

Mathematics 1206 – old number: 4.3 (Calculus 2)
Fall 2024, Section TY11
Code: 8139
Tuesday 11:00 am–12:15 pm, Thursday 11:00 am–1:05 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 10:20–10:55 am, 5:00–5:35 pm.

Textbooks. James Stewart, Daniel K. Clegg, Saleem Watson *Single Variable Calculus: Early Transcendentals*, 9th Edition, Cengage Learning, 2020. ISBN-13: 978-0357022269 List Price: \$249.95 Publisher's Web site: <http://www.cengage.com/> Various ebook rental options are available. If you took Calculus 1 (Math 1201), this is the same textbook you used in Calculus 1. It may be available cheaper at other sites.

FinalExams. Final: Friday, Dec. 20, 1:00-3:00 pm, room Ingersoll 1105.

Exams. Class exams: Sep 26, Oct 31, Dec 5, Since the class period may be too long for a class exam, on some of these days I may spend the first 25 minutes of the class with lecturing, and the exam may be given during the rest of the time. Don't count on this, however, and come on time in case the exam starts right at the beginning of the class.

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. Irregular attendance or being late to class often may result in a grade lower than indicated by exam averages.

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

<http://www.sci.brooklyn.cuny.edu/~mate/calc2/>

Department Web Site.

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

Syllabus. An asterisk (*) indicates optional topics.

1. *Inverse Trigonometric Functions*

review inverse functions and inverse trigonometric functions;

derivatives of inverse trigonometric functions;

integrals leading to inverse trigonometric functions (this is not a separate topic in text – a handout with some homework problems should be distributed).

2. *Applications of the Definite Integral*

area between curves;

volumes by slicing (disks and washers);

volumes by cylindrical shells;

work;

arc length.

3. *Techniques of Integration*

review of integration by substitution

integration by parts;

trigonometric integrals (powers of sin, cos and sec, tan);

trigonometric substitutions;

integration of rational functions by partial fractions;

*other techniques of integration (rationalizing substitutions, using integral tables, using computers).

4. *Other Integrations Topics and L'Hospitals Rule*
L'Hospitals Rule;
improper integrals;
approximate integration (trapezoidal and Simpson's Rule).
5. *Polar Coordinates*
introduce polar coordinates;
graphs in polar coordinates;
areas and arc lengths in polar coordinates.
6. *Infinite Sequences and Series*
introduce sequences and series;
convergence and divergence of sequences and series;
geometric series;
the integral test, p -series;
comparison test, limit comparison test;
alternating series;
ratio test, root test;
absolute and conditional convergence;
power series;
differentiation and integration of power series;
Taylor and Maclaurin series;
approximation by Taylor polynomials;
Taylor's formula with remainder;
*the Binomial Series.

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.