



CHIPOLA COLLEGE

COURSE SYLLABUS

Chipola's website: www.chipola.edu

COURSE TITLE:

History of Mathematics

COURSE NUMBER:

MHF 4404

COURSE DESCRIPTION (with prerequisites):

This course is designed as a capstone course for those students who are majoring in middle school and secondary mathematics education. This course consists of readings in the history and philosophy of mathematics and in current issues involving mathematics and society. Contributions from mathematicians such as Archimedes, Descartes, Fermat Newton, Leibnitz, Euler and Gauss are discussed. Emphasis is given to how mathematics relates across disciplines as well as mathematical connections within the discipline; fundamental ideas of high school mathematics are examined from an advanced standpoint. This is a writing-intensive course in which each student develops a portfolio of course accomplishments. This course addresses specific state-adopted standards, subject matter competencies, and pedagogy pertinent to the discipline and required for certification. Corequisites: MAE 4330 and MAE 4941. 3 semester hours credit

NAME(S) OF INSTRUCTORS:

Dr. Irma Cruz-White

EFFECTIVE ACADEMIC YEAR:

2015-2016

REQUIRED TEXTBOOKS AND INSTRUCTIONAL SUPPLIES:

A History of Mathematics, Jeff Suzuki, Prentice Hall, 2002.

ISBN 10: 0-13-019074-8

ISBN 13: 978-0-13-019074-1

GRADING POLICY:

The standing of a student in each course is expressed by one of the following letters and corresponding grading system:

A – 90 – 100

B – 80 – 89

C – 70 – 79

D – 60 – 69

F – 59 or less

The Chipola Catalog provides policies and procedures regarding the grading system. A student's Grade Point Average is derived from the grading system/quality point scale.

ATTENDANCE AND WITHDRAWAL POLICIES:

Chipola College expects regular attendance of all students. Students who are absent from classes for any reason other than official college activities must satisfy the instructor concerned that the absence was due to illness or other clearly unavoidable reasons. Otherwise, the student may suffer grade loss at the discretion of the instructor. Chipola policy allows each instructor to specify in the Instructor First Day Handout whether or not an absence is excusable and what affect the absence or tardy may have on the grade.

A student is allowed to repeat a course a maximum of three (3) times. **On the third attempt a student (1) must bear the full cost of instruction (unless waived by Student Services), (2) cannot withdraw, and (3) must receive a grade.**

MAKE-UP POLICY:

Chipola allows each instructor to specify in the Instructor First Day Handout the makeup policy.

ACADEMIC HONOR CODE POLICY:

Students are expected to uphold the Academic Honor Code. Chipola College's Honor Code is based on the premise that each student has the responsibility to (1) uphold the highest standards of academic honesty in his/her own work; (2) refuse to tolerate academic dishonesty in the college community; and (3) foster a high sense of honor and social responsibility on the part of students. Further information regarding the Academic Honor Code may be found in the Chipola Catalog, Student Governance section.

STUDENTS WITH DISABILITIES POLICY:

Chipola College is committed to making all programs and facilities accessible to anyone with a disability. Chipola's goal is for students to obtain maximum benefit from their educational experience and to effectively transition into the college environment. Students with disabilities are requested to voluntarily contact the Office of Students with Disabilities to complete the intake process and determine their eligibility for reasonable accommodations.

LIBRARY AND ON-LINE REFERENCE MATERIALS:

The library is a comprehensive learning resource center providing information in print, electronic, and multimedia format to support the educational objectives of the College. On-line catalogs, e-books and electronic databases can be accessed by using the *LINCCWeb* icon on the Chipola Library website at www.chipola.edu/library. If you have questions about database usage consult the "How to Use the Chipola Databases" on the Library website or call the Library at 850/718-2274 during regular hours. Library hours are posted each semester at the building entrance and on the Library website. See your Instructor First Day Handout for individual instructor recommendations and resources.

TECHNOLOGY RESOURCES:

The college's learning management system is **Canvas**. Classes become available on Canvas on the first day of the semester. It is the student's responsibility to log onto the Canvas system the first day of class to establish the first day of attendance and to check announcements. All official class communication must be through Canvas. For further information, contact your instructor or the Director of eLearning. The Canvas support hotline is available online in live chat and on the phone, toll-free, at 855-308-2812 for any issues in accessing or utilizing Canvas. The **Information Technology Center**, located in the library, is equipped with computer workstations. Lab hours are posted each semester at the building entrance and on the Library website.

FREE TUTORING RESOURCES:

The Academic Center for Excellence (**ACE**) Lab, located in Building L, offers free tutoring from 8 a.m. to 5 p.m. and is equipped with computer workstations. ACE lab hours are posted each semester at the room entrance and on the website. Additionally, Chipola College has contracted **Smarthinking**, a Pearson Company, for online tutoring services, accessible especially from 5 p.m. to 8 a.m. and weekends. Smarthinking can be accessed through Canvas.

ELECTRONIC DEVICE USAGE STATEMENT:

Classrooms should be free of all unnecessary distractions from the task of learning. Therefore, as a general rule, students should silence and avoid use of all electronic devices (laptops, phones, tablets, etc.) not being used for coursework. Consult first-day handouts for any specific policies related to the use of electronic devices in the classroom, as they may vary depending upon the nature of the course or the guidelines of the instructor. Faculty reserve the right to regulate the use of electronic devices and their accessories in class.

