



Prince Sultan University
Deanship of Educational Services
Department of General Sciences
Academic Year 2017-2018- Term 171

INSTITUTIONAL COURSE SYLLABUS TEMPLATE

Course Code: Math 113	Course Title: Calculus 2
Course Instructor: Prof. Dr. Wasfi Shatanawi	Email: wshatanawi@psu.edu.sa
Credit Hours: 3	Lectures: 8-8:50 Sunday, Monday, Tuesday, Wednesday
Office Hours: 9-10 on Sunday, Monday, Tuesday, Wednesday	9
Office :	

Mission Statement:

The Department of General Sciences is committed to offering a broad high quality education that will lay a durable educational foundation to meet the specialized professional development requirements in PSU degree programs. The department supports the development of student's skills that enables them to perceive patterns in complexity, render reasoned judgments, and seek the highest level of intellectual achievement and personal growth. We also encourage the students to develop personal qualities such as perseverance, initiative, self-confidence and independence.

I. Course Description:

This course introduces the students to various topics such as the concept of anti-derivatives, integrals (definite and indefinite), the fundamental theorem of calculus and applications of definite integrals to find area, volume, arc's length and surface area. Furthermore, the course continues in covering the concepts of sequences, infinite series, and Power series.

II. Course Learning Outcomes:

Skills	Course Learning Outcomes	Measured by
Knowledge	NA	
Cognitive Skills	<ol style="list-style-type: none"> 1. Evaluate the integration of basic functions such as polynomials, exponential function, logarithmic functions, etc. by using the definition of integration, anti-derivative and standard rules. 2. Find the area of plane region, arc length and surface of revolution by using integration techniques. 3. Use the integration methods to find the volume of solid generated by rotating region about vertical axis or horizontal axis. 4. Evaluate the integration of complicated functions by using methods of integration such as substitution, integration by parts, Trigonometric substitutions, partial fractions and trigonometric integrals. 5. Determine the convergence and divergence of sequences and series 	Final, Majors, HWs, Quizzes
Interpersonal Skills & Responsibility	NA	
Communication, Information Technology, Numerical	NA	
Psychomotor (if Applicable)	NA	

III. Course Content or your weekly schedule (Specific course topics to be covered within the semester).

Topics	No. of Weeks	Contact Hours
• Introduction to Integrals (14 Hours).	4	14 hours
• Areas and Volumes (12 Hours).	3	12 hours
• Techniques of Integration (14 Hours).	3	14 hours
• Sequences and Series	5	20 hours

We cover the above topics during this semester as follows:

Week	Date	Sec.	Material
1	September 17 – 21	5.1 5.2	Areas The Definite Integral
2	September 24 – 28	5.2 5.3	The Definite Integral The Fundamental Theorem of Calculus
3	October 01 – 05	5.4 5.5	Indefinite Integrals and the Net Change Theorem The Substitution Rule
4	October 08 – 12	6.1 6.2	Areas Between Curves Volumes
5	October 15 – 19	6.2 6.3	Volumes Volumes by Cylindrical Shells
6	October 22 – 26	6.3 6.5	Volumes by Cylindrical Shells Average Value of a Function
7 Major Exam #1	Oct. 29 – Nov. 01	7.1 7.2	Integration by Parts Trigonometric Integrals
8	November 04 – 08	7.3 7.4	Trigonometric Substitution Integration of Rational Functions by Partial Fractions
9	November 11 – 15	7.5 7.8	Strategy for Integration Improper Integrals
10	November 18 – 22	8.1 8.2	Arc Length Area of a Surface of Revolution
11	November 25 – 29	11.1 11.2	Sequences Series
12	December 02 – 06	11.2 11.3	Series The Integral Test and Estimates of Sums
13 Major Exam #2	December 09 – 13	11.4 11.5	The Comparison Tests Alternating Series
14	December 16 – 20	11.6 11.7	Absolute Convergence and the Ratio and Root Tests Strategy for Testing Series
15	December 23 – 27	11.8	Power Series

IV. Course Components (Indicate the total contact hours within the semester).

Component	Contact Hours
Lecture	3 per week
Tutorial	1 per week
Practical/Field	0

V. Teaching Strategies (Indicate the teaching and student activities to be used to develop the kinds of learning involved in each learning domain. See the Faculty Guidelines for Conditions for Different Domains of Learning on Pg. 6 & 7. Also, research specialized Information about Best Teaching Practices for the particular course/field).

Domain	Strategy
Knowledge	NA
Cognitive Skills	Lectures small group discussion
Interpersonal Skills & Responsibility	NA
Numerical & Communication Skills	NA

VI. Course Requirements (Specify the requirements of the course - reports, examinations, quizzes, projects or recitations. These requirements should be consistent with the Course Specification on file in the particular department)

VII. Student Assessment

A. Assessment Task (Indicate the kind of assessment tasks to be used to measure student learning in each of the learning domain. Example: quiz, oral examination, group work, etc).

Domain	Assessment Task
Cognitive Skills	Major Exams Final Examination Quizzes and Homework

B. Schedule of Assessment:

Assessment	Assessment Task	Week Due	Proportion of Final Assessment
1	Major Exam #1	7	20%
2	Major Exam #2	13	20%
3	4-6 Quizzes	-	10%
4	Attendance, participation and assignments	-	10%
5	Final Exam	-	40%

VIII. Learning Resources

A. Textbook: Calculus: Early Transcendental Functions. 8th edition By Stewart

B. References:

1. Calculus, by Thomas and Finney, 1996, Addison - Wesley publishing Company
2. Calculus, Early Transcendentals by Anton, Bivens and Davis 2010, John Wiley and Sons, Inc

C. Facilities Required - lecture room.

D. Learning Management System – website address, instructions, required participation, etc.

IX. Attendance Policy:

1. Students are required to attend all classes starting from the first day of the semester.
2. Attendance will be taken at the start of the lecture. If a student enters the classroom after 10 minutes, he will be marked absent.
3. No excuses for missing classes(including medical reasons) are accepted.
4. DN Grade will be issued to a student who misses 16 classes. This means he cannot enter any more classes or exams. (1st warning: 6 absences, 2nd warning: 11 absences).
5. In case a student misses a class, he must contact any one of his classmates to get all information and topics covered in classes he missed.
6. From the past experience, **absence** is the biggest reason for failing. So make sure you attend all classes.