the discussion and activities in a manner that help all participants learn, and posting an accurate and detailed summary of class discussion and activities with a focus on what was learned, the diversity of ideas presented, and the questions that remain. Each individual and pair class lead is worth 10% and 5% of your course grade. You must lead for 10% of your grade and extra leads can be used to reduce how much the final papers are worth.

<b>Biographical Paper and Presentation</b>	In consultation with the instructor, choose a mathematician. Write a paper and give a presentation based on the following questions: What contributions did the mathematician make to mathematics and/or its applications? In what ways were these contributions significant? How did prominent historical features (e.g., the political situation, societal situation, scientific progress, religious movements, and what was happening in literature or the arts) influence the mathematician? In what ways did personal events influence the mathematician's work? Reference at least three reliable sources with at least two being books or journal articles. This paper will be due and the presentation given during the seventh class meeting.
<b>Topical Paper and Presentation</b>	In consultation with the instructor, choose a mathematical idea. Analyze, in depth, the historical development of the chosen mathematical idea. Include relevant historical events to provide context. Reference at least three reliable sources with at least two being books or journal articles. This paper will be due and the presentation given during the scheduled Final Exam period (Wednesday, April 27, 3:30 – 5:30pm).
<b>Tutoring</b>	The Academic Success Center provides tutoring and writing support for free to all undergraduate students. Make an appointment at <a href="http://goshen.edu/asc">goshen.edu/asc</a> . Unfortunately, there is no current student who has previously taken this course. Therefore, your best bet to receive assistance is to make use of David's office hours.
<b>Disability Services</b>	Goshen College is committed to providing all students equal access to programs and facilities. Students who need accommodations based on disability should contact the Director of the Academic Success Center (ASC). Students must register with ASC before faculty are required to provide reasonable accommodations. For more information or to register, please contact the Director of the ASC, Judy Weaver, Good Library 112, <a href="mailto:jweaver@goshen.edu">jweaver@goshen.edu</a> or 574-535-7560. To ensure that learning needs are met, contact the director of the ASC the first week of classes.
<b>Collaboration and Academic Integrity</b>	<p>You are encouraged to use all available resources in order to learn the concepts and techniques discussed in this course. In particular, conversations with other students and the instructor can be an effective learning method. Reading other books and web pages can be another effective learning method. However, copying someone else's work subverts the learning process.</p> <p>For papers, you are encouraged to look at and discuss each other's drafts. You should give written acknowledgement to people who have given you feedback, and the ideas and text from any written materials should be appropriately cited and quoted.</p> <p>Failure to observe the above rules will result in a penalty ranging from a zero on the assignment or exam to immediate failure of the course. Any violation of academic integrity will be reported to the Academic Dean.</p> <p>Observation of the above rules will help you learn the material well and give you the satisfaction of knowing that you have earned your grade.</p>
<b>Due Date Policy</b>	Class participation, class leadership, papers, and presentations can only be excused, rescheduled, or made up if (1) there is a serious medical problem, a death in the immediate family, or an irreconcilable conflict with another official Goshen College activity; (2) there is written documentation signed by proper authorities; and (3) the instructor is notified prior to the due date or as soon as possible afterwards.