首都经济贸易大学
CAPITAL UNIVERSITY OF ECONOMICS AND BUSINESS

Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Year and Semester	2018 Fall (September 3, 2018 - January 13, 2019)
Course Name	Calculus I
Course Code	MAT 111
Course Type	☑ General Education (Required) ☐ General Education (Elective)
	☐ Professional Course (Required) ☐ Professional Course (Elective)
	☐ Basic Disciplinary Course
Course Credits	4
Course Hours	64
Prerequisites	None
Instructor	Ling Li (Nick Li)
Contact Information	Office: C217
	Tele: 010-83951082
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Office Hour	M:13:30-15:30 T:13:30-15:30 W:10:00-12:00
Learning Centre	M:15:30-17:30 T:18:30-20:30
Grade/Section	2018ACCA1/Y03
Course Time/Place	Tuesday: 8:00-9:50 & Friday: 13:30-15:20/A104

Textbook

James Stewart. Calculus (Seventh Edition). Higher Education Press. ISBN: 978-7-040-39620-1

Reference Book

1. Colin Adams, Joel Hass, Abigail Thompson: How to Ace Calculus-The Streetwise Guide, W H Freeman & Co (1998), ISBN: 0-716-73160-6
2. Anton, Bivens & Davis. Calculus (Seventh Edition). John Wiley & Sons, Inc(2002). ISBN: 0-471-38157-8

Course Description

This course will focus on single variable calculus. It contains: function, limit and continuity, derivative and its applications, the concept and property of definite and indefinite integrals and the application of them, the differential equation and its application.

Student Learning Objectives

After completing this course, students will be able to:

- Good computational ability
- Logical ratiocinating ability
- The using known knowledge to resolve unknown problem ability
- Deeper understanding of functions
- Able to use the derivative and integral to set up and solve mathematical questions

- Able to solve the questions to differential equations

Website Source

1. https://www.khanacademy.org
2. https://open.163.com/index.html

Teaching Methods

This course contains lectures, class discussions, homework, quizzes, presentation and exams. Textbook content will be introduced first. Then practice questions will be delivered to students as a way to test their understanding of the knowledge. This will require individual or group assignment in or after 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. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Mid-Term Test	20%	A cumulative midterm examination will be given based on all of the contents of the first half of the class. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Homework	15%	Most of the assigned homework is taken from the Exercises in the textbook. Assignments will be collected at the clearly stated date. Late assignments will not be accepted. The graded assignments will be kept by the tutor for reference and won't be returned to students.
Quizzes	15%	There will be at least 2 quizzes during the semester. The purpose of the quizzes is to ensure that students keep up with the readings. It may also be used as a way to check the attendance. Quizzes will test your knowledge of both concepts and the application of those concepts.
Presentation	10%	The students will be divided into several groups to prepare a presentation. Each student is required to be involved in the presentation. The topics can be selected from the textbook or lectures. Each group need to finish a PPT related to the topic which is given and hand in the related resources to the teacher before the presentation. The percentage is : content50%+organization10%+language15%+performance25%
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.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	Before Midterm	**After Midterm**
Attendance	5%	5%
Participation	5%	5%
Homework	5%	10%
Quizzes	5%	10%
Presentation		10%
Midterm test	20%	
Final exam		20%
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 Test: Oct.29-Nov.2, 2018;

Final Exam: January 7-11, 2019

Assessment of Student Performance

☞ *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.

☞ *Homework*

Students should finish their homework by themselves. Copying from others will be treated as cheating and the homework scores will be lowered. Students should hand in all assignments on time. Late assignments will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Late assignments without reasonable proof will be reduced in score by 50%.

☞ *Attendance*

Because the course covers a great deal of material, attending every class session is very important for performing well.

⬧ Being late for 15 minutes or more is considered an absence.

⬧ Five hours or above of unexcused absences will result in the lower level of the final grade by one grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.

⬧ Absence which is more than 1/3 of the total teaching hours will cause an F (a failing grade) directly. but students are welcome to continue attending classes.

⬧ 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 hours to ask questions or talk with the instructor for good communication and effective learning.
- Frequent visiting the instructor and chatting in English during office hours is highly recommended.
- Any misbehavior and non-class related activities in class will result in the lower level of the participation grade, including ringing cell phones.
- All above behaviors will be solely evaluated by the instructor for scoring.

☞ *Textbook*

Students must bring the textbook to class.

