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# Capital University of Economics and Business

## Overseas Chinese College

### Course Syllabus

<b><u>Year and Semester</u></b>	2023 Spring (Sophomore )	
<b><u>Course Name</u></b>	Calculus II	
<b><u>Course Code</u></b>	MAT112	
<b><u>Course Type</u></b>	√ General Education (Required)	General Education (Elective)
	Basic Disciplinary Course	Professional Course (Required)
	Professional Course (Elective)	Professional Course (Expanded)
<b><u>Course Credits</u></b>	4	
<b><u>Course Hours</u></b>	64	
<b><u>Prerequisites</u></b>	MAT111	
<b><u>Instructor</u></b>	Lemon Li, Li Ling	
<b><u>Contact Information</u></b>	<a href="mailto:occ_limeng@cueb.edu.cn">occ_limeng@cueb.edu.cn</a> <a href="mailto:liling@cueb.edu.cn">liling@cueb.edu.cn</a>	
<b><u>Office Hour</u></b>	TBA	
<b><u>Learning Centre</u></b>	TBA	
<b><u>Grade/Section</u></b>	22ACCA1/22ACCA2/22BA/22CFA/22IT	
<b><u>Course Time/Place</u></b>	2022ACCA1 13 : 30-15:05/8 : 00-9 : 35 M/W A101 2022ACCA2 9 : 55-11:30/8 : 00-9 : 35 T/TH A102 2022IT 13 : 30-15:05/9 : 55-11:30 T/W A104 2022 CFA 15:25-17:00/ 9 : 55-11:30 M/TH A105 2022 BA 13 : 30-15:05/ 9 : 55-11:30 M/W 5#109	

**Textbook** :James Stewart, Calculus

## **Reference Book**

- R. Spiegel. Schaum's outline of theory and problems of calculus. Schaum's outline series. McGraw-Hill, New York, 1975. • L. Blank. Statistical procedures for engineering, management, and science. McGraw Hill, New York, 1980. • K. Subrahmaniam. A primer in probability, volume 111 of Statistics: textbooks and monographs. Marcel Dekker, New York, second edition, 1990.
- Feller. An introduction to calculus and its applications. Wiley series in probability and mathematical statistics. Wiley, New York, third edition, 1967-1968.
- C. Giri. Introduction to calculus (in two parts), volume 7 of Statistics: textbooks and monographs. Marcel Dekker, New York, 1974.

The textbook and reference book mainly cover the knowledge that instructor introduced in the class, but not limited to these books, students should have the ability to search and expose to the resources to support study.

## **Course Description**

This course will focus on one 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, sequence and series, etc.

## **Student Learning Objectives**

After learning this course, students will be able to:

### Knowledge :

- ◆ explain the general principles and theories of calculus
- ◆ describe the thinking method and the methodology of calculus properly
- ◆ identify features of quantitative methods

### Capability :

- ◆ apply the calculus methods to analyze situations in many different fields
- ◆ apply the methods in calculus to make effective decisions
- ◆ analyze the real life situations using the tool of calculus
- ◆ demonstrate effective professional skills

### Mindset:

Establish the integrity and objectivity in workplace

Be ethical, logical, methodical, consistent and accurate

Apply critical thinking in the process of decision making

### **Teaching Methods**

This course contains lectures, class discussions, homework, quizzes, presentation and exams. Textbook content will be introduced first. Then real case and 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 class.

### **Grade Criterion**

<b>Component</b>	<b>Weight</b>	<b>Description</b>
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. The exam paper may be composed of multiple-choice questions, short answer questions, essay questions and practice problems. Students should rely primarily on homework assignments to give them a sense of what they may see for material on exams.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents that have been taught in class. The test paper may be mainly composed of multiple-choice questions and it should be completed within 60 minutes in class.
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. Quizzes may or may not be announced in advance. 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.
Participation	10%	Individuals will be asked to participate individually in a question and answer at least 5 times during the semester. The performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
<b>Total</b>	<b>100%</b>	

### **Detailed Grade Computation**

	<b>Before Midterm</b>	<b>After Midterm</b>
Attendance	5%	5%
Participation	5%	5%
Homework	5%	10%
Quizzes	5%	10%
Presentation		10%
Midterm test	20% (5% of critical thinking)	
Final exam		20% (5% of critical thinking)
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: TBA

Final Exam: TBA

### **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	Topics	Homework	思政内容
1	<ul style="list-style-type: none"> <li>● Syllabus</li> <li>● Introduction to integration calculus</li> </ul>	Homework will be given on the Superstar App(学习通)	
2	<ul style="list-style-type: none"> <li>● Integration by part</li> <li>● Introduction to trigonometric integration</li> </ul>	Homework will be given on the Superstar App(学习通)	
3	<ul style="list-style-type: none"> <li>● Introduction to trigonometric substitution</li> <li>● Introduction to partial fraction</li> <li>● Introduction to area problem</li> <li>● Find area between curves</li> </ul>	Homework will be given on the Superstar App(学习通)	以当下热门话题为切入 引入思政内容： 积少成多
4	<ul style="list-style-type: none"> <li>● introduction to volume problems</li> <li>● Find volume by disk method</li> <li>● Find volume by shell method</li> </ul>	Homework will be given on the Superstar App(学习通)	
	<ul style="list-style-type: none"> <li>● Introduction to differential equations</li> <li>● Separable differential equation</li> <li>● Linear differential equation</li> </ul>	Homework will be given on the Superstar App(学习通)	
5	<ul style="list-style-type: none"> <li>● Introduction to improper integral</li> <li>● More on improper integral</li> </ul>		Due to qingming festival Schedule may be adjusted
6	<ul style="list-style-type: none"> <li>● More on differential equations</li> <li>● Application of differential equations</li> </ul>	Homework will be given on the Superstar App(学习通)	以当下热门话题为切入 引入思政内容： 不积跬步无以至千里
7	<ul style="list-style-type: none"> <li>● Midterm Exam</li> </ul>		
8	<ul style="list-style-type: none"> <li>● Parametric equations</li> <li>● Polar equations</li> </ul>	Homework will be given on the Superstar App(学习通)	结合当前实际, 引入具体案例, 渗透思政元素
9	<ul style="list-style-type: none"> <li>● Introduction to sequence and series</li> </ul>	Homework will be given on the Superstar	

	● Convergence of sequence	App(学习通)	
10	● Introduction to convergence and divergence of series	Homework will be given on the Superstar App(学习通)	Due to Labor day festival Schedule may be adjusted
	● Introduction to integral test	Homework will be given on the Superstar App(学习通)	
11	● Introduction to geometric series ● Introduction to comparison test		
12	● Introduction to alternating series ● Alternating series test	Homework will be given on the Superstar App(学习通)	
13	● Introduction to ratio ● Introduction to root test ● Application of ratio and root test	Homework will be given on the Superstar App(学习通)	以当下热门话题为切入 引入思政内容： 不以善小而不为 不以恶小而为之
14	● Introduction to power series ● More on power test	Homework will be given on the Superstar App(学习通)	
15	● Introduction to Taylor series ● Introduction to Maclaurin series ● application of series	Homework will be given on the Superstar App(学习通)	
16	● Presentation		

*Note: Some chapters or sections 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".**

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**Instructor: Liling Limeng      Department Head: Lijingning**

