

Mathematics 4201 – old number: 11.1 (Advanced Calculus 1)

Spring 2026, Section ETY6 Code 17376

Tuesday, Thursday 6:95–7:45 pm, Classroom: IH-1105 Instructor: Attila Máté

**Office.** IH-1149b, 718-951-5000/2734, IH-1156 (the main Mathematics Department Office) 718-951-5246.

**Office Hours.** Tuesday, Thursday 5:00–6:00 pm

**Textbooks.** 1. Maxwell Rosenlicht, *Introduction to Analysis*, Dover, New York, 1986. \$14.95. ISBN 0-486-65038-3. Publisher's Web site:

<http://www.doverpublications.com/>

<http://store.doverpublications.com/0486650383.html>

This textbook is available at the College Bookstore (online).

2. Attila Máté, *Supplementary Notes on Introduction to Analysis*, Freely downloadable as the file [analysis.pdf](#) at the website for the course.

**Final Exam.** Time: Tuesday, May 26, 6:00pm–8:00pm, room: IH-1105.

**Exams.** Feb 26, Mar 26, May 7, Class exams count 60%, the final exam counts 40% in the course grade. One of the scores for the first or the second class exam will be dropped if this improves your grade. The score for the third class exam will not be dropped. A grade zero assigned to an exam missed without a proper excuse will not be dropped either. No makeup exams will be given. In case of a missed exam, please talk to me how to re-weigh your other exams. A grade less than 30 out of 100 on the final will result in a course grade of *F* regardless of the class exam grades. Irregular attendance or being late to class often may result in a grade worse than indicated by exam averages.

**Web Site.** Course material may be put on the Web site:

<http://www.sci.brooklyn.cuny.edu/~mate/analysis/>

Note carefully that the character before “mate” in the above address is a *tilde*, found on the top left-hand side of the keyboard.

**Department Web Site.**

<http://depthome.brooklyn.cuny.edu/math/>

**Material Covered.** Chapters I–VII of *Introduction to Analysis* will be covered. Most parts of *Supplementary Notes* will provide suitable background material.

**Syllabus.** (What follows is the official class syllabus)

This course is intended as a course in advanced calculus devoted to functions of one variable, and Mathematics 12.1 is intended as a follow-up course in functions of several variables.

I. Numbers and Sequences – A brief discussion of the real number system, including bounded sets, l.u.b., g.l.b. Limits of sequences of real numbers, operations with limits, monotone sequences. Statements and proofs of the Bolzano–Weierstrass and Heine–Borel Theorems.

II. Continuous Functions – Definition of and operations with continuous functions, extrema, statements and proofs of the extreme-value and intermediate-value theorems, monotone and inverse functions; uniform continuity.

III. Differentiable Functions – Definition of and operations with differentiable functions, derivative of inverse functions, statements and proofs of the chain rule, first and second mean-value theorems, L'Hospital's rule, and Taylor's Theorem.

IV. Sequences and series of functions – series of numbers and basic criteria for convergence, conditional and absolute convergence, multiplication of series. Sequences of functions: uniform convergence, integration and differentiation of series, power series, Taylor series. Convergence of improper integrals.

*The inclusion of the following in the syllabus is mandated by Brooklyn College*

**Academic Integrity.** The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for implementing this policy can both be found at this site:

<http://www.brooklyn.cuny.edu/bc/policies>

If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member **MUST** report the violation.

**Plagiarism.** Submitting the work of another person or persons without proper attribution is considered plagiarism, and will be treated accordingly. Proper attribution requires identifying the source of your work. Failure to do so may result in a charge of plagiarism, and students can be subject to administrative actions, including

- A 0 grade on the assignment or exam,
- An *F* grade in the course.

Additional actions may be taken by the College, including admonition, warning, censure, disciplinary probation, restitution, suspension, expulsion, complaint to civil authorities, and ejection.

**Students with disabilities.** In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services at 718-951-5538. If you have already registered with the center for Student Disability Services please provide your professor with the course accommodation form and discuss your specific accommodation with him/her.