Course Subject, Number and Title
MATH 421-002 – The Theory of Single Variable Calculus

Credits
3

Course Link
https://canvas.wisc.edu/courses/190327

Course Designations and Attributes
Breadth - Natural Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S

Meeting Time and Location
Tu, Th – 1:00PM -2:15PM at VAN VLECK B123

Instructional Mode
Face-to-face

Specify how Credit Hours are met by the Course
This class meets for two 75-minute class periods each week over the fall/spring semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc) for about 3 hours out of classroom for every class period. The syllabus includes more information about meeting times and expectations for student work.

INSTRUCTORS AND TEACHING ASSISTANTS
Instructor Title and Name
Dr. Siddhesh Wagh

Instructor Availability
Office B127 Van Vleck Hall
T – 11:30AM – 12:00PM
W – 1:30PM – 2:30PM
F – 11:00AM – 12:00PM

Otherwise after class or by appointment.
OFFICIAL COURSE DESCRIPTION
Official Course Description
Covers material in first and second semester calculus but it is intended to teach math majors to write and understand proofs in mathematics in general and in calculus in particular. Enroll Info: None

Requisites
MATH 234 or graduate/professional standing or member of the Pre-Masters Mathematics (Visiting International) Program

LEARNING OUTCOMES
Course Learning Outcomes
- Understand and use the standard methods and tools of mathematical argument (e.g. direct and indirect methods, the construction of examples and counterexamples, induction arguments, first-order logic, set theory, and quantifiers).
- Recall and state the formal definitions of mathematical objects (e.g. sets, functions, and graphs) and their properties used in calculus.
- Distinguish if a mathematical construct does or does not have the condition of having a particular property formally (e.g. limits, continuity, differentiability, and integrability).
- Recall and state standard calculus theorems (e.g. Intermediate Value Theorem, Mean Value Theorems, and Fundamental Theorem of Calculus), and recall arguments for these theorems and the underlying logic of their proofs.
- Prove or disprove statements related to the definitions, properties, and theorems of calculus using the techniques of mathematical argument.
- Write mathematical proofs and concepts in logical, reasonable, and concise ways.

GRADING
The following scores correspond to the guaranteed grades in this course. The scores may be lowered at the end of the semester by the instructor.
A ≥ 93% > AB ≥ 89% > B ≥ 82% > BC ≥ 78% > C ≥ 70% > D ≥ 60% > F

REQUIRED TEXTBOOK, SOFTWARE & OTHER COURSE MATERIALS
Michael Spivak. Calculus. Publish or Perish. 4th ed.

This textbook is required, and the course will cover material from the first fourteen chapters and possibly other chapters. You may investigate other resources including other textbooks and online material, but it is your responsibility to verify and determine the accuracy of any resource.
EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK
There will be 2 exams worth 20% of the grade each. The homework assignments given out through the semester will count for 30% of the grade. Exams other than the final will be held in class during class times on the dates mentioned below. The cumulative final will count for 30% of the grade and will be 2 hours long. It will be held in a room that will be informed later during the semester.

Exam 1: Thursday, Feb 27
Exam 2: Thursday, April 9
Final Exam: Monday, May 4 7:45AM – 9:45AM

HOMEWORK & OTHER ASSIGNMENTS
- I will assign homework problems nearly every week that are to be turned in on Thursday of that week.
- They will be graded by a grader assigned to me.

RULES, RIGHTS & RESPONSIBILITIES
- To see the Guide’s Rules, Rights and Responsibilities information, refer to http://guide.wisc.edu/undergraduate/#rulesrightsandresponsibilitiesext.

ACADEMIC INTEGRITY
By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison’s community of scholars in which everyone’s academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to studentconduct.wiscweb.wisc.edu/academic-integrity/.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES
McBurney Disability Resource Center syllabus statement: “The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.” http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php
DIVERSITY & INCLUSION

Institutional statement on diversity: “Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.” https://diversity.wisc.edu/