



MATH 021: Calculus II

Term: 2020 Winter Session

Instructor: Staff

Language of Instruction: English

Classroom: TBA

Office Hours: TBA

Class Sessions Per Week: 6

Total Weeks: 4

Total Class Sessions: 25

Class Session Length (minutes): 145

Credit Hours: 4

Course Description:

We will study in this course: logarithmic, exponential, and trigonometric functions; growth and decay, inverse trigonometric functions, related rates; basic techniques of integration related to area and volume, polar coordinates; parametric equations; sequences and series; Taylor's series with the remainder; the mean value and inverse function theorem, elementary transcendental functions, and methods of integration. Upon completing the course, students should be able to apply calculus methods to areas of economics, science or engineering.

Prerequisite: MATH 011 or equivalent 1st year calculus course.

Course Materials:

Essential Calculus: Early Transcendentals, James Stewart, 2nd edition

Course Format and Requirements:

Attendance

Students are expected to attend and participate in class. Strong attendance and participation are good indicators of success. Each student is responsible for all course material, announcements, quizzes and exams made in class, whether or not the student attended that day's class.

Grading Scale:



A+: 98%-100%

A: 93%-97%

A-: 90%-92%

B+: 88%-89%

B: 83%-87%

B-: 80%-82%

C+: 78%-79%

C: 73%-77%

C-: 70%-72%

D+: 68%-69%

D: 63%-67%

D-: 60%-62%

F: Below 60%

Course Assignments:

Quizzes

There will be 6 quizzes administered through the whole semester and the LOWEST score will be dropped. Quizzes will always be completed in the first ten minutes of class. The quiz problems will be similar to homework problems and in-class examples. There will be no make-up quizzes.

Midterm Exams

There will be two midterm exams in this course. The midterm exam will be based on concepts covered in class. It will be in-class, close-book and non-cumulative.

Final Exam

The final will be cumulative and close-book. Note that the final will not be taken during the normal class times. Exact time and location for final will be announced later.

Course Assessment:

Quizzes (5 out of 6)	15%
Midterm Exams 1	25%
Midterm Exams 2	25%
Final Exam	35%
Total	100%

**Course Schedule:**

Week 1- Class 1	Week 1- Class 2
Review the Fundamental Theorem Volumes Using Cross-Sections	Volumes Using Cylindrical Shells Arc Length
Week 1- Class 3	Week 1- Class 4
Arc Length (Cont.) Areas of Surfaces of Revolution	<u>Quiz 1</u> Areas of Surfaces of Revolution (Cont.) Hyperbolic Functions
Week 1- Class 5	Week 1- Class 6
Integration by Parts Trigonometric Integrals	<u>Quiz 2</u> Trigonometric Integrals (Cont.) Trigonometric Substitution
Week 2- Class 7	Week 2- Class 8
Integration of Rational Functions by Partial Fractions Review for midterm 1	<i>Midterm 1</i>
Week 2- Class 9	Week 2- Class 10
Numerical Integration Improper Integrals	Improper Integrals (Cont.) Sequences
Week 2- Class 11	Week 2- Class 12
Sequences Infinite series	<u>Quiz 3</u> Infinite Series (Cont.) The Integral Test
Week 3- Class 13	Week 3- Class 14
Comparison tests	The Ratio Test (Cont.)



The Ratio Test	Root Tests
Week 3- Class 15	Week 3- Class 16
<u>Quiz 4</u> The Ratio and Root Tests (Cont.) Alternating Series, Absolute and Conditional Convergence	Alternating Series Absolute and Conditional Convergence (Cont.) Power Series
Week 3- Class 17	Week 3- Class 18
<u>Quiz 5</u> Taylor and Maclaurin Series Convergence of Taylor Series	Convergence of Taylor Series(Cont.) The Binomial Series
Week 4- Class 19	Week 4- Class 20
Applications of Taylor Series Review for Midterm 2	<i>Midterm 2</i>
Week 4- Class 21	Week 4- Class 22
Parametrizations of plane curves	Calculus with Parametric Curves
Week 4- Class 23	Week 4- Class 24
Polar Coordinates Graphing in polar coordinates	<u>Quiz 6</u> Graphing in Polar Coordinates (Cont.) Areas and Lengths in Polar Coordinates
Week 4- Class 25	<u>Final Exam (Cumulative): TBA</u>
Review for final	

Academic Integrity:

Students are encouraged to study together, and to discuss lecture topics with one another, but all other work should be completed independently.



Students are expected to adhere to the standards of academic honesty and integrity that are described in the Shanghai Normal University's *Academic Conduct Code*. Any work suspected of violating the standards of the *Academic Conduct Code* will be reported to the Dean's Office. Penalties for violating the *Academic Conduct Code* may include dismissal from the program. All students have an individual responsibility to know and understand the provisions of the *Academic Conduct Code*.

Special Needs or Assistance:

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.