

MATH-SHU 131, Spring 2021

Calculus

updated on 01/27/2021

Description

This course presents the foundations of calculus for functions of a single variable. Topics addressed include limits, continuity, rules of differentiation, approximation, antiderivatives, indefinite and definite integrals, the fundamental theorem of calculus, integration techniques, and improper integrals. Prerequisite: Pre-placement by Faculty based on high-school grades, OR NYU SH “Calculus and Linear Algebra” placement exam, OR grade C or better in MATH-SHU 9 (Precalculus).

Instructor

Prof. Jinzi Mac Huang

Office hours: 11:30am - 12:30pm Mon @Pudong 1165-S

Email: machuang@nyu.edu

Recitation leaders

Dr. Joseba Dalmau Cherino (In person)

Office hours:

8:30am - 9:30am Fri. @Pudong 1133-S

Email: jdc16@nyu.edu

Dr. Tong Xuan Nguyen (Online)

Office hours: 8pm - 9pm Wed.

Email: tn2137@nyu.edu

Lecture and recitation location and hours

Lecture (Room 101, Zoom 913 5402 8394): Monday, Wednesday 09:45 am – 11 am

Recitation section 1 (Room211): Friday 09:45 am – 11 am

Recitation section 2 (Room211): Friday 11:15 am – 12:30 am

Recitation section 3 (Zoom 981 3798 8852): Thursday 5pm – 6:15pm

Textbook

J. Stewart. Calculus: Early Transcendentals, Metric Version, 9th edition.

Grading

| Assignments/Activities | % of Final Grade |
|-------------------------------|-------------------------|
| Homework | 10 |
| Quizzes | 15 |
| Exam 1 | 20 |
| Exam 2 | 25 |
| Exam 3 | 30 |

Lecture Schedule (subject to change)

| MONDAY 9:45am – 11am | | WEDNESDAY 9:45am – 11am |
|---|--|---|
| 01/25 week 1 Overview, functions | | 01/27 Essential functions, inverse functions |
| 02/01 week 2 Limit laws and their applications | | 02/03 Continuity and continuous functions |
| 02/08 week 3 Continuity laws, limit at infinity | | 02/10 Asymptotes, derivatives |
| 02/15 week 4 Spring festival | | 02/17 Spring festival |
| 02/22 week 5 Differentiation rules | | 02/24 Exam 1 |
| 03/01 week 6 Product and quotient rules, trigonometric functions | | 03/03 Chain rule |
| 03/08 week 7 Logarithm and inverse functions | | 03/10 Calculus in real life, exponential growth |
| 03/15 week 8 Extremum, mean value theorem | | 03/17 Monotonicity and concavity |
| 03/22 week 9 Indeterminate forms, L'Hospital rule | | 03/24 Graph sketching Optimization |
| 03/29 week 10 Antiderivatives | | 03/31 Exam 2 |
| 04/05 week 11 Spring Recess | | 04/07 Spring Recess |
| 04/12 week 12 The area problem, definite integral | | 04/14 Fundamental theorem of calculus |
| 04/19 week 13 Indefinite integrals, substitution | | 04/21 Area and volume |
| 04/25 week 14 Integration by parts | 04/26 Integration strategies | 04/28 Approximate Integration |
| 05/03 week 15 Labor day | | 05/05 Improper integrals, arclength |
| 05/10 week 16 Area of a surface of revolution | | 05/12 Exam 3 |

Homework

Homework will be assigned and must be completed on WebAssign. To create an account for our class, go to <http://webassign.net> and click on the “Enter Class Key” button on the upper right-hand side. The class key is: **nyu 8232 1673**. You must do this even if you have used WebAssign in the past or are using it for another course this semester. You will only need to enter this class key once.

Exam and Quiz

- Exams and quizzes will be closed book and closed note, and without calculators. Mock exams will be posted before each exam date. In-person students must take the quizzes and exams in person. Exams for remote students may have a different format of those for in-person students due to proctoring reasons.
- Each exam will cover a scope of topics set by the instructor, which is usually the materials between the previous exam and the current one.
- Quizzes will be given at the beginning of each recitation session.

