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Nanchang University
MATH 22: Calculus II
(Last Updated in Jan. 2024)

Credit: 4

Contact Hours

This course is composed of 24 lecture sessions, 3 tutorial sessions and 9 office contact hours. Each lecture session takes 2 contact hours in length; each tutorial session takes 3 contact hours in length; There will be a Q-A review session (3 contact hours) and Final Exam (3 contact hours) at the end of this term. This course has 72 contact hours in total.

Course Description

The course begins with applications and techniques of integration. It probes notions of limit and convergence and ads techniques for finding limits. Half other course covers infinite sequences and series, where the basic question is: What meaning can we attach to a sum with infinitely many terms and why might we care? The course can help students improve their ability to reason abstractly and also teaches important computational techniques. Topics include integration techniques, l'Hôpital's rule, improper integrals, geometric and other applications of integration, infinite series, power series, and Taylor series.

Required Textbook

Textbook: *Schaum's Outline of Calculus*, 6th Edition, By Frank Ayres, Eliot Mendelson

Grading

- Participation 10%
- Mid-Term 1 20%
- Mid-Term 2 20%
- Quizzes 20%
- Final Exam 30%

A+ 96-100	A 90-95	A- 85-89
B+ 82-84	B 78-81	B- 75-77
C+ 71-74	C 66-70	C- 62-65
D 60-61	F < 60	

Course Schedule

The course has 24 class sessions in total. All sessions are 2 contact hours in length. At the end of this term, there will be a Q-A review session(3 contact hours) and Final Exam (3 contact hours).
Note: the course outline and required readings are subject to change.

Class 1:
Introduction to the course and a review of definite and indefinite integrals

Class 2:
Integration by Parts
Review of homework assignments

Class 3:
Trigonometric substitutions
Review of homework assignments

Class 4:
Integration by partial fractions
Review of homework assignments

Class 5:
Miscellaneous substitutions
Review of homework assignments; Quiz 1

Class 6:
Area and Arc length
Review of homework assignments

Class 7:
Midterm 1 Review

Class 8:
Midterm 1

Class 9:
Volume (disc and shell methods)

Class 10:
Area of surface of revolution
Review of homework assignments

Class 11:

l'Hôpital's rule
Review of homework assignments

Class 12:
l'Hôpital's rule (Cont.); Quiz 2

Class 13:
Improper integrals and Parametric representation of curves
Review of homework assignments

Class 14:
Differential Equations
Review of homework assignments

Class 15:
Infinite Sequences and Infinite Series

Class 16:
Midterm 2 Review

Class 17:
Midterm 2

Class 18:
Positive term series

Class 19:
Integral and Comparison Test
Review of homework assignments; Quiz 3

Class 20:
Alternating series test
Review of homework assignments

Class 21:
Absolute and conditional convergence
Review of homework assignments; Quiz 4

Class 22:
Power series and Taylor and Maclaurin series

Class 23:
Power series and Taylor and Maclaurin series (Cont.)
Final Exam Review

Class 24:
Final Exam

Attending Policy

Regular and prompt attendance is required. Under ordinary circumstances, you may miss two times without penalty. Each absence over this number will lower your course grade by a third of a letter and missing more than five classes may lead to a failing grade in the course. Arriving late and/or leaving before the end of the class period are equivalent to absences.

Policy on "Late Withdrawals"

In accordance with university policy, appeals for late withdrawal will be approved ONLY in case of medical emergency and similar crises.

Academic Honesty

Nanchang University expects all students to do their own work. Instructors will fail assignments that show evidence of plagiarism or other forms of cheating, and will also report the student's name to the University administration. A student reported to the University for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

General Expectations:

Students are expected to:
— Attend all classes and be responsible for all materials covered in class and otherwise assigned;
— Complete the day's required reading and assignments before class;
— Review the previous day's notes before class and make notes about questions you have about the previous class or the day's reading;
— Participate in class discussions and complete required written work on time;
— Refrain from texting, phoning or engaging in computer activities unrelated to class during the class period;
— While class participation is welcome, even required, you are expected to refrain from private conversations during the class period.

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.