

Extended Syllabus (2019 Summer)

Course Title	Calculus I
Class Time	Mon, Tue, Wed, Thu

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I. Course Overview

1. Description						
Calculus I is mainly for students of the Colleges of Sciences and Engineering. We study on limits, differentiation, integration ,differential equations and parametric equations.						
2. Prerequisites						
High school mathematics						
3. Course Format (%)						
Lecture	Discussion	Experiment	Field study	Presentations	Other	
90 %	10 %	%	%	%	%	
4. Evaluation (%)						
Midterm exam	Final exam	Quizzes	Presentations	Projects	Assignments	Participation
40 %	40 %	10 %	%	%	%	10 %
5. Essential Competencies for the Goals and Objectives of the Liberal Arts Education Curriculum						
Goals	Objectives					Che ck
Fostering human resources with creative intelligence	To reinforce the basic fundamental strategies for academic research					√
	To foster leadership and creativity in the next generation of leaders					
Fostering human resources with the will to serve	To enhance attentiveness to isolated members of the community and to create a conscientiousness of social justice					
	To cultivate responsible citizenship which embraces diversity					√
Fostering human resources with	To establish an integrated understanding about ourselves and our neighbors, other human beings and societies, and the world we live in.					

integrated spirituality	To strive for a life of combined intelligence and action while pursuing the value of love, for which human beings are called.	✓
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II. Course Objectives

Knowledge: In order to understand more about "Calculus", students are required to learn why all the techniques of the high-school calculus are possible, and also learn some basic concepts of mathematics which are necessary in studying other areas of Natural Sciences and Engineering.

Skill: In the course, students have to learn how to prove some important Propositions. Sometimes students are asked to memorize the way of proving Propositions.

Attitude: The best way of obtaining mathematical knowledge and skill is to repeat what they have learned, and to read the textbook and solve the problems by themselves.

III. Course Format

The course will consist of mainly lectures. During the lectures, students can ask any questions concerning the course.

IV. Course Requirements and Grading Criteria

The assignments will be given. In stending of collecting and correcting the assignments, I will check them via quizzes. Besides quizzes, there will be one mid-term examination and final examination. Students must realize that their grade will largely be based on demonstrated competence on quizzes and examinations.

V. Course Policies

(This section is currently blank.)

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VI. Materials and References

<p>Stewart, Calculus, Early Transcendentals, 8th edition Metric version</p>

VII. Course Schedule (* Subject to change)

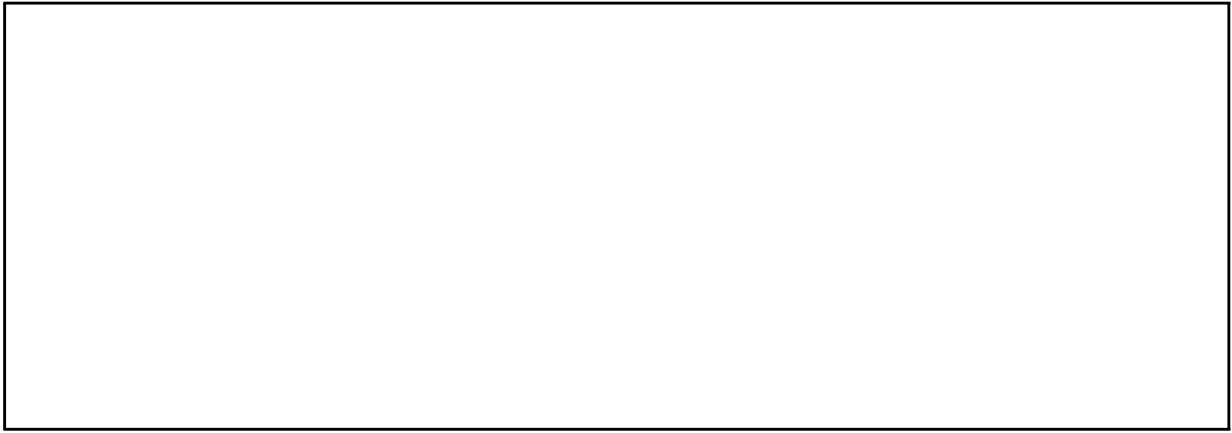
Class 1	Learning Objectives	Real Numbers (Completeness Axiom), Limits (precise definition)
	Topics	Real numbers and limits
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 2	Learning Objectives	Derivatives
	Topics	Derivatives
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter

Class 3	Learning Objectives	Linear Approximation and Differential, The Mean Value Theorem
	Topics	Differential and the Mean Value Theorem
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 4	Learning Objectives	Newton Method, Anti-derivative
	Topics	Anti-derivative
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 5	Learning Objectives	The Fundamental Theorem of Calculus
	Topics	The Fundamental Theorem of Calculus
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 6	Learning Objectives	Applications of Integration
	Topics	Area, Volume
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter

Class 7	Learning Objectives	Mid-Term
	Topics	
	Class Work	
	Materials	
	Assignments	
Class 8	Learning Objectives	Average Value of a function and Inverse Function
	Topics	Average Value of a function and Inverse Function
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 9	Learning Objectives	Logarithmic and Exponential Functions
	Topics	General logarithmic and exponential function, Inverse trigonometric functions
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 10	Learning Objectives	L'Hopital Rule, Techniques of Integration
	Topics	L'Hopital Rule, Techniques of Integration
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter

Class 11	Learning Objectives	Approximate Integration, Improper Integrals
	Topics	Improper Integrals
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 12	Learning Objectives	Area of a surface of revolution, sequences and series
	Topics	Area of a surface of revolution, sequences and series
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 13	Learning Objectives	The comparison test, Alternating Series
	Topics	The comparison test, Alternating Series
	Class Work	Lecture
	Materials	Chapter
	Assignments	Reading assignment: Chapter
Class 15	Learning Objectives	Final
	Topics	
	Class Work	
	Materials	
	Assignments	

VIII. Special Accommodations



IX. Aid for the Challenged Students

Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your education opportunity.