



Jordan University of Science and Technology
Faculty of Science & Arts
Mathematics Department

MATH101 Calculus (I)

First Semester 2017-2018

Course Catalog

3 Credit Hours. Functions, Limits and continuity and their applications:, chain rule, Implicit differentiation, related rates, increase decrease, concavity. Extrema. Newton's method, Roll's theorem, Mean-Value Theorem, definite and indefinite integrations, fundamental theorem of calculus, Area and volume, inverse functions, Exponential and logarithmic functions with their derivatives. Conic sections.

Text Book

Title	Calculus, Early Transcendental
Author(s)	H. Anton, I.C. Bivens, S. Davis
Edition	9th Edition
Short Name	TextBook
Other Information	John Wiley 2010

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref 1	Calculus One and Several Variables	S.L. Salas, G.J. Etgen, E. Hille	10th Edition	John Wiley and Sons, 2007
Ref 2	Calculus: Early Transcendentals	J. Stewart	6th Edition	Cengage Learning 2008.
Ref 3	Calculus, Single Variable: Early Transcendental Functions	R. Smith, R. Minton	3rd Edition	2007

Instructor

Name	Dr. AHMAD ALBATAINEH
Office Location	-

Office Hours	Sun : 12:30 - 13:30 Mon : 10:00 - 12:00 Tue : 13:30 - 14:30 Wed : 11:00 - 12:00 Thu : 09:30 - 10:30
Email	ahalbatineh@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue, Thu : 08:30 - 09:30 Room: NG54

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Chapter 0: Before Calculus	Sections: 0.1, 0.2, 0.4, 0.5 From TextBook
Weeks 3, 4	Chapter 1: Limits and Continuity	Sections: 1.1, 1.2, 1.3, 1.5, 1.6 From TextBook
Weeks 5, 6	Chapter 2: The Derivative	Sections: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 From TextBook
Weeks 7, 8	Chapter 3: Topics in Differentiation	Sections: 3.1, 3.2, 3.3, 3.6 From TextBook
Weeks 9, 10, 11	Chapter 4: The Derivative in Graphing and Applications	Sections: 4.1, 4.2, 4.3, 4.4, 4.5, 4.8 From TextBook
Weeks 12, 13	Chapter 5: Integration	Sections: 5.1, 5.2, 5.3, 5.5, 5.6, 5.9, 5.10 From TextBook
Weeks 14, 15	Chapter 6: Applications of the Definite Integral	Sections: 6.1, 6.2, 6.3, 6.4, 6.5 From TextBook
Week 16	Final Exam Week	

Mapping of Course Objectives to Program Student Outcomes ¹	Assessment method
Analyze the properties of the functions and sketch their graphs. [1a, 1e]	First Exam
Investigate and compute the limits using main rules and formulas and study the continuity of the functions. [1a, 1e]	First Exam
Know and apply techniques of differentiation, especially the Chain Rule. [1a, 2e]	
Know the derivative in graphing and applications, including first and second derivative test, applied maximum and minimum problems. [1a, 2e]	
Know and apply L'Hôpital's Rule, Rolle's Theorem, Mean-Value Theorem. [1a, 1e]	
Know the indefinite integrals, integration by substitution and apply the definite integrals, the fundamental theorem of Calculus, and principles of definite integral calculation. [1a, 1e]	
Find the area enclosed by two curves, volumes by slicing, and length of a plane curve. [1e]	

Relationship to Program Student Outcomes (Out of 100%)										
a	b	c	d	e	f	g	h	i	j	k
40				60						

Evaluation	
Assessment Tool	Weight
First Exam	30%
Second Exam	30%
Final Exam	40%

Date Printed: 2017-11-28

Calculus, Early Transcendentals, Eighth Edition, is supported by a complete set of ancillaries developed under my direction. Each piece has been designed to enhance student understanding and to facilitate creative instruction. The tables on pages xxi–xxii describe each of these ancillaries. 2. The Fundamental Theorem of Calculus. 3. Some Properties of Integrals. 8 Techniques of Integration. The book includes some exercises and examples from Elementary Calculus: An Approach Using Infinitesimals, by H. Jerome Keisler, available at <http://www.math.wisc.edu/~keisler/calc.html> under a Creative Commons license. In addition, the chapter on differential equations is largely derived from the corresponding chapter in Keisler's book. Calculus: Early Transcendentals 9th edition. James Stewart Publisher: Cengage Learning. eBook. Assign any of these QuickPrep modules early in the course or whenever the review is most needed. Active Examples (AE) guide students through the process needed to master a concept. Use the Textbook Edition Upgrade Tool to automatically update all of your assignments from the previous edition to corresponding questions in this textbook.