



The Hashemite University
Faculty of Science
Course Description

Department : Mathematics		
Year : 2021/2022		Semester : Second
Course Information		
Course Title	<i>Calculus (2)</i>	
Course Number	<i>110101102</i>	
Course Credits	<i>3 Hours</i>	
Course Time& section		
Course Duration	<i>One semester</i>	
Prerequisite(s)	<i>110108101</i>	
Instructor		
Office Location		
Office Hours		
E- mail		
Text Book		
Title	<i>Calculus, Early Transcendentals</i>	
Author	<i>James Steward</i>	
Publisher	<i>Cengage Learning.</i>	
Year	<i>2012</i>	
Edition	<i>7th</i>	
References(s)	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.. 3. Calculus with Analytic Geometry, by Leithold, 1986, Harper and Row publishers.	
Grading plan		
First Exam		25 %
Second Exam		25 %
Final Exam		50 %

Course Objectives
To study some applications of definite integral, methods of evaluating integrals, infinite series, polar coordinates and conic sections.

Teaching and Learning Methods
Solving problems with discussion.

Course Contents		
Topics	Section	Week

<i>Ch7: Techniques of Integration</i>	7.1	1
Integration by Parts	7.2	
Trigonometric Integrals		
Trigonometric Substitutions	7.3	2
Integration of Rational Functions by Partial Fractions	7.4	3
Strategy for Integration	7.5	
Improper Integrals	7.8	4
<i>Ch 8: Further Applications of Integration</i>		5
Arc Length	8.1	
Area of A surface of Revolution	8.2	
<i>Ch10: Parametric Equations and Polar Coordinates</i>		
Curves Defined by Parametric Equations	10.1	
Polar Coordinates	10.3	6
Area and Lengths in Polar Coordinates	10.4	7
<i>Ch11: Infinite Sequences and Series</i>		
Sequences	11.1	8
Series	11.2	9
The Integral Test and Estimates of Sum	11.3	10
The Comparison Test	11.4	
Alternating Series	11.5	11
Absolute Convergence and the Ratio and Root Tests	11.6	12
Strategy for Testing Series	11.7	
Power Series	11.8	13
Representation of Functions as Power Series	11.9	
Taylor and Maclaurin Series	11.10	14
Applications of Taylor Polynomials	11.11	15