



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

MATH101 Calculus I

Summer Semester 2019-2020

**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**

<b>Title</b>	Calculus, Early Transcendental
<b>Author(s)</b>	H. Anton, I.C. Bivens, S. Davis
<b>Edition</b>	9th Edition
<b>Short Name</b>	TextBook
<b>Other Information</b>	

**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	
Ref 2	Calculus: Early Transcendentals	J. Stewart	6th Edition	
Ref 3	Calculus, Single Variable: Early Transcendental Functions	R. Smith, R. Minton	3rd Edition	

**Instructor**

Name	<b>Dr. Malik Bataineh</b>
Office Location	-

Office Hours	Sun : 12:30 - 13:30 Mon : 12:30 - 13:30 Tue : 12:30 - 14:30 Wed : 12:30 - 14:30
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Instructor	
Name	<b>Prof. Khaled Bataineh</b>
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Office Hours	Sun : 14:30 - 16:00 Mon : 14:30 - 16:00 Tue : 15:00 - 16:00 Wed : 15:00 - 16:00 Thu : 15:00 - 16:00
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Class Schedule & Room
<p>Section 1: Lecture Time: Sun, Mon, Tue, Wed : 08:30 - 10:00 Room: منصة الكترونية</p> <p>Section 2: Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30 Room: منصة الكترونية</p> <p>Section 3: Lecture Time: Sun, Mon, Tue, Wed : 11:30 - 13:00 Room: منصة الكترونية</p> <p>Section 4: Lecture Time: Sun, Mon, Tue, Wed : 13:00 - 14:30 Room: منصة الكترونية</p>

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Chapter 0: Before Calculus	<b>Sections: 0.1, 0.2, 0.4, 0.5</b> From <b>TextBook</b>
Week 2	Chapter 1: Limits and Continuity	<b>Sections: 1.1, 1.2, 1.3, 1.5, 1.6</b> From <b>TextBook</b>
Week 3	Chapter 2: The Derivative	<b>Sections: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6</b> From <b>TextBook</b>
Week 4	Chapter 3: Topics in Differentiation	<b>Sections: 3.1, 3.2, 3.3, 3.6</b> From <b>TextBook</b>
Week 5	Chapter 4: The Derivative in Graphing and Applications	<b>Sections: 4.1, 4.2, 4.3, 4.4, 4.5, 4.8</b> From <b>TextBook</b>

Week 6	Chapter 5: Integration	<b>Sections: 5.1, 5.2, 5.3, 5.5, 5.6, 5.9, 5.10</b> From <b>TextBook</b>
Week 7	Chapter 6: Applications of the Definite Integral	<b>Sections: 6.1, 6.2, 6.3, 6.4, 6.5</b> From <b>TextBook</b>
Week 8	Final Exam Week	

<b>Mapping of Course Outcomes to Program Student Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Analyze the properties of the functions and sketch their graphs. [1SLO1]	8%	
Investigate and compute the limits using main rules and formulas and study the continuity of the functions. [1SLO1]	22%	
Know and apply techniques of differentiation, especially the Chain Rule. [4SLO1, 1SLO2]	15%	
Know the derivative in graphing and applications, including first and second derivative test, applied maximum and minimum problems. [1SLO1]	15%	
Know and apply Loiphital Rule, Rolle's Theorem, Mean-Value Theorem. [4SLO1, 1SLO4]	10%	
Know the indefinite integrals, integration by substitution and apply the definite integrals, the fundamental theorem of Calculus, and principles of definite integral calculation. [1SLO1]	20%	
Find the area enclosed by two curves, volumes by slicing, and length of a plane curve. [1SLO1]	10%	

<b>Relationship to Program Student Outcomes (Out of 100%)</b>					
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
95	3		2		

<b>Evaluation</b>	
<b>Assessment Tool</b>	<b>Weight</b>
First Exam	30%
Second Exam	20%
Final Exam	50%

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