



Nanchang University

MATH353: Multi-variable Calculus II

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 studies the subject of calculus of multi-variables, introducing the concept of differential geometry and analytic geometry. This course focuses on the problem solving techniques and applications of the theory.

Learning Outcomes

Upon successful completion of the course, students are expected to:

1. Recognize how three-dimensional geometry objects are represented by vectors
2. Understand the significant of math modeling in science
3. Recognize the limit of different systems of coordinates
4. Understand how to use integral to calculate volume

Required Textbook

Calculus, 7th Edition by James Stewart (ISBN-10: 0538497815)



Grading

- Class Attendance 10%
- Quizzes 20%
- Mid-term Exam 30%
- Final Exam 40%

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:

The Definite Integral

Class 2:

The Fundamental Theorem of Calculus

Quiz

Class 3:

Indefinite Integrals and the Net Change Theorem

Class 4:

Double Integrals over Rectangles

Quiz

Class 5:

Double Integrals over General Regions I

Class 6:

Double Integrals over General Regions II



Class 7:
Double Integrals in Polar Coordinates

Class 8:
Applications of Double Integrals
Quiz

Class 9:
Change of Variable in Mult Integrals

Class 10:
Surface Area

Class 11:
Triple Integrals
Quiz

Class 12:
Midterm Review

Class 13:
Triple Integrals in Spherical Coordinates

Class 14:
Change of Variables in Multiple Integrals
Quiz

Class 15:
Vector Fields

Class 16:
Line Integrals
quiz

Class 17:
The Fundamental Theorem for Line Integrals

Class 18:
Green's Theorem

Class 19:
Curl and Divergence



Class20:

Parametric Surfaces and Their Areas
quiz

Class 21:

Surface Integrals

Class 22:

Stokes' Theorem
Quiz

Class 23:

The Divergence Theorem

Class 24 :

Final review

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.