ST. PETERSBURG COLLEGE

COLLEGE OF EDUCATION

*The mission of the Education Community is to prepare future educators*

*who will promote lifelong learning and empower diverse communities.*

COURSE SYLLABUS

**MHF 4404: History of Mathematics**

**Fall 2023 {0625}**

*The syllabus course calendar and other attending documents are subject to change during the semester in the event of extenuating circumstances.*

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| **Course Prefix:** | MHF 4404 |
| **Section #:** | 3032 |
| **Credit Hours:** | 3 |
| **Co-requisites:** | None |
| **Pre-requisites:** | MAC 2311 with a minimum grade of C |

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| **Day, Time and Campus:** | Online |
| **Modality:** | Online - Weekly participation is required for attendance. Participation in this course is defined as posting to the discussion board or submitting an assignment. |
| **Professor:** | Dr. Andrea Kelly   |
| **Office Hours:** | Posted: <http://web.spcollege.edu/instructors/id/kelly.andrea/OFC/>    |
| **Office Location:** | Tarpon Springs; BB-110 |
| **Office Phone:** | (727) 791 - 2667   |
| **Email Address:** | kelly.andrea@spcollege.edu    |

**ACADEMIC DEPARTMENT: College of Education**

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| **Dean:** | Kimberly Hartman, Ph.D. |
| **Office Location & Number:** | Tarpon Springs | BB 101 |

1. **COURSE DESCRIPTION**

This course is designed for students who have an interest in the history of mathematics. It is a chronological study of mathematics starting prior to sixth century B.C. and ending with present time. Students will examine historical developments as well as connections within mathematics through readings, discussions, and applications.

1. **MAJOR LEARNING OUTCOMES AND COURSE OBJECTIVES**
2. The student will explain the significance of early mathematics and its historical development by:
	1. solving mathematical problems using Egyptian methods.
	2. reading and writing numbers in cuneiform notation.
	3. translating numbers into sexagesimal notation.
	4. solving problems related to early mathematics.
	5. identifying and explaining the importance of mathematical artifacts dated prior to sixth century B.C.
	6. researching contributions of mathematicians from the classical period (sixth to fifth century B.C.).
	7. solving mathematical problems using Babylonian methods.
3. The student will summarize the historical development of medieval and Renaissance mathematics by:
	1. researching methods and the contributions of mathematicians from the sixth to sixteenth century B.C.
	2. analyzing mathematical works published from the sixth to sixteenth century B.C.
	3. solving problems using the methods of mathematicians from the sixth to sixteenth century B.C.
4. The student will discuss the role of early modern mathematics and its historical development by:
	1. comparing and contrasting modern coordinate geometry with the analytic geometry of Descartes that combined the methods of both algebra and geometry.
	2. analyzing the significance of and the opposition to the theories of Copernicus and Galileo.
	3. describing the work of mathematicians during the seventeenth and eighteenth centuries.
	4. describing the primary reasons for the dispute between Newton and Leibniz regarding calculus.
5. The student will summarize the development of mathematics during and after the modern period by:
	1. describing the advances made in the realm of non-Euclidean geometry.
	2. describing the obstacles faced by women mathematicians.
	3. describing the contributions of mathematicians during the nineteenth and twentieth centuries.
	4. identifying contributions to mathematics after the twentieth century.
6. **REQUIRED TEXTBOOK(S), RESOURCES AND MATERIALS**
7. **Required Textbooks**

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| Textbook(s) | Required: Burton, D. (2011). The History of Mathematics (7th ed.). McGraw-Hill; 9780073383156 |
| Recommended:  |
| **Anthology Portfolio** | Anthology Portfolio is a requirement for students enrolled in all College of Education bachelor’s degree programs (Secondary Mathematics Education, Middle Grades Mathematics Education, Exceptional Student Education, Elementary Education, Educational Studies) and for all Educator Preparation Institute (EPI) students. |

Students using **eBooks** must have access to the **eBooks** during class sessions.

1. **Supplemental Material**

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| Resources: |
| Materials: Webcam for Live Online classes. |
| Library: | <http://www.spcollege.edu/libraries/> |

1. **Technology**

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| Technology is an essential tool for receiving and developing instruction. Students are expected to reference MYCOURSES continuously to assure all current content for class has been accessed.  |
| All work must be submitted in an original electronic file format unless otherwise specified. Links to files are not acceptable. |

1. **COURSE REQUIREMENTS & EXPECTATIONS**
2. **School Based Hours (SBH) or Field Experience Hours (FEH) Course Requirements**

This course requires **0** hours of observation/participation in an appropriate setting as approved by the Office of School Partnerships.

