



FENG CHIA UNIVERSITY

Calculus I

MATH101, Summer 2019 (May 13 - Jun 14)

Lecturer: Tessie St. John

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Time: Monday through Friday

Contact hours: 60 (50 minutes each)

Credits: 4

Office hours: 2 hours (according to the teaching schedule)

Course Description

Review of algebraic and trigonometric functions and their graphs, the concepts of limit and continuity, theory and techniques of differentiation, and applications of differentiation, introduction to the theory and techniques of integration.

Required Textbook

“Calculus”, 11th Edition by Larson.

Coverage: Chapters 1-6, Select Sections

Contents

Chapter 1: Limits and Their Properties

1.2: Finding Limits Graphically and Numerically (74)

1.3: Evaluating Limits Analytically (71)

1.4: Continuity and One-Sided Limits (65)

1.5: Infinite Limits (60)

Chapter 2: Differentiation

2.1: The Derivative and the Tangent Line Problem (67)

2.2: Basic Differentiation Rules and Rates of Change (76)

2.3: Product and Quotient Rules and Higher-Order Derivatives (78)

2.4: The Chain Rule (73)

2.5: Implicit Differentiation (58)

2.6: Related Rates (56)

Chapter 3: Applications of Differentiation

3.1: Extrema on an Interval (57)

3.3: Increasing and Decreasing Functions and the First Derivative Test (64)

3.4: Concavity and the Second Derivative Test (64)

3.5: Limits at Infinity (71)

3.6: A Summary of Curve Sketching (64)

3.7: Optimization Problems (65)

Chapter 4: Integration

4.1: Antiderivatives and Indefinite Integration (81)

4.2: Area (78)

4.3: Riemann Sums and Definite Integrals (64)

4.4: The Fundamental Theorem of Calculus (111)

4.5: Integration by Substitution (82)

Chapter 5: Logarithmic, Exponential, and Other Transcendental Functions

5.1: The Natural Logarithmic Function: Differentiation (70)

5.2: The Natural Logarithmic Function: Integration (87)

5.4: Exponential Functions: Differentiation and Integration (85)

5.5: Bases Other than e and Applications (80)

5.6: Indeterminate Forms and L'Hôpital's Rule (77)

Chapter 6: Differential Equations

6.2: Growth and Decay (75)

Course Hours

Class will meet for two hours every day Monday through Friday for a total of 50 hours over the five-week period.

Prerequisites

Students are assumed to have taken and passed a pre-calculus course. In particular, students should be proficient in high school algebra and geometry, as well as trigonometry. Moreover, they should have studied exponential and logarithmic functions.

Calculators

No calculators or cell phones may be used on tests.

Assignments and Graded Work

Material will be covered very quickly; it will be difficult to catch up, should one fall behind.

Homework: Specific homework exercises will be assigned. It is expected that you will read the sections and complete the assignments by the given due date. It is totally fine and, indeed, encouraged, to help each other solve homework problems, but it is not okay to turn in essentially identical solutions; once you have discussed the problems you should write the solutions up on your own. Not all homework problems will be graded.

Exams: There will be five exams and a comprehensive final exam.

Exams 1 - 4	60%
Homework	10%
Quizzes	10%
Final Exam (Cumulative)	20%

Grading Policy

Letter Grade	Score
A	80-100
B	70-79
C	60-69
D	50-59
E	Below 50

Late Assignments and Make-up Exams

If under ANY circumstances (excused or unexcused) you cannot take a test, you will have the ability to have the final replace your missing (or lowest) test score. However, this only holds for ONE exam. Do not bring me notes from doctors, police, or other qualified professionals for absences. The date and time for the final is SET! You must show all of your work on the tests. Unsupported answers will earn no credit. Partial credit is given for correct work shown even if you do not get the correct answer.

There are no late submissions for any assignments. The due dates are firm.

Approximate Course Schedule

Day	TOPIC/ACTIVITY	Day	TOPIC/ACTIVITY
May 13	1.2 and 1.3	May 14	1.4 and 1.5
May 15	2.1 and Test Review	May 16	Test over 1.2 – 2.1
May 17	2.2 and 2.3	May 20	2.4 and 2.5
May 21	2.6 and Test Review	May 22	Test over 2.2 – 2.6
May 23	3.1 and 3.3	May 24	3.4 and 3.5
May 27	3.6 and 3.7	May 28	Test Review and Test over 3.1 – 3.7
May 30	4.2 and 4.3	May 31	4.1 and 4.4
June 3	4.5 and Test Review	June 4	Test over 4.1 – 4.5
June 5	5.1 and 5.2	June 6	5.4 and 5.5
June 7	5.6 and 6.2	June 10	Test Review and Test over 5.1 – 6.2
June 12	Final Exam		

Syllabus Disclaimer

The instructor reserves the right to make changes on this syllabus should the need arise. You will be given ample notice should any changes take place. Please feel free to ask questions through email or through texts and to consult me any time you wish to do so. The best means of contacting me is by e-mail, so please utilize this. It is vital that you do not fall behind.

Remember, the only stupid question is the question unasked.

Academic Honesty

Feng Chia University defines academic misconduct as any act by a student that misrepresents the student's own academic work or that compromises the academic work of another. Scholastic misconduct includes (but is not limited to) cheating on assignments or examinations; plagiarizing, i.e., misrepresenting as one's own work any work done by another; submitting the same paper, or a substantially similar paper, to meet the requirements of more than one course without the approval and consent of the instructors concerned; or sabotaging another's work within these general definitions. Instructors, however, determine what constitutes academic misconduct in the courses they teach. Students found guilty of academic misconduct in any portion of the academic work face penalties that range from the lowering of their course grade to awarding a grade of F for the entire course.