Department of Mathematics, Computer and Information Sciences
Mississippi Valley State University
MA 317/517, Real Analysis
Fall, 2018

College	**Department**	**Course #**
Arts and Sciences	**MCIS**	**MA317/517**
Instructor	**Class Meetings-Location/Time:**	**Office Location:**
Dr. Xiaoqin Wu	MW 1:00 – 2:15pm CRB 206	CRB 148
Office Phone:	**E-mail Address:**	**Office Hours:**
254 – 3402 254 – 3422 (main office)	xpwu@mvsu.edu	MWF 9:00 - 12:00 noon TR 11:00 – 12:00 noon

Text
Russell A. Gordon, **Real Analysis, A First Course,** Addison-Wesley Higher, 2nd

Course Credit
3 hours

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

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.
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 Content:

This document does not constitute a contract with the university. It contains guidelines and I reserve the right to make changes on this syllabus as needed.

1. Real Numbers
1.1. What is a Real Number?
1.2. Absolute Value, Intervals, and Inequalities
1.3. The Completeness Axiom
1.5. Real-Valued Functions

2. Sequences
2.1. Sequences and convergence
2.2. Monotone Sequences and Cauchy Sequences
2.3. Subsequences

3. Limits and Continuity
3.1 The limit of a function
3.2. Continuous Functions
3.3. Intermediate and Extreme Values
3.4 Uniform Continuity
3.5. Monotone Functions

4. Differentiation
4.1 The derivative of a function
4.2 Rolle's theorem and the mean-value theorem
4.3 L'Hospital's rule and the inverse-function theorem

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. **(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……..……...5%
Homework/Quizzes…….…....50%
Midterm, Final Exams…….45%

Missed Homework/Exams

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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.

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.

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.

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