DISCIPLINE SPECIFIC COMPETENCIES / LEARNING OUTCOMES:

ED Outcome 1: Demonstrate understanding of instructional design and lesson planning by applying concepts for human development and learning theories.

ED Outcome 2: Demonstrate ability to maintain a student-centered learning environment that is safe, organized, equitable, flexible, inclusive, and collaborative.

ED Outcome 3: Demonstrate effective instructional delivery and facilitation by utilizing deep and comprehensive knowledge of exceptional student education.

ED Outcome 4: Demonstrate understanding of assessment by analyzing and applying data from multiple assessments to diagnose learning needs and inform instruction.

ED Outcome 5: Demonstrate continuous improvement by designing purposeful goals to strengthen instructional effectiveness and impact student learning.

ED Outcome 6: Demonstrate professional responsibility and ethical conduct and fulfill expected obligations to students, the public, and the education profession.

LINKING COURSE-LEVEL STUDENT LEARNING OUTCOMES WITH DISCIPLINE-SPECIFIC COMPETENCIES, ASSESSMENT METHODS, AND ARTIFACTS

STUDENT LEARNING OUTCOMES FOR MHF 4404 The student will:	NCTM Standards Middle Grades Mathematics	NCTM Standards Secondary Mathematics	FL Competencies and Skills:		Assessment Activities/ Assignments
			Subject Area Mathematics 5-9	Subject Area Mathematics 6-12	
The student will gain an understanding of the historical development of: number systems and measurement systems, practical mathematics of various cultures, various geometries, algebra, trigonometry, calculus, probability, methods of solving equations, number theory, and discrete mathematics.	Standard 1a: B.1.5, B.2.5, B.3.10, B.4.6, B.5.3	Standard 1a: A.1.5, A.2.7, A.3.10, A.4.6, A.5.6, A.6.5		4.12	UT, H, PS
Students will prepare and present a biography of a well-known mathematician.	Standard 6: 6c	Standard 6: 6c			RPT
Students will present a lesson plan that incorporates mathematics history.	Standard 2: 2f	Standard 2: 2f	4.1		RPT
Students will build a resource notebook with collections of historical problem solving activities that can be applied to the mathematics classroom of today.	Standard 6: 6c	Standard 6: 6c			Proj.
The student will research a peer-reviewed article in his or her content area, selecting an outstanding article, and then writing a formal article review.	Standard 6: 6c	Standard 6: 6c			RP, W

**Assessment Codes			
T = Tests Pre/Post = Pre- and Post-Tests OT = Objective Tests UT = Unit Tests Q = Quizzes F = Final Examination CF = Cumulative Final EX = Departmental Exam SE = Nat'l or State Standardized Exam	RPT = Report/Presentation SP = Skills Performance SD = Skills Demonstration W = Writing Assignments E = Essays DE = Documented Essays RP = Research papers J = Jury R = Recital	Proj. = Projects Exp. = Experiments Cap. Proj. = Capstone Project Cap. Course = Capstone Course Prac. = Practicum Intern. = Internship H = Homework PS = Problem Solving DB = Discussion Board	BO = Behavioral Observation Clin. = Clinicals CS = Case Study CP = Case Plan Port. = Portfolio Obs. = Teacher Observation Sk. Check = Skills Check-off Curriculum Frameworks JP = Judged Performance/Exhibition

MEANS OF ACCOMPLISHING STUDENT LEARNING OUTCOMES:

1. Attend and participate in class regularly.
2. Read all assigned material before class.
3. Study in-class notes and on-line (Canvas) materials.
4. Complete assigned projects in a timely manner to enable reflections and revisions on the final product.
5. Seek opportunities to practice teaching skills through tutoring and substituting in 6 – 12 schools.
6. Collaborate with peers and other professionals.

ASSIGNMENT AND/OR COURSE OUTLINE

GRADE DISTRIBUTION:

- 10% - Biography of a well-known mathematician.
- 10% - Lesson plan that incorporates mathematics history.
- 20% - Resource Notebook
- 10% - Formal article review.
- 40% - Unit exams and final exam. The final exam will be counted twice. This will be a cumulative exam covering important trends and developments in the history of mathematics.
- 10% - Homework.

COURSE OUTLINE:

Unit 1:

1. Egyptian Mathematics.
2. Babylonian Mathematics.
3. Greek Arithmetic.

Unit 2:

4. Pre-Euclidean Geometry.
5. The *Elements*.
6. Archimedes and Apollonius.

Unit 3:

7. Roman Era.
8. China and India.
9. The Islamic World.

Unit 4:

10. Medieval Europe.
12. The Era of Descartes and Fermat.
13. The Era of Newton and Leibniz.
14. Probability and Statistics.
15. Analysis.
16. Algebra.
19. The Age of Gauss.
21. Geometry.
22. Analysis After Midcentury.

FINAL CUMMULATIVE EXAM

See your Instructor First Day Handout for individual instructor assignment schedule.