Any student who is registered for a course with SBH/FEH is required to complete the application in Anthology Portfolio by the due dates specified by the OSP to guarantee placement.

1. **ALL Course Assignments**

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| **Assignments**   | **Weight**   |
| Attendance\*   | 10%   |
| Discussions  | 10%   |
| Infographics | 20%   |
| Quizzes   | 20%   |
| Timeline | 10%   |
| Weekly Assignments   | 30%   |
| **TOTAL**   | **100%**   |

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| **Grading Scale**  |
| 90% – 100%  | **A**  |
| 83% – 89%  | **B**  |
| 75% – 82%  | **C**  |
| 68% – 74%  | **D** (Repeat course)  |
| 67% or less  | **F** (Repeat course)  |

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\*Students who exceed the maximum number of absences allowed for this class will receive 0% for attendance. If the absences are due to extenuating circumstances (e.g., death in the immediate family or military duty) and there is an agreement in writing between the student and the instructor, the student will be given an assignment and the grade earned on that assignment will determine the percentage entered for attendance. For example, if a student completes the assignment at 80%, then 8% will be entered for attendance.

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| ***UCC Assignments:*** *Teacher candidates must demonstrate Uniform Core Curriculum (UCC) competencies and earn a 2 or higher for each indicator on all UCC assignments [FEAP, ESOL, FSAC, Reading Competencies (RC), Other Elements and Florida State Standards (FSS)] in order to successfully pass the course.* *Educational Studies students must earn a 2 or higher on each indicator on all PLO assignments.**If the teacher candidate has not successfully demonstrated the UCC competency as stated above, he/she may have an opportunity (within the term) to work with the instructor to improve the understanding of the concept. The assignment must then be corrected and resubmitted, and will not receive a grade higher than a C.  In the event of cheating or plagiarizing, see BOT Rule 6Hx23-4.72 for consequences.**Students in a degree program must upload into Anthology Portfolio all FEAP, ESOL, PLO, and RC assignments (identified as Critical Reading Tasks) as denoted in the Uniform Core Curriculum Assessments table at the end of the syllabus.* |

*For courses with lesson planning:*

Adapting or modifying a lesson plan from an existing source (i.e., the internet) does not mean “copy and paste.”  It means that, if you use someone else’s intellectual property for this purpose, you may read through the given source for ideas, but then rethink and rewrite the idea in your own words with your own modifications to meet the needs of the assignment.  Anything adapted or used verbatim must be cited with credit given to the author(s).  This includes specific citations on all supplementary materials (i.e., assignment sheets, graphic organizers, checklists) that are not originally your work.  This applies to all COE lesson plans unless the instructor directly specifies otherwise.

1. **Assignment Late Policy**
* Submissions for discussions and quizzes will not be accepted after the due date.
* Assignments submitted up to one week after the due date will receive a 10% grade reduction.
* Assignments not submitted within one week after the due date will receive a zero in the grade book.
1. **SYLLABUS STATEMENTS COMMON TO ALL COE SYLLABI**
2. **COE SYLLABUS STATEMENTS**

<https://docs.google.com/document/d/1VrvFtlW9RPl2YgbSrHdstAkktd-BtneMQuttI5khNzQ/edit?usp=sharing>

1. **SPC Syllabus Statements**

<http://www.spcollege.edu/addendum/>

***Each student must read all topics within this syllabus and the content of the links.  If the student needs clarification on any items in the syllabus or linked statements, he/she should contact the course instructor.***

***If you remain enrolled after the drop date this signifies that you agree to abide fully by the parameters set in this syllabus and any syllabus addendum.***

1. **CALENDAR AND TOPICAL OUTLINE**

No assignments will be accepted after the last date to submit posted on the syllabus/calendar/MyCourses.

