Department of Mathematics, Computer and Information Sciences
Mississippi Valley State University
MA 301-1 Calculus III
Fall 2022

College	**Department**	**Course #**
Arts and Sciences	**MCIS**	**MA 301-1**
Instructor	**Class Meetings-Location/Time:**	**Office Location:**
Dr. Jinglong Ye	MWF 11:00 – 11:50 am CRB 206	CRB 111 C
Office Phone:	**E-mail Address:**	**Office Hours:**
662-254-3293	Jinglong.ye@mvsu.edu	M/W: 9:00-10:00am,3:00-4:00m TR: 8:00-11:00am (WCONLINE) TR: 2:00-3:40pm F: 9:00-10:00am

Text: Calculus with Analytic Geometry by Larson & Hostetler

Course Credit: 3 hours

Prerequisites: Cal I & Cal II.

Purpose
To provide the necessary background in Calculus III for students of mathematics, Computer Science, and a related knowledge of disciplines. More specifically this course aims to successfully wed intuition and rigor of some of the basic limit concepts introduced in beginning Calculus. Another aim is to help produce a gradual increase in the mathematical sophistication of the student. Finally, this course aims to establish a true integration of Analytic Geometry with Calculus concepts.

Course Objectives and Goals
The objectives of this course are:
1. Use theorems and the derivative to solve complex limits
2. Be able to evaluate improper integral using the limit concept
3. Use Taylor's Polynomials to approximate complex functions.
4. Be able to visualize the graph of functions such as In, e^x, arc tan etc.
5. Formulate or guess a general formula for a sequence given a list of it terms.
6. Use computers and/or calculators to generate a sequence leading to a limit, and to approximate transcendental functions with polynomials.
7. Solve textbook application problems from science, engineering, and business.
8. Anticipate the limit of function before calculation by looking at the graph.
9. Estimate the sum of a geometric series and telescoping function for a specified number of terms.

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The goals of this course are:
1. To provide students with adequate exposure of subject matter to prepare them for a more in-debt study of upper level mathematics courses.
2. To help students develop their critical thinking, technological and mathematical writing skills.
3. To help students develop a step-by-step procedure for solving problems.
4. To prepare students to communicate mathematically both orally and in writing.

Course Content:
Text: Calculus with Analytic Geometry 9th edition by R. Larson and R. Hostetler
Indeterminate forms, improper integrals, Taylor's formula, infinite series, vectors in the plane, and coordinate systems in three-dimensional space.

Teaching Methods
The method used to accomplish the goals and objectives of this course include a combination of lectures, demonstrations, class discussions, use of technology and group activities.

Course Requirements

- Students are expected to attend class, take notes, and carefully complete all homework assignments and submit them when due. **Incomplete or late assignments will not be accepted.**
- Students are strongly encouraged to participate in all class activities.
- Failure to make up an exam will result in a grade of zero.
- Students are expected to pass written examinations based on classroom lectures and homework assignments.
- Any individualized problems should be discussed in the office and not in the classroom.
- **DO NOT** wait until the end of the semester to ask for help. Use my office hours, as well as tutors, if and when you may need extra practice.

Evaluation Criteria
The evaluation methods, with exception to the homework and final exam, may vary with instructors. **(See Homework and Final Exam below)**

Grading Scale

Score (Average)	Grade
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

Classroom Activities…….……10%
Homework/quizzes……...…....40%
Midterm, Final Exams…….50%

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Calendar of Activities/Course Outline/Schedule

Course Outline: *Subject to some changes depending on the needs and level of the class*		
Week	**Contents**	**Exams**
Week 1 08/22 - 08/26	8.7	
Week 2 08/29 – 09/2	8.8, 9.1	
Week 3 09/5 – 09/9	9.1, 9.2	
Week 4 09/12 – 09/16	9.3,9.4	
Week 5 09/19- 09/23	9.4, 9.5	
Week 6 09/26 - 09/30	9.6	
Week 7 10/3– 10/7	Review and Midterm Exam	**Midterm Exam**
Week 8 10/10 – 10/14	**9.7**	
Week 9 10/17 – 10/21	9.8, 9.9	
Week 10 10/24 – 10/28	9.9, 9.10	
Week 11 10/31 - 11/4	10.1, 10.2	
Week 12 11/7 – 11/11	10.2, 10.3	
Week 13 11/14 – 11/18	10.4,10.5	
Week 14 11/21 – 11/25		**Thanksgiving**
Week 15 11/28-12/2	Review	
Week 16 12/5-12/9	**Final Exam**	**Final Exam**

Missed Homework/Quizzes

No make-up on missed quizzes/homework.

Final Exam

The final exam is a comprehensive examination consisting of all topics covered.

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Attendance Policy
It is necessary for students to attend every class meeting. Any student who misses more than the allowed number **(3)** of absences will be subject to a decrease in their final grade.

SSD/Special Needs Statement
Students having any special needs (handicaps, problems, or any factors that may affect their performance in class or require special instructional strategies) should make these special needs known to the instructor during the first week of the course. The instructor meets with the student to insure access of available resources in the university and make appropriate instructional modifications.

ADA Syllabus Statement
Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If a student has a disability that qualifies under the Americans with Disability Act (ADA) and requires accommodations, he/she should contact the Services for Students with Disability Office to obtain this service. Disabilities covered by the ADA may include learning, physical, psychiatric, vision, hearing, or chronic health disorders. Students who are uncertain if their condition/disability is qualified should contact the SSD Office.
Mrs. Kathy Brownlow/ ADA Coordinator
Social Science Building Office 105
Phone/e-mail: 662-254-3443, kbrownlow@mvsu.edu.

USE OF TECHNOLOGY
The students use the graphing calculators and Mathematica software to assist with many of the in-class and take home assignments. Additionally, demonstrations are often given in class with the Mathematica software, especially with the graphing capability.

TEXTBOOK
The textbook(s) for this course are available on Reserve at the Circulation Desk at the James H. White Library for a 2-hour loan period (books must stay in the Library). Please take advantage of this resource, but keep in mind that copies of textbooks for each course are limited and may be in use by another student, particularly right before an assignment or reading is due, so plan your textbook use accordingly.

BIBLIOGRAPHY
Schick, W., (1995), Fortran 90 and Engineering Computation. New York, John Wiley & Sons, Inc.
Bunch, B., (1982), Mathematical Fallacies and Paradoxes. Van Nostrand Reinhold.
Andrews, Larry C. (1995) Elementary Partial Differential Equations with Boundary Value Problems. Phaladelphia: Saunders College Publishing.
Forsythe, G. E., and M. A. Malcoln (1977) Computer Methods for Mathematical Computation. Englewood Cliffs, N. J. : Prentice-Hall.
Hamming, R. W. (1971) Introduction to Applied Numerical Analysis. New York: McGraw Hill.

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