





<b>CORE COMPETENCIES:</b> The following core competencies are embedded in this curriculum: Apply appropriate mathematical and statistical concepts and operations to interpret data to solve problems; Use computer systems or other appropriate forms of technology to achieve educational and personal goals.	
<b>LEARNING ASSESSMENT</b>	
<b><i>Student Learning Outcomes:</i></b>	<b><i>Suggested Means of Assessment:</i></b>
Compute limits of functions.	Homework, Quizzes, Tests, Final Exam
Calculate and apply derivatives of algebraic and transcendental functions.	Homework, Quizzes, Tests, Final Exam
Calculate and apply integrals using algebraic and transcendental functions.	Homework, Quizzes, Tests, Final Exam
Utilize a graphing calculator effectively as a tool to understand concepts and to explore and solve complex mathematical problems.	Homework, Quizzes, Tests, Final Exam
Demonstrate comprehension of the topics covered in this course	Homework, Quizzes, Tests, Final Exam
<b>GRADING SYSTEM:</b>	
	C+ = 77 < 80
A = 90 < 100	C = 70 < 77
B+ = 87 < 90	D = 60 < 70
B = 80 < 87	F = Below 60

**DISABILITY SERVICES STATEMENT:** Warren County Community College is committed to providing all students equal access to learning opportunities. Student Services is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations. Students who have, or think they may have, a disability (e.g. mental health, learning, vision, hearing, physical or systemic), are invited to contact Student Services to arrange a confidential discussion at (908) 835-2300 or by email at [StudentServices@warren.edu](mailto:StudentServices@warren.edu) as soon as possible. Students registered for Disability Services with Student Services, who have requested accommodations for the current semester will be provided with an electronic letter detailing individual accommodations and are encouraged to contact the instructor early in the semester to discuss accommodations outlined in their letter.

**INSTRUCTIONAL SUPPORT CENTER:** The Instructional Support Center (ISC), located in Room 105 across from the library, provides academic support at no cost to WCCC students and is available for courses in which they are currently enrolled. The ISC is staffed with trained professional and peer tutors who are ready to help you understand and succeed. For scheduling or further information, visit the ISC in person, online at <http://www.warren.edu/tutoring/> or by telephone at (908)835-2354.

**STATEMENT AND POLICY ON CHEATING, PLAGIARISM AND ACADEMIC**

**DISHONESTY:** Students are required to perform all the work specified by the instructor and are responsible for the content and integrity of all academic work submitted. A violation of



academic integrity will occur if a student: (1) knowingly represents work of others as one's own, (2) uses or obtains unauthorized assistance in any academic work, (3) gives fraudulent assistance to another student, or (4) furnishes false information or other misuse of college documents.

In cases of suspected violation of academic integrity, the incident is to be reported to the Office of Academics. A student found guilty of violating the rule of academic integrity by the Vice President of Academics will be considered to have failed in personal obligation to the College; such failure will be subject to disciplinary action by the College. Unless otherwise notified, the instructor will allow students who are pending disciplinary action to attend class.

**REQUIRED FORMAT FOR RESEARCH PAPERS:** Research papers written for any Warren County Community College class must conform to the required documentation style. Papers written for humanities (and some social science) classes will follow the most recent edition of the Modern Language Association (MLA) in-text citation and bibliographic methods. Social science and science papers will require the use of the most recent edition of the American Psychological Association (APA) in-text citation and bibliographic methods.

Please consult with your instructor regarding the correct documentation style to use in his/her class.

**ATTENDANCE POLICY:** Students are expected to attend all class sessions of courses in which they are enrolled and are responsible for all material presented in class and all homework assignments.

Grades are based on the quality of work completed in meeting the requirements for a particular course, as stated in the course syllabus and catalog description.

Excessive absence may be considered sufficient cause for dismissal from class by an instructor or other appropriate college staff member. Any decision to exclude a student from class or the College due to excessive absence shall be subject to review by the President in accordance with established procedures. Students who have not attended class are not entitled to a refund of tuition.

#### **WCCC HAYTAIAN & MAIER LIBRARY**

Text: 908-652-4445

Email: [lstoll@warren.edu](mailto:lstoll@warren.edu)

<http://warren.libguides.com>

Please see the library's website above for current semester hours.

The WCCC Library offers a wide range of services to students specific to the information literacy goals of the College which includes suggesting research strategies, facilitating the use of both digital and print resources, as well as assisting students with citations to avoid plagiarism.

The library also serves as the College's computer space, with computers for students to use when the library is open. Students also have free, unlimited printing from the College's computers, as well as space to study.



The library is where students can get their college student ID cards. All students are required to get a student ID card and carry it while on campus for security purposes. To get a student ID card, you must bring another form of ID to the library. You may also be asked to bring a printed copy of your current class schedule. You can get a student ID card any time that the library is open. These cards do not expire and can be used for your duration at WCCC.

Additionally, the library participates in a national inter-library loan program which is available free to all students and faculty. You can submit ILL requests by emailing the librarian or by stopping by the library's circulation desk.

**TOPICAL OUTLINE:**

**A. LIMITS AND THEIR PROPERTIES**

1. Preview of calculus
2. Finding limits graphically and numerically
3. Evaluating limits analytically
4. Continuity and one-sided limits
5. Infinite limits

**B. DIFFERENTIATION**

1. The derivative and the tangent line problem
2. Basic differentiation rules
3. Product and quotient rules and higher-order derivatives
4. The Chain Rule
5. Implicit differentiation
6. Related rates

**C. APPLICATIONS OF THE DERIVATIVE**

1. Extrema on an interval
2. Rolle's Theorem and The Mean Value Theorem
3. Increasing/decreasing functions and the first derivative test
4. Concavity and the second derivative test
5. Limits at infinity
6. A Summary of curve sketching
7. Optimization problems
8. Newton's Method
9. Differentials

**D. INTEGRATION**



1. Antiderivatives and the indefinite integral
2. Area
3. Riemann sums and the definite integral
4. The fundamental theorem of calculus
5. Integration by u-substitution
6. Numerical integration

**E. LOGARITHMIC, EXPONENTIAL, AND OTHER TRANSCENDENTAL FUNCTIONS**

1. The natural logarithmic function: differentiation
2. The natural logarithmic function: integration
3. Inverse functions
4. Exponential functions: differentiation and integration
5. Bases other than e and applications
6. Inverse trigonometric functions: differentiation
7. Inverse trigonometric functions: integration
8. Hyperbolic functions

**F. DIFFERENTIAL EQUATIONS**

1. Differential equations: growth and decay
2. Separation of variables
3. First-order linear differential equations

**GRADING METHODS:**

**ITINERARY:**