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APPROVED COURSE

COURSE ID

MATH 3100

TITLES**Course Title:** Sequences and Series**Athena Title:** Sequences and Series**COURSE DESCRIPTION**

Precise definitions of limit and convergence concepts; practical tests for convergence of infinite series; power series representations and numerical error estimates; applications to calculus and explicit summation formulae; trigonometric series.

GRADING SYSTEM

A–F (Traditional)

CREDIT HOURS AND LECTURE/LAB/DISCUSSION HOURS

	FIXED	VARIABLE
Credit Hours	3	
Lecture Hours per week	3	

NON-TRADITIONAL FORMAT (IF THE LECTURE/LAB HOURS OR THE LECTURE/DISCUSSION HOURS ARE FEWER THAN THE CREDIT HOURS, PLEASE PROVIDE JUSTIFICATION IN THE BOX BELOW.)

REPEAT POLICY

Course cannot be repeated for credit

EQUIVALENT COURSES

The course will not be open to students who have credit in the following courses:

MATH 3100H, MATH 3100W

REQUIRED PREREQUISITES

MATH 3200 or MATH 3200W or permission of department

PREREQUISITE OR COREQUISITE COURSES**COREQUISITE COURSES****PRIMARY DELIVERY MECHANISM (SELECT ONLY ONE)**

Lecture

COURSE WILL BE OFFERED

Every Year – Fall Spring

EFFECTIVE SEMESTER AND YEAR OF CURRENT VERSION OF COURSE

Fall 2023

ADDITIONAL INFORMATION REQUIRED FOR THE SYLLABUS**COURSE OBJECTIVES OR EXPECTED LEARNING OUTCOMES**

Students will learn about convergent and divergent sequences and series. They will examine various convergence tests. Should also learn techniques for calculating sums of series. This course will prepare a student for future studies in approximation theory and analysis.

TOPICAL OUTLINE

1. Basics on inequalities, triangle inequality, and proofs by induction.
2. Sequences, monotone bounded sequences, completeness, squeeze principle, and convergence arguments.
3. Series, convergence tests: comparison test, integral test, ratio test; absolute and conditional convergence, Leibniz test.
4. Sequences and series of functions, Weierstrass M-test and uniform convergence. Taylor series and applications.
5. Continuity of functions studied in terms of sequences. Proof of the intermediate value theorem and maximum value theorem.

UNIVERSITY HONOR CODE AND ACADEMIC HONESTY POLICY

UGA Student Honor Code: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." *A Culture of Honesty*, the University's policy and procedures for handling cases of suspected dishonesty, can be found at www.uga.edu/ovpi. Every course syllabus should include the instructor's expectations related to academic integrity.

MENTAL HEALTH AND WELLNESS RESOURCES

- If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit <https://sco.uga.edu>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.
- UGA has several resources for a student seeking mental health services (<https://www.uhs.uga.edu/bewelluga/bewelluga>) or crisis support (<https://www.uhs.uga.edu/info/emergencies>).
- If you need help managing stress anxiety, relationships, etc., please visit BeWellUGA (<https://www.uhs.uga.edu/bewelluga/bewelluga>) for a list of FREE workshops, classes, mentoring, and health coaching led by licensed clinicians and health educators in the University Health Center.
- Additional resources can be accessed through the UGA App.

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

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