The Hashemite University
Faculty of Science
Course Description

Department : Mathematics		
Year : 2021/2022	**Semester : Second**	
Course Information		
Course Title	***Calculus (2)***	
Course Number	***110101102***	
Course Credits	***3 Hours***	
Course Time& section		
Course Duration	***One semester***	
Prerequisite(s)	***110108101***	
Instructor		
Office Location		
Office Hours		
E- mail		
Text Book		
Title	***Calculus, Early Transcendentals***	
Author	***James Steward***	
Publisher	***Cengage Learning.***	
Year	***2012***	
Edition	7^{th}	
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**

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