



Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

Semester: Spring

Course Prefix: Math

Course Title: Foundations of Analysis

Year: 2025

Course and Section #: 3200-002

Credits: 3

Course Description

Covers material from beginning analysis including the axioms of the real numbers, sequences, mathematical induction, limits, topology of the real line, continuity, differentiation, and integration.

Course Attributes

This course has the following attributes:

- General Education Requirements
- Global/Intercultural Graduation Requirements
- Writing Enriched Graduation Requirements
- Discipline Core Requirements in Program
- Elective Core Requirements in Program
- Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Scott Lewis

Student Learning Outcomes

Upon successful completion, students should be able to . . .

1	Prove theorems using the axioms of the real numbers, the least upper bound property, cardinality, sequences and convergence.
2	Prove the Principle of Mathematical Induction and the Bolzano-Weierstrass Theorem and theorems using these results.
3	Prove theorems relating to limits and real topology, continuity and uniform continuity, including the Intermediate Value Theorem, the sequential characterization of limits and the Extreme Value theorem.
4	Prove theorems pertaining to differentiation, including the product, quotient, sum and chain rules, as well as the Mean Value Theorem, the Inverse Function Theorem and L'Hopital's rule.
5	Prove theorems relating to integrability and integration.

Course Materials and Texts

- Text: No Text is required. Class notes are available on this canvas site.
- Technology Expectations: It is expected that you will have technology to access Canvas, upload files and submit other work.

Course Requirements

Course Assignments, Assessments, and Grading Policy

The following grading scale will be used in this class:

Grade	Percent
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
E	0-59

Assignment Categories

Activity	Percent
Exams (3)	80%
Presentations/Other	20%

Late Work Statement:

Any assignment submitted late may receive only partial credit (amount depending upon circumstances). It is assumed that the student will contact the instructor to work out submission dates and details

Assigned Exercises:

Each Module has assigned Theorems from the text to be presented.

Assessments:

The course will include 3 exams. Each exam will consist of an in class portion and a take home portion. There will be some review materials for each to help you focus on important concepts and types of problems.

Presentations of Theorems are the other portion of assessments. See the assignments for which you need to present. Presentations may be given only partial credit depending on if they are late, not completely ready, or if they are presented poorly.

Required or Recommended Reading Assignments

It is recommended to read the class notes and understand definitions. Reading any introductory analysis book is helpful and give alternate approaches to topics

General Description of the Subject Matter of Each Lecture or Discussion

While there is not schedule for the day to day topics (since we are following a modified Moore method), the subject matter is divided into 6 roughly equal sections:

1. Ordered Fields
 2. Functions, Limits, and Continuity
 3. Induction, Integers, and Sequences
 4. Continuity and Completeness of the Real Numbers
 5. Riemann Integrals
 6. Infinite Series
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Required Course Syllabus Statements

Generative AI

All exams and other work should be done on your own with no AI assistance

Using Remote Testing Software

This course does not use remote testing software.

This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU [Accessibility Services](#) at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their [rights and responsibilities](#). In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in [UVU Policy 541: Student Code of Conduct](#).

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a [specially dedicated space](#) for meditation, prayer, reflection, or other forms of religious expression.