Topical Course Outline

Week	Date	Topics	Homework
4	Sep.25	● Introduction to the syllabus ● Chapter 1 • Better understanding of definition and properties of functions • Master some essential kinds of functions	**Textbook Page 20:7-10** **Textbook Page 21:25,27-30** **Textbook Page 33:3-4**
	Sep.28	● Chapter 1 • Can get new functions from old functions • Know properties of exponential functions ● Exercise for Chapter 1	**Textbook Page 42:1-3** **Textbook Page 43:31-36** **Textbook Page 57:17**
5	Oct.1-Oct.7	●National Holiday	——
6	Oct.9	● Chapter 2 • Understand the tangent and velocity problem • Master the definition of limit • Can calculate limits by using limit laws expertly	**Textbook Page 96:4-8**
	Oct.12	● Chapter 2 • Understand the precise definition of a limit • Master the definition and property of continuity, can determine whether a function is continuous or not, can apply intermediate value theorem to some questions;	**Textbook Page 127:1-4**
7	Oct.16	● Chapter 2 • Know how to calculate limits at infinity, and know how to find vertical and horizontal asymptotes	**Textbook Page 141:15-38**
	Oct.19	● Chapter 2 • Master the definition of derivative, and can use definition to find derivative • Can find derivative as a function ● Exercise for Chapter 2	**Textbook Page 151:27-32**
8	Oct.23	● Chapter 3 • Know how to find derivative of polynomials and exponential functions • Master the product and quotient rules	**Textbook Page 181:15-28**
	Oct.26	● Chapter 3 • Master how to calculate derivative of trigonometric functions • Can use chain rule to find derivative of composite	**Textbook Page 197:1-16** **205:7-20**

		functions • Review for the Midterm Test	
9	Oct.29-Nov.2	● Quiz I ● Midterm Test	——
10	Nov.6	● Chapter 3 • Exercise on the derivative of trigonometric functions • Know how to find derivative of implicit functions • Know how to find higher derivatives	**Textbook Page 215:5-20**
	Nov.9	● Analysis for the Midterm Test ● Chapter 3 • Know how to find derivative of logarithmic functions	**Textbook Page 223:2-22**
11	Nov.13	● Chapter 3 • Exercise on the derivative of logarithmic functions • Master linear approximation and the definition of differentials ● Exercise for Chapter 3	**Textbook Page 264:1-15**
	Nov.16	● Chapter 4 • Can find maximum and minimum values of a function • Exercise on finding the critical number of the function	**Textbook Page 281:29-44**
12	Nov.20	● Chapter 4 • Master the mean value theorem and its application • Exercise on application of the mean value theorem	**Textbook Page 288:1-4**
	Nov.23	● Chapter 4 • Know how derivative affect the shape of a graph • Exercise on the first and second derivative test	**Textbook Page 299:33-44**
13	Nov.27	● Chapter 4 • Know what is indeterminate form and can use L'Hospital's Rule to find limit	**Textbook Page 307:7-14**
	Nov.30	● Chapter 4 • Know how to use calculus to solve optimization problems • Know the meaning of antiderivatives and can find it ● Exercises for Chapter 4	**Textbook Page 348:1-22**
14	Dec.4	● Chapter 5 • Understand the area and distance problem • Master the definition of definite integral	**Textbook page 383:21-25**
	Dec.7	● Chapter 5 • Understand how to evaluate integrals • Master the midpoint rule and basic properties of the definite integrals	**Textbook Page 384:59-64**
15	Dec.11	● Chapter 5 • Master the fundamental theorem of calculus • Exercise on the fundamental theorem of calculus	**Textbook Page 395:19-44**
	Dec.14	● Chapter 5 • Master the definition of indefinite integral and the net change theorem • Can calculate integral by using substitution	**Textbook Page 413:1-6**
16	Dec.18	● Chapter 5	

		• Exercise on calculate the integral by using substitution • Master how to do the integration by parts ● Exercises for Chapter 5	**Textbook Page 416:1-17**
	Dec.21	● Chapter 5 • Master the trigonometric integrals • Master how to do the trigonometric substitution	**Textbook Page 468:3-36**
17	Dec.25	● Quiz II	——
	Dec.28	● Presentation	——
18	Dec.31-Jan.4	● Final Review	——
19	Jan.7-Jan.11	● Final Exam	

Note: Some chapters or sec tions may leave for self-study, this is the students' duty to learn and understand, they may also be included in the quizzes or exams.

A review in Chinese may be held during L.C. and O.H. in the semester.

Teacher's Office Hour

♦ The instructor's office hour is shown in the front of the office door.

♦ Students are suggested to use the instructor's office hour and learning center to ask questions or talk with the instructor once at least per week 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 (0) 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

Fall Semester, 2018	**August 31, 2018— January 13, 2019**
Aug. 31	Registration
Sep.3	Classes Begin
Sep.7 - 20	Freshmen's Military Training
Sep.24	Classes Begin （Freshmen）
Sep.24	Mid-Autumn Festival (tentative)
Oct.1 - 5	National Day Holiday (tentative)
Oct. 29 - Nov. 2	Mid-term Test
Jan.1, 2019	New Year's Day Holiday (tentative)
Jan.7-11	Final Exam Period
Jan.14	Winter 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.

Instructor: __Li Ling_____   **Department Head:** ___Prof. Jingning Li_____

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