Department of Mathematics, Computer and Information Sciences
Mississippi Valley State University
MA 317/517, Real Analysis
Fall, 2025

Course #	**Department**	**Credits:**
MA317/517	**MCIS**	**3**
Instructor	**Class Meetings-Location/Time:**	**Office Location:**
Dr. Xiaoqin Wu	MWF 1:00 – 1:50pm CRB 206	Science Side 148B
Office Phone:	**E-mail Address:**	**Office Hours:**
254 – 3402 254 – 3422 (main office)	xpwu@mvsu.edu	MWF 10:00 - 11:00 TH 9:30 – 12:30 am

Text
Witold A.J. Kosmala, A Friendly Introduction to **Analysis, 2nd edition, Pearson-Prentice Hall, 2004**

Course Credit
3 hours

Prerequisites
It is preferred that students would have completed Calculus III and IV with grade "C" or above.

Course Description
Set theory, real numbers, mathematical induction and recursion, and
functions. Limits of sequences and functions, Cauchy sequences, completeness, nested intervals, continuity, differentiation, mean value theorem, and 'Hospital's rule

Overview
This course is advanced calculus that provides necessary background for students who need preparation for further study and research of higher mathematics such as Mathematical Analysis, Partial Differential Equations, Functional Analysis, and so on. In order to understand concepts and proofs, students are expected to read extensively from the textbook and spend a considerable amount of time solving problems. This course will help students use and understand mathematics more effectively as a problem-thinking-solving tool in their personal and professional lives.

Course Objectives and Goals:
1. To provide students with adequate exposure and subject matter to prepare them for a more in-debt study of advanced mathematics courses.
2. To help students develop their critical thinking, technological and writing skills.

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3. To help students develop a step-by-step procedure for solving problems and theoretical proving.
4. To prepare students to communicate mathematically both orally and in writing.
5. To help students obtain mastery of logic proof.

Course Contents and Tentative Schedule

Week 1.	Sets and number systems
Week 2.	Finite set and cardinalities
Week 3.	Relations and functions, mathematical induction
Week 4.	Proof techniques, Bounded sets and the supremum principle
Week 5.	Sequences and convergence
Week 6.	Monotone sequence and the bounded monotone convergence principle,
Week 7.	Midterm exam,
Week 8.	The Cauchy convergence principle, The Interval chain principle
Week 9.	The accumulation point principle
Week 10.	Functions and the definition of limits
Week 11.	Limits of Functions at infinity, sided limits of functions
Week 12.	Continuous functions
Week 13.	Properties of continuous functions in a closed interval.
Week 14.	Thanksgiving break
Week 15.	Final exam

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.

Evaluation Criteria
The evaluation methods, with exception to the homework and final exam, may vary with instructors

Grading Scale

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

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Classroom Activities……..……...5%
Homework/Quizzes.…….....50%
Midterm, Final Exams……45%

Missed Homework/Exams/ Make-up Policy
All students can make up exams with an approved absence. **No make-up on missed quizzes/homework.**

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

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.

ADA/STUDENTS WITH SPECIAL NEEDS:
Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located in the Social Science Building Office 105 to register for the program at the beginning of each semester. For more information or to schedule an appointment, please contact Mrs. Kathy Brownlow, via phone or email at 662-254-3443 or kbrownlow@mvsu.edu.

Telephones
The volume of telephones must be turned **off/vibrate** if you have these items with you in class. The noise is distracting not only to the instructor but to your classmates as well.

NOTE: Failure to adhere to any of the preceding statements could cause a decrease in the FINAL GRADE!!!!!!

Bibliography

F. Dangello & M. Seyfried, Introductory real analysis, Houghton Mifflin, 2000
Edward D. Gaughan, Introduction To Analysis**,** Brooks/Cole(Thomas Learning), 1997
Russell A. Gordon, Real Analysis, A First Course**,** Addison-Wesley Higher, 2nd

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