Capital University of Economics and Business
Overseas Chinese College
2019-2020 Academic Year Fall Semester

MAT111 Syllabus

Semester and Year **Fall Semester**

September 2, 2018— January 10, 2019

Course Name **Linear Algebra**

Course Number **MAT221**

Section **Y02/03/04**

Course Credits **3**

Teaching Hours **3*17=51 Hours**

Course Type

o General Education (Required)

o General Education (Elective)

o Professional Course (Required)

þ Professional Course (Elective)

o Basic Disciplinary Course

Instructor **Prof. Lemon Li**

Contact Information **Office: C217**

Email: occ_limeng@cueb.edu.cn

Office Hour **W 8-10，14：30-15：30 TH 8-10，11-12**

Leaning Center **T 15：30-17：30 18:00-20:00**

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.

Student learning objectives

Upon completion of the course, the students should have good computational ability, logical ratiocinating ability, and the using known knowledge to resolve unknown problem ability. They should gain deeper understanding of functions, be able to use the derivative and integral to set up and solve mathematical models

from verbal descriptions and can solve the questions related to differential equations.

Textbook
James Stewart. Calculus(Fifth Edition). Higher Education Press. ISBN: 7– 04– 014003– 9
Library Source
Students can find reference books in the library or related materials on the Internet.

Reference materials
Colin Adams, Joel Hass, Abigail Thompson: How to Ace Calculus-The Streetwise Guide, W H Freeman & Co (1998), ISBN: 0716731606

Anton, Bivens & Davis. Calculus (Seventh Edition). John Wiley & Sons, Inc(2002). ISBN: 0 – 471 – 38157 – 8
Teaching methods

This course consists of lectures, discussions and student presentations. Students will be divided into small groups with a group leader helping others in the group. 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. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
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. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Homework	15%	Homework problems will be assigned throughout the term, including but not limited to: terminologies, research project, and reading assignments.
Quiz	20%	There will be several times quizzes during the semester. The purpose of the quizzes is to ensure that students keep up with the readings.
Participation	15%	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	10%	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. The grade is arranged 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%	10%
Midterm exam	20%(5% for Critical Thinking)	
Final exam		20%
Presentation		10%
Total	40%	60%

Grading Policy

A+ 100 – 97 A 96-93 A- 92–90 B+ 89-87 B 86-83 B- 82–80
C+ 79–75 C 74-70 C- 69–67 D+ 66–63 D 62-60 F 59 -0

Homework

Students should finish their homework (except for group projects) by themselves. **Copying from others will be treated as cheating. Students' homework scored will be lowered.** Students should hand in all assignments promptly and on time. Late assignment will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Assignment turned in late without proof of illness or had an excused absence will be reduced in score by 50%.

Assignment should be printed out. Anything that cannot be read will be marked wrong. Printing requirements are as followed: single space between lines, double space between paragraphs, font size is 12 (maximum). Grammar error can reduce 20% of your score.

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-. **18 class hours of absences under any circumstances forces a withdrawal from the course and get a grade of "F".**

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. Any misbehavior and non-class related activities in class would 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.

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Topical Course Outline

Date	Week Index	Content
0902-0920	Week 1-3	New students registration
0923-0927	Week 4	**Ch1 Functions and Models** 1. Better understanding of definition and properties of functions 2. Master some essential kinds of functions 3. Can get new functions from old functions 4. Know properties of exponential functions
1001-1007	Week 5	**National Holiday**
1008-1011	Week 6	**Ch2 Limits and Derivatives** 1. Understand the tangent and velocity problem 2. Master the definition of limit 3. Can calculate limits by using limit laws expertly 4. Understand the precise definition of a limit
1014-1018	Week 7	5. Master the definition and property of continuity, can determine whether a function is continuous or not, can apply intermediate value theorem to some questions; 6. Know how to calculate limits at infinity, and know how to find vertical and horizontal asymptotes 7. Master the definition of derivative, and can use definition to find derivative 8. Can find derivative as a function
1022-1025	Week 8	**Ch3 Differentiation Rules** 1. Know how to find derivative of polynomials and exponential functions 2. Master the product and quotient rules 3. Know how to calculate derivative of trigonometric functions 4. Can use chain rule to find derivative of composite functions
1028-1101	Week 9	**Midterm Examination**
1104-1108	Week 10	5. Know how to find derivative of implicit functions 6. Know how to find higher derivatives 7. Can find derivative of logarithmic functions Review of midterm exam
1111-1115	Week 11	Exercise Review for Midterm exam &quiz
1118-1122	Week 12	Analysis for Midterm Exam Master the definition of differentials **Ch 4 Applications of differentiation** 1. Can find maximum and minimum values of a function
1125-1129	Week 13	2. Master the mean value theorem and its application 3. Know how derivative affect the shape of a graph 4. Know what is indeterminate form and the can use L'Hospital's Rule to find limit
1202-1206	Week 14	5. Know how to use calculus to solve optimization problems 6. Know the meaning of antiderivatives and can find it

1209-1213	Week 15	**Ch5 Integrals** 1. Understand the area and distance problem 2. Master the definition of definite integral
1216-1220	Week 16	3. Master the fundamental theorem of calculus 4. Master the definition of indefinite integral and the net change theorem, 5.Can calculate integral by using substitution
1223-1227	Week 17	**Quiz II** Review &Presentation
0101-0110	Week 18	**Final Examination**

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 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".**

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 : Prof. Lemon Li **Department Head: Prof. Jingning.Li**