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:
Not Currently Offered

REQUIRED TEXTBOOKS AND INSTRUCTIONAL MATERIALS:
ISBN 10: 0-13-019074-8

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, and all instructors record attendance daily. 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.

NOTICE OF EQUAL ACCESS/EQUAL OPPORTUNITY AND NONDISCRIMINATION:
Chipola College does not discriminate against any persons, employees, students, applicants or others affiliated with the college with regard to race, color, religion, ethnicity, national origin, age, veteran’s status, disability, gender, genetic information, marital status, pregnancy or any other protected class under applicable federal and state laws, in any college program, activity or employment.

Wendy Pippen, Associate Vice President of Human Resources, Equity Officer and Title IX Coordinator, 3094 Indian Circle, Marianna, FL 32446, Building A, Room 183C, 850-718-2269, pippenw@chipola.edu.
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 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

<table>
<thead>
<tr>
<th>STUDENT LEARNING OUTCOMES FOR MHF 4404</th>
<th>NCTM Standards Middle Grades Mathematics</th>
<th>NCTM Standards Secondary Mathematics</th>
<th>FL Competencies and Skills: Subject Area Mathematics 5-9</th>
<th>FL Competencies and Skills: Subject Area Mathematics 6-12</th>
<th>Assessment Activities/Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>Standard 1a: B.1.5, B.2.5, B.3.10, B.4.6, B.5.3</td>
<td>Standard 1a: A.1.5, A.2.7, A.3.10, A.4.6, A.5.6, A.6.5</td>
<td>4.12</td>
<td>UT, H, PS</td>
<td></td>
</tr>
<tr>
<td>Students will prepare and present a biography of a well-known mathematician.</td>
<td>Standard 6: 6c</td>
<td>Standard 6: 6c</td>
<td></td>
<td>RPT</td>
<td></td>
</tr>
<tr>
<td>Students will present a lesson plan that incorporates mathematics history.</td>
<td>Standard 2: 2f</td>
<td>Standard 2: 2f</td>
<td>4.1</td>
<td>RPT</td>
<td></td>
</tr>
</tbody>
</table>

**Assessment Codes**

- UT: Understanding and utilization
- H: Higher level thinking
- PS: Problem solving
- RPT: Reflective Practice
<table>
<thead>
<tr>
<th>T = Tests</th>
<th>RPT = Report/Presentation</th>
<th>Proj. = Projects</th>
<th>BO = Behavioral Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre/Post = Pre- and Post-Tests</td>
<td>SP = Skills Performance</td>
<td>Exp. = Experiments</td>
<td>Clin. = Clinicals</td>
</tr>
<tr>
<td>OT = Objective Tests</td>
<td>SD = Skills Demonstration</td>
<td>Cap. Proj. = Capstone Project</td>
<td>CS = Case Study</td>
</tr>
<tr>
<td>UT = Unit Tests</td>
<td>W = Writing Assignments</td>
<td>Cap. Course = Capstone Course</td>
<td>CP = Case Plan</td>
</tr>
<tr>
<td>Q = Quizzes</td>
<td>E = Essays</td>
<td>Prac. = Practicum</td>
<td>Port. = Portfolio</td>
</tr>
<tr>
<td>F = Final Examination</td>
<td>DE = Documented Essays</td>
<td>Intern. = Internship</td>
<td>Obs. = Teacher Observation</td>
</tr>
<tr>
<td>CF = Cumulative Final</td>
<td>RP = Research papers</td>
<td>H = Homework</td>
<td>Sk. Check = Skills Check-off</td>
</tr>
<tr>
<td>EX = Departmental Exam</td>
<td>J = Jury</td>
<td>PS = Problem Solving</td>
<td>Curriculum Frameworks</td>
</tr>
<tr>
<td>SE = Nat’l or State Standardized Exam</td>
<td>R = Recital</td>
<td>DB = Discussion Board</td>
<td>JP = Judged</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Performance/Exhibition</td>
</tr>
</tbody>
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**MEANS OF ACCOMPLISHING STUDENT LEARNING OUTCOMES:**

1. Class discussions.
2. Reading the textbook and other resources of assigned materials.
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**

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