Excused absences on quizzes and exams

- If a student has to miss a class or an exam, their absence may be excused at the sole discretion of the instructor. The student must notify the instructor as soon as they are aware of the restraint, and definitely before the class or exam takes place.
- Absences not communicated beforehand will not be excused under any circumstances.
- Four or more unexcused absences will lead to failure of the class.
- If an absence is excused and corresponds to a quiz or exam, the coordinator shall decide on whether a make-up is necessary or other exams will suffice for performance assessment.

Absences due to religious observances

It is NYU Shanghai policy to allow members of any religious group to absent themselves from classes when compliance with their religious obligations requires it. Students who wish to excuse an absence for religious reasons are expected to notify the Calculus Coordinator beforehand as soon as they are aware of the restraint.

Paper retention, gradebook and grade review requests

Once a quiz or exam is graded, it will be returned during the next recitation session. From that day, students have two weeks to request a grading review or to

point out any discrepancy with the NYU-Classes gradebook. After two weeks, requests will no longer be accepted. Also, after two weeks unclaimed papers will be disposed.

Grading policy

The cutoffs will be the following:

| Course grade | Letter grade |
|---------------------|---------------------|
| 94-100 | A |
| 90-93.99 | A- |
| 87-89.99 | B+ |
| 83-86.99 | B |
| 80-82.99 | B- |
| 75-79.99 | C+ |
| 70-74.99 | C |
| 60-69.99 | C- |
| 55-59.99 | D+ |
| 50-54.99 | D |
| 0-49.99 | F |

- Each student's course grade will depend solely on that student's performance.
- A student who fails to observe classroom norms may have their course grade reduced.
- During quizzes and exams, the possession of any electronic device, including cell phones, is not allowed, regardless of whether the student is actually using it or not. So is the use of books, notes, calculators, or any other object extraneous to the exam. A student who fails to observe these norms will receive grade zero on that test.
- Severe breach of academic integrity (see below) will be reported to NYU Shanghai Academic Affairs.

Academic integrity

Carefully read NYU Shanghai's Statement on Academic Integrity (in the Undergraduate Bulletin). Breaches of academic integrity could result in failure of an assignment, failure of the course, or other sanctions, as determined by the Academic Affairs office. <https://shanghai.nyu.edu/academics/curriculum/bulletin> .

Resources and support

- **Students with disabilities**

NYU Shanghai is committed to providing equal educational opportunity and participation for students with disabilities. It is NYU Shanghai's policy that no student with a qualified disability be excluded from participating in any NYU Shanghai program or activity, denied the benefits of any NYU Shanghai program or activity, or otherwise subjected to discrimination with regard to any NYU Shanghai program or activity. Any student who needs a reasonable accommodation based on a qualified disability should register with the Moses Center for Student Accessibility for assistance. Students can register online through the Moses Center and can contact the Academic Accommodations Team at shanghai.academicaccommodations@nyu.edu with questions or for assistance.

- **Tutoring**

The Academic Resource Center (ARC) provides tutoring and support to students looking to reach their highest academic potential. Students can schedule a meeting, or drop by, for individual and small group tutoring in Calculus, as well as over 30 other STEM and Business & Economics courses. Visit the online schedule to check availability. (Select "STEM" and then "Calculus" from the drop-down menu.) Students are also welcome to study on their own in the comfortable, supportive atmosphere of the ARC.

- **Title IX Compliance**

Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination on the basis of sex in educational programs. It protects victims of sexual or gender-based bullying and harassment and survivors of gender-based violence. Protection from the discrimination on the basis of sex includes protection from being retaliated against for filing a complaint of discrimination or harassment. NYU Shanghai is committed to complying with Title IX and enforcing University policies prohibiting discrimination on the basis of sex. Mary Signor, Executive Director of the Office of Equal Opportunity, serves as the University's Title IX Coordinator. The Title IX Coordinator is a resource for any questions or concerns about sex discrimination, sexual harassment, sexual violence, or sexual misconduct and is available to discuss your rights and judicial options. University policies define prohibited conduct, provide informal and formal procedures for filing a complaint and a prompt and equitable resolution of complaints.