| **Week** | **Week of** | **Topic / Activity**Discussions and quizzes will not be accepted for late submission. ***All assignments are due on Wednesday by 11:30 pm*** |
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| 1 | Aug-14  | * Pre-Test, due Aug-16
* Syllabus and Course Overview
* The Story of One Video
* Assignment 1: The Story of One, due Aug-16
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| 2 | Aug-21  | **Early Beginnings (before 6th Century B.C.)*** Review Chapter 1
* Review Chapter 2
* Quiz 1: Early Beginnings, due Aug-23
 |
| 3 | Aug-28  | **Early Beginnings** <continued>* Early number systems and symbols (chap. 1)
* Mathematics in Early Civilizations (chap. 2)
* Assignment 2: Early Beginnings, due Aug-30
 |
| 4 | Sep-4  | **Classical Period (6th Century B.C. to 5th Century A.D.)*** Review Chapter 3
* Review Chapter 4
* Quiz 2: Classical Period, due Sep-6
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| 5 | Sep-11  | **Classical Period** <continued>* The beginnings of Greek Mathematics (chap. 3)
* Thales
* Pythagoras
* The Alexandrian School (chap. 4)
* Euclid
* Eratosthenes
* Archimedes
* Assignment 3: Classical Period, due Sep-13
* Infographic 1: Classical Period, due Sep-13
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| 6 | Sep-18  | **Medieval & Renaissance Period (6th to 16th Century A.D.)*** Review Chapter 5
* Review Chapters 6 and 7
* Quiz 3: Medieval & Renaissance Period, due Sep-20
 |
| 7 | Sep-25  | **Medieval & Renaissance Period** <continued>* The Twilight of Greek Mathematics (chap. 5)
	+ Diophantus
	+ Hypatia
* Mathematics in the near and far east (section 5.5)
	+ Al-Khowarizmi
* The first Awakening (chap. 6)
	+ Fibonacci
* The Renaissance of Mathematics (chap. 7)
	+ Cardan
	+ Tartaglia
* Assignment 4: Medieval & Renaissance Period, due Sep-27
* Infographic 2: Medieval & Renaissance Period, due Sep-27
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| 8 | Oct-2  | **Early Modern Period (17th and 18th Centuries A.D.)*** Review Chapter 8
* Review Chapter 9
* Review Chapter 10
* Quiz 4: Early Modern Period, due Oct-4
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| 9 | Oct-9  | **Early Modern Period** <continued>* Discussion 1: Classical to Early Modern Period, due Oct-11
* The Mechanical World (chap. 8)
* Agnesi
* Galileo
* Descartes
* Newton
* Leibniz
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| 10 | Oct-16  | **Early Modern Period** <<continued 2>>* The Development of Probability Theory (chap 9)
* Pascal
* Bernoulli
* Laplace
* The Revival of Number Theory (chap. 10)
* Mersenne
* Fermat
* Euler
* Gauss
* Assignment 5: Early Modern Period, due Oct-18
* Infographic 3: Early Modern Period, due Oct-18
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| 11 | Oct-23  | **Modern Period (19th and 20th Centuries A.D.)*** Review Chapter 11
* Review sections 13.1, and 13.3
* Quiz 5: Modern Period, due Oct-25
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| 12 | Oct-30  | **Modern Period** <continued>* Nineteenth-Century contributions (chap. 11)
* Lobachevsky
* Bolyai
* Riemann
* Riemann Extensions and Generalizations (section 13.1)
* Kovalevsky
* Young
* Ramanujan
* Assignment 6: Modern Period, due Nov-1
* Infographic 4: Modern Period, due Nov-1
 |
| 13 | Nov-6  | **Current Day (after the 20th Century A.D.)**Assignment 7: Current Day, due Nov-8 |
| 14 | Nov-13  | Discussion 2: After the Early Modern Period, due Nov-15Post-Test, due Nov-15  |
| **Thanksgiving Break {Nov. 19 – 25} College Closed** |
| 15 | Nov-27 | Complete and submit the Timeline Assignment, due Nov-29 |

1. **Uniform Core Curriculum / Program Learning Objectives Assignments**

***There are no UCC assignments in this course.***

[ UCC Tables for Active Courses.xlsx](https://nam02.safelinks.protection.outlook.com/ap/x-59584e83/?url=https%3A%2F%2Fspcollegeedu-my.sharepoint.com%2F%3Ax%3A%2Fg%2Fpersonal%2Fcaruana_victoria_spcollege_edu%2FEUkz7J7OnDlCn0a88jTI28wBD3Qmg5VG1aGcZwmsdFVh-A&data=05%7C01%7CKelly.Andrea%40spcollege.edu%7Cedbd30db05bc4f4923fa08db83dea498%7C575038c8ac704295810e0df79c005f41%7C0%7C0%7C638248764545686423%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=QPFthw2tXpLb5bJD0Aa2KjXyXlkIhEKCm8rYP8eVQXQ%3D&reserved=0)

This course offers opportunities for students to engage with the following Universal Design for Learning (UDL) General Understandings and Essential Components (1.0s and 2.0s): Not mapped on UDL framework.