Fall 2024

MATH 545-001: Intro Math Analysis

D. Shirokoff

MATH 480/545: Introductory Mathematical Analysis
Fall 2024 Course Syllabus

NJIT Academic Integrity Code: All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: Builds on principles taught in basic calculus courses. Topics discussed include continuity, differentiation, integration, and the limit process of sequences and series.

Number of Credits: 3

Prerequisites: MATH 211 with a grade of C or better or MATH 213 with a grade of C or better.

Course-Section and Instructors:

Course-Section	Instructor
Math 480-001 / 545-001	Professor D. Shirokoff

Office Hours for All Math Instructors: Fall 2024 Office Hours and Emails

Required Textbook:

Title	*Introduction to Real Analysis*
Author	W. Trench
Edition	Digital Version
Publisher	Digital Commons@Trinity
ISBN #	---
For Digital Version	SEARCH *trench introduction to real analysis* for a pdf file

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 11, 2024**. It will be strictly enforced.

COURSE GOALS

Course Assessment: Outcomes are assessed through weekly quizzes, four assignments, two midterm exams, and a comprehensive final exam.

POLICIES

DMS Course Policies: All DMS students must familiarize themselves with, and adhere to, the Department of Mathematical Sciences Course Policies, in addition to official university-wide policies. DMS takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Assignments	40%
Midterm Exams (2)	30%
Final Exam	30%

Your final letter grade will be based on the following tentative curve.

A	90 - 100	**C**	70 - 75
B+	86 - 89	**D**	60 - 69
B	80 - 85	**F**	0 - 59
C+	76 - 79		

Lectures: Class lectures will take place in person and may be recorded. If circumstances prevent classes from occurring in person, class lectures will take place via Webex at the regularly scheduled time.

Practice Problems: Each week, practice problems will be posted on Canvas with a suggested completion date. These problems do NOT need to be handed in. However, completing these problems is necessary for succeeding in this class. Some of these problems may appear on quizzes, midterm exams, or the final exam.

Quizzes: A brief quiz will be given at the beginning of class each Thursday. Quiz problems will be based upon content taught in class during the previous week, and will be drawn from practice problems posted on Canvas. Solutions will be graded for correctness, completeness, and clarity. Missed quizzes CANNOT be made up. However, the lowest two (2) quiz scores will be dropped.

Assignments: Four (4) assignments will be given that require you to interact with and reflect upon the course content. Assignments will be posted on Canvas. Each assignment must be submitted as a single pdf file on Canvas before the beginning of class time on the due date. Late assignments will be penalized at a rate of ten (10) percentage points per day or portion thereof. These assignments must be completed individually. Any submitted assignments bearing substantial similarities to each other will be assigned a score of zero.

Exams: There will be two midterm exams, held during class time, and one comprehensive final exam.

Midterm Exam I	October 10, 2024
Midterm Exam II	November 14, 2024
Final Exam Period	December 15 - December 21, 2024

The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the Math Department's Examination Policy. This policy will be strictly enforced.

Makeup Exam Policy: There will be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event an exam is not taken under rare circumstances where the student has a legitimate reason for missing the exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the Math Department Office/Instructor that the exam will be missed.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class times.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: Fall 2024 Hours)

Further Assistance: For further questions, students should contact their instructor. All instructors have regular office hours during the week. These office hours are listed on the Math Department's webpage for Instructor Office Hours and Emails.

Accommodation of Disabilities: The Office of Accessibility Resources and Services (OARS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you need an accommodation due to a disability, please contact the Office of Accessibility Resources and Services at oars@njit.edu, or visit Kupfrian Hall 201 to discuss your specific needs. A Letter of Accommodation Eligibility from the office authorizing student accommodations is required.

For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Office of Accessibility Resources and Services (OARS) website at:

https://www.njit.edu/accessibility/

Important Dates (See: Fall 2024 Academic Calendar, Registrar)

Date	Day	Event
September 2, 2024	Monday	Labor Day
September 3, 2024	Tuesday	First Day of Classes
September 9, 2024	Monday	Last Day to Add/Drop Classes
November 11, 2024	Monday	Last Day to Withdraw
November 26, 2024	Tuesday	Thursday Classes Meet

November 27, 2024	Wednesday	Friday Classes Meet
November 28 to December 1, 2024	Thursday and Sunday	Thanksgiving Recess - Closed
December 11, 2024	Wednesday	Last Day of Classes
December 12, 2024	Thursday	Reading Day 1
December 13, 2024	Friday	Reading Day 2
December 15 to December 21, 2024	Sunday to Saturday	Final Exam Period

Course Outline

Week	Dates	Topic
1	9/3 and 9/5	1.1: Intro. 1.2: Mathematical Induction
2	9/10 and 9/12	1.3: Set Theory. 2.1: Limits
3	9/17 and 9/19	2.1: Limits. 2.2: Continuity
4	9/24 and 9/26	2.3: Differentiability and Mean Value Theorem.
5	10/1 and 10/3	2.4: L'Hopital's Rule. 2.5: Taylor's Theorem
6	10/8 and 10/10	**REVIEW & MIDTERM 1 (October 10)**
7	10/15 and 10/17	3.1: Definition of the Integral
8	10/22 and 10/24	3.2: Existence of the Integral. 3.3: Properties of the Integral
9	10/29 and 10/31	3.4: Improper Integrals. 4.1: Sequences
10	11/5 and 11/7	4.1-4.2: Sequences.
11	11/12 and 11/14	**REVIEW & MIDTERM 2 (NOVEMBER 14)**
12	11/19 and 11/21	4.3: Series.
13	11/26	4.4: Sequences and Series of Functions. (No class 11/28)
14	12/3 and 12/5	4.5: Power Series.
15	12/12	**REVIEW**

Updated by Professor D. Shirokoff - 8/6/2024
Department of Mathematical Sciences Course Syllabus, Fall 2024