Capital University of Economics and Business
Overseas Chinese College
2017-2018 Academic Year Spring Semester

MAT112 Syllabus

Semester and Year **Spring Semester March 5, 2018-July 6, 2018**

Course Name **Calculus II**

Course Number **MAT 112**

Section **Y03**

Course Credits **4**

Instructor **Prof. Jake Huang**

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Contact Information **Office Room: C115, Telephone: 8395 1082**

Office Hour **M 13:30-15:30, T, W 15:30-17:30**

Learning Center **M 18:00-20:00, T 13:30:00-15:30**

Course Description

Calculus is one of the fundamental courses for university education. On the practical side, calculus is indispensable for the undertakings such as earth satellites, space exploration, cyclotrons, weather prediction, actuarial science, computer technology and electronics. It is a prerequisite for anyone wishing to study disciplines such as psychology, economics, sociology, geology, physics, engineering, and mathematics itself. Calculus II is the second part of calculus. This course introduces the parametric equations and polar coordinates, infinite sequences and series, vector functions, techniques of multivariable differentiation and integration.

Student Learning Objectives

Upon completion of the course, the students should master four types of questions. 1) The students should know the concepts and basic properties of parametric equations and applications of definite integral. 2) They should master the theory of infinite sequences and series. 3) They should be familiar with the vector function and space geometry. 4) They should. gain deeper understanding of the multivariable differentiation, with the ability to calculate multiple integrals by using the methods of integration as well as to be able to solve some application problems by using multivariable integration.

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Textbook

James Stewart, Seventh Edition. Higher Education Press (Thomoson) ISBN 978-7-04-039621-8

Reference Book

Anton, Bivens & Davis. Calculus (Sixth Edition). Houghton Mifflin Company (1998). Time Roman by Techseters, Inc. ISBN: 0 – 471 – 38157 – 8

Library Source

Students can find reference Calculus books and exercises in the library or related materials on the Internet.

Pre-requisite: MAT 111

Teaching methods

This course consists of lectures, discussions and student presentations. Students must be prepared to finish some small questions and small quizzes during the class.

Grade Criterion:

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class
Mid-Term Exam	20%	A cumulative mid term examination will be given based on all of the contents of the first half of the class.
Homework	15%	Homework problems will be assigned throughout the term, including but not limited to: terminologies, research project, and reading assignments.
Quiz	10%	There will be several quizzes during the semester. The purpose of the quizzes is to ensure that students keep up with the readings.
Participation	10%	Individuals will be asked to participate individually in questions during the semester. Students are required to meet with their teachers every week. Their performances should be counted in their participation.
Presentation	15%	Content50%+organization10%+language15%+performance25%
Attendance	10%	Refer to attendance policy listed below.
Total	100%	

Detailed Grade Computation

In a semester, the grade of attendance, participation, assignment/homework, and quiz accounts 60 percent in final grade, the midterm exam and final exam accounts 20 percent in final grade, respectively. 40 percent before midterm, and 60 percent after midterm. That is shown as in the following table:

	Before midterm	After midterm
Attendance	5%	5%
Participation	5%	5%
Homework/assignment	5%	10%
Quiz	5%	5%
Midterm exam	20%	
Final exam		20%
Presentation		15%
Total	40%	60%

Grading Policy

A+ 97-100 A 93-96 A- 90–92 B+ 87-89 B 83-86 B- 80–82

C+ 75–79 C 70-74 C- 67–69 D+ 63–66 D 62-60 F 0- 59

Exam Schedule

Midterm: May 7 – May 11, 2018

Final: June 25- June29, 2018

Homework

The homework of one class must be submitted before next class. Holiday assignment must be submitted on the first class after school reopens. No late homework is acceptable. All students should hand in homework and assignment with hard copies. Assignment should be printed with a headline of pledge of honesty. The score of assignment is determined by the accuracy and relevance. If students have English problems reading textbook or writing report, they should ask the teachers in the Learning Center.

