



# CHIPOLA COLLEGE

## COURSE SYLLABUS

Chipola's website: [www.chipola.edu](http://www.chipola.edu)

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**COURSE TITLE:**

Differential Equations

**COURSE NUMBER:**

MAP 2302

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**COURSE DESCRIPTION (with prerequisites):**

This course is an introductory course in ordinary differential equations. Topics covered include methods for solving various types of first-order differential equations, second-order and higher-order linear differential equations, and systems of linear differential equations. Methods include undetermined coefficients, variation of parameters, Laplace transforms, power series solutions, and numerical methods.

Prerequisite or corequisite: MAC 2313. 3 semester hours.

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**NAME(S) OF INSTRUCTORS:**

Stan Young, M.Ed.

Assistant Professor

[youngs@chipola.edu](mailto:youngs@chipola.edu)

850-718-2336

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**EFFECTIVE ACADEMIC YEAR:**

2023-2024

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**REQUIRED TEXTBOOKS AND INSTRUCTIONAL MATERIALS:**

MyLab Math with Pearson eText for Digital Update for Nagle Fundamentals of Differential Equations with BVPs -- Instant Access (18-weeks)

ISBN-13: 9780135997925

\*NOTE: Students that purchase instant access through MyLab have the option to add the loose-leaf book and have it shipped to their home address (free shipping)

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**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.

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**ATTENDANCE AND WITHDRAWAL POLICIES:**

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Chipola College expects regular attendance of all students and for all instructors to 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 effect 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:**

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

#### **ACADEMIC HONOR CODE POLICY:**

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Students are expected to uphold the Academic Honor Code, which 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:**

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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:**

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Chipola College does not discriminate against any persons, employees, students, applicants or others affiliated with the college in regards 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:**

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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 through the Library Resources link within your course in Canvas or by using the *Search* icon on the

Chipola Library website at [www.chipola.edu/library](http://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:**

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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 Learning Resources. The Canvas support hotline is available online in live chat and on the phone, toll-free, at 855-308-2812 for any issues 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:**

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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, live online tutoring conferences and individual tutoring sessions are available for a variety of courses through ACE@Home. For a conference schedule or to schedule an individual appointment, visit “ACE Tutoring” in the left navigation from any course in Canvas.

### **ELECTRONIC DEVICE USAGE STATEMENT:**

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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:**

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#### **Area 3 -Math: Demonstrate Basic Mathematical Skills and Knowledge**

The purpose of the mathematics component of the core curriculum is to develop quantitative literacy with an ability to apply basic mathematical tools in the solution of real-world problems.

M-1 Solve mathematical problems by using arithmetic, algebraic, or geometric skills.

M-2 Translate basic mathematical information verbally, numerically, graphically, or symbolically.

M-3 Solve mathematical problems using appropriate technology.

M-4 Interpret mathematical models such as formulas, graphs, tables, or schematics.

M-5 Solve contextual problems using mathematical processes. |

<b>Linking Course-level Student Learning Outcomes with Discipline-Specific Competencies, Assessment Methods, and Artifacts</b>		
<b>COURSE-LEVEL STUDENT LEARNING OUTCOMES FOR MAP 2302</b>	<b>DISCIPLINE-SPECIFIC GENERAL EDUCATION COMPETENCIES</b>	<b>ASSESSMENT METHODS FOR COURSE LEVEL STUDENT LEARNING OUTCOMES (see Notes below)</b>
<ul style="list-style-type: none"> <li>• Classify differential equations</li> <li>• Determine if a relation or function is a solution to a differential equation</li> <li>• Sketch initial value solutions</li> <li>• Find approximations to solutions of initial value problems</li> <li>• Solve first-order differential equations</li> <li>• Solve second-order and higher-order linear differential equations</li> <li>• Solve differential equations and systems of differential equations using Laplace transforms</li> <li>• Solve linear differential equations using power series solutions</li> <li>• Apply methods of solving differential equations to contextual problems</li> </ul>	M-4	UT, CF, H
	M-1	UT, CF, H
	M-2, M-4	UT, CF, H
	M-3, M-4	UT, CF, H
	M-1	UT, CF, H
	M-1	UT, CF, H
	M-1	UT, CF, H
	M-1	UT, CF, H
	M-5	UT, CF, H

**Notes: Assessment Codes**

<b>BO</b> - Behavioral Observation	<b>EX</b> - Dept Exam	<b>Port</b> - Portfolio	<b>SD</b> - Skills Demonstration
<b>Cap Proj</b> - Capstone Course	<b>Exp</b> - Experiments	<b>Prac</b> - Practicum	<b>SE</b> - Natl or State Standardized
<b>CF</b> - Cumulative Final	<b>F</b> - Final Exam	<b>Pre/ Post</b> - Pre-/Post-Tests	<b>Sk</b> - Ck Skills Check-Off
<b>Clin</b> - Clinicals	<b>H</b> - Homework	<b>Proj</b> - Projects	<b>SP</b> - Skills Performance
<b>CP</b> - Case Plan	<b>Intern</b> - Internship	<b>PS</b> - Problem Solving	<b>T</b> - Tests
<b>CS</b> - Case Study	<b>J</b> - Jury	<b>Q</b> - Quizzes	<b>UT</b> - Unit Tests
<b>DB</b> - Discussion Board	<b>JP</b> - Judged Perf/Exh	<b>R</b> - Recital	<b>W</b> - Writing Assignments
<b>DE</b> - Documented Essays	<b>Obs</b> - Teacher Observ	<b>RP</b> - Research Papers	
<b>E</b> - Essays	<b>OT</b> - Objective Tests	<b>RPT</b> - Report/Presentation	

**MEANS OF ACCOMPLISHING STUDENT LEARNING OUTCOMES:**

**MAP 2302 is not a General Education core course and therefore a student in MAP 2302 will demonstrate selected learning outcomes from this list.**

Teacher Facilitated: The teacher will be leading class discussions on the material contained in the text during each class period.

Student-Centered: The students will take notes and practice solving problems during each class period.

Office Hours: The instructor will be available during office hours for individual assistance. The instructor's schedule can be found posted on their office door and/or via their individual web site.

ACE Lab Tutors: Student tutors are available in the lab to provide individualized help. Hours can be found posted each semester on the lab door and/or via the web site. |

## **ASSIGNMENT AND/OR COURSE OUTLINE**

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