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JINAN UNIVERSITY

Calculus II

Lecturer: Sonja Sandberg

Time: Monday through Friday (July 2, 2018 - August 3, 2018)

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

Contact hours: 60 (50 minutes each)

Credits: 4

Location: School of Tourism

Office: School of Tourism 210

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Content

This course is the second part of a traditional two semester long sequence with a focus on integration. It will cover single variable integral calculus and its applications.

Required Textbook

“Calculus: Early Transcendentals”, 10th edition by Anton, Bivens and David.

Coverage: Chapters 6 – 10, Select Sections

Course Description

Chapter	Sections	Topic
Chapter 6	6.1 – 6.6	Applications of the Definite Integral
Chapter 7	7.1 – 7.8	Principals of Integral Evaluation
Chapter 8	8.1 – 8.4	Modelling with Differential Equations
Chapter 9	9.1 – 9.10	Infinite Series
Chapter 10	10.1 – 10.3	Parametric and Polar Curves; Conic Sections

Course Hours

The course has 25 sessions in total. Each class session is 120 minutes in length. The course meets from Monday to Friday.

Prerequisites:

We assume students are familiar with the standard content of a calculus I course for scientists and engineers. This includes the study of limits, derivatives, optimization of functions of a single variable, using derivatives to sketch graphs, ant derivatives and the method of substitution, definite integrals and Riemann sums, and the fundamental theorem of calculus. Moreover, they should have studied this material in the context of algebraic, exponential, logarithmic, and trigonometric functions.

Calculators: No calculators may be used on tests. Cell phones must be turned off and put away during tests.

Assignments and Graded Work:

Homework: There will be regular homework assignments. Students are encouraged to work together on the homework problems, but the homework will not be graded. However it is very important to do all the homework

Attendance and in-class work: Students are expected to be in class every day for the full class period. Material will be covered very quickly; it will be difficult to catch up, should one fall behind. We will spend some time in class working on problems. Some of this work may be presented or turned in.

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

Grading Policy

Homework, Attendance and In-class work	15%
Midterm exams	60% (15% each)
<u>Final Exam</u>	<u>25%</u>
Total	100%

Make-Ups:

There will be no make-ups. However the lowest test score will be replaced by the final exam score.

Grading Scale

The instructor will use the grading system as applied by JNU:

Definition	Letter Grade	Score
Excellent	A	90-100
Good	B	80-89
Satisfactory	C	70-79

Poor	D	60-69
Failed	E	Below 60

Approximate Day-to-Day Schedule: This syllabus is subject to change.

	<u>Topics</u>	<u>Textbook Sections</u>
Week 1	Area Between Two Curves	section 6.1
	Volumes by Slicing, Disks and Washers	section 6.2
	Volumes by Cylindrical Shells	section 6.3
	Length of a Plane Curve	section 6.4
	Area of a Surface of Revolution	section 6.5
	Work	section 6.6
	Moments, Centers of Gravity, Centroids	section 6.7
	Fluid Pressure and Force	section 6.8
	Overview of Integration Methods	section 7.1
		Exam 1
Week 2	Integration by Parts	section 7.2
	Integrating Trig Function	section 7.3
	Trig Substitutions	section 7.4
	Partial Fractions	section 7.5
	Tables of Integrals	section 7.6
	Numerical Integration	section 7.7
	Improper Integrals	section 7.8
	Modeling With Differential Equations	section 8.1
		Exam 2
Week 3	Separation of Variables	section 8.2
	Slope Fields; Euler's Method	section 8.3
	First Order Differential Equations	section 8.4
	Sequences	section 9.1
	Monotone Sequences	section 9.2
	Infinite Series	section 9.3
	Convergence Tests	section 9.4
	Comparison, Ration and Root Tests	section 9.5
		Exam 3
Week 4	Alternating Series Convergence	section 9.6
	Absolute and Conditional Convergence	section 9.6
	Maclaurin and Taylor Polynomials	section 9.7

Maclaurin and Taylor Series, Power Series	section 9.8
Convergence of Taylor Series	section 9.9
Differentiating and Integrating Power Series	section 9.10
	Exam 4

Week 5

Parametric Equations	section 10.1
Polar Coordinates	section 10.2
More Polar Coordinates	section 10.3
Review	

Final Exam

Academic Honesty

Jinan University defines academic misconduct as any act by a student that misrepresents the students' 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 substantially similar papers, to meet the requirements of more than one course without the approval and consent of the instructors concerned; sabotaging another's work within these general definitions, however, Instructors 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 ranging from lowering of their course grade to awarding a grade of E for the entire course.