Attendance

Being late for 15 minutes will result in unexcused absence. Each unexcused absence will result in 10% reduction of attendance grade. Five hours of unexcused absences will result in the lowering of grade by

one level, i.e. A to A-. 30 hours (30% of total class hours) of absences under any circumstances forces a withdrawal from the course and get a grade of "F". An excused absence must be discussed directly with the teacher. An incomplete grade I will be considered in case of medical or family emergencies.

Participation

Students should participate in classes actively**.** Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates. Students should also use office hour to ask questions or talk with the instructor for good communication and effective learning. Frequent visiting instructor in office hour and checking your English will be highly evaluated. Any misbehavior and non-class related activities in class will result in the lowering of the participation grade, including ringing beepers and cell phones. All above behaviors will be solely evaluated by the instructor for scoring.

Self-Study and Reading Ability Practice

Instructor will give out the chapters or the reference books to read and use class hours to have discussion; students should be able to show a proactive attitude and ability for self-study and reading. Knowledge and oral English will be elements of homework or presentation score.

Topical Course Outline

Week Index	Content
0305– 0309 Week 1	Review of Calculus I
0312-0316 Week 2	Trigonometric integrations and substitutions
0319-0323 Week 3	Partial Fractions Improper Integrals
0326—0330 Week 4	Area Volume Arc Length

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0402-0406 Week 5	Differential Equations
0409-0413 Week 6	Calculus with Parametric Curves Calculus with Polar Curves
0416-0420 Week 7	Sequences and Series
0423-0427 Week 8	Divergence Test Integral Test
0430-0504 Week 9	Comparison Tests Quiz 1
0507-0511 Week 10	**Midterm**
0514-0518 Week 11	Alternating Series Absolute Convergence and Conditional Convergence Ratio & Root Test Strategy for Testing Series
0521-0525 Week 12	Power Series Representation of Functions as Power Series Taylor and Maclaurin Series
0528-0601 Week 13	Three Dimensional Coordinate Systems Equations of Lines and Planes Vector Functions and Space Curves
0604-0608 Week 14	Derivatives and Integrals of Vector Functions Functions with Several Variables Limits and Continuity Exercise
0611-0615 Week 15	Partial Derivatives Tangent Planes and Linear Approximations Chain Rule-Part One

0618-0622 Week 16	Chain Rule-Part Two Maximum and Minimum Values-Part One Maximum and Minimum Values-Part Two Double Integrals over Rectangles
0625-0629 Week 17	Iterated Integrals Double Integrals over General Regions-Part One Double Integrals over General Regions-Part Two Triple Integrals
0702-0706 Week 18	Chinese Review Session Quiz 2
0709-0713 Week 19	Presentations
0716-0720 Week 20	**Final Exam**

Teacher's Office Hour

The instructor's office hour is shown in the front of the office door. Students are required to use the instructor's office hour to ask questions or talk with the instructor once every two weeks for good communication and effective learning, which is recorded in the students' participation. The time can be scheduled by instructors or students, or both.

Cheating and Plagiarism

Cheating is not tolerated. Any student caught cheating on a quiz; test or exam will be given a mark of zero for the particular work. At the beginning of the semester the definition of plagiarism will be carefully explained. When any thoughts or writings of another person are used, they must be clearly identified (usually one uses quotation marks) and the source notes. **If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".**

Important Dates

Spring Semester, 2018	**March 4, 2018— July 20, 2018**
Mar. 4	Registration
Mar. 5	Classes Begin
Mar. 16	Last Day to Drop or Add a Course with no Charge
Apr. 5	Qingming Festival (tentative)
Apr. 20	Spring Sports (tentative)
May 1	Labor Day Holiday (tentative)
May 7-11	Midterm Exams

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May 14-18	Summer School Registration
June 18	Duanwu Festival (tentative)
June 25-29	Sophomore and Junior students' Final Exam
June 2- July 20	Sophomore and Junior students' Social Practice Summer School
July 16-20	Revision and Final Exam Period
July 23	Summer Vacation Begins

Note: *This syllabus is tentative and may be changed or modified throughout the semester. All students will be notified and a new syllabus will be given.*