



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

MATH102 Calculus 2

Summer Semester 2019-2020

**Course Catalog**

3 Credit Hours. Inverse trigonometric and hyperbolic functions. Techniques of integration, by parts, trigonometric integrals, trigonometric substitutions, partial fractions, quadratic expressions, general substitutions. Numerical integration (Simpson's rule). Improper integrals. Infinite series, convergence and divergence, convergence tests, Maclaurin and Taylor series. Polar coordinates: definition, arc length, area, conic sections.

**Text Book**

<b>Title</b>	Calculus Early Transcendentals
<b>Author(s)</b>	H. Anton, I.C. Bivens, S. Davis
<b>Edition</b>	10th Edition
<b>Short Name</b>	TextBook
<b>Other Information</b>	

**Instructor**

<b>Name</b>	<b>Miss Raofe Al Saidi</b>
<b>Office Location</b>	PH2 L-2
<b>Office Hours</b>	Sun : 08:00 - 08:30 Mon : 13:00 - 15:00 Tue : 13:00 - 14:00 Wed : 08:00 - 08:30 Thu : 08:30 - 10:30
<b>Email</b>	raofe@just.edu.jo

**Class Schedule & Room**

Section 1:  
Lecture Time: Sun, Mon, Tue, Wed : 08:30 - 10:00  
Room: منصة الكترونية

Section 2:  
Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30  
Room: منصة الكترونية

Section 3:  
Lecture Time: Sun, Mon, Tue, Wed : 11:30 - 13:00  
Room: منصة الكترونية

### Prerequisites

Line Number	Course Name	Prerequisite Type
901010	MATH101 Calculus I	Prerequisite / Pass

### Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Integration by Parts	<b>Section 7.2</b> From <b>TextBook</b>
Week 2	Integrating Trigonometric Functions	<b>Section 7.3</b> From <b>TextBook</b>
Weeks 3, 4	Trigonometric Substitutions , Integrating Rational Functions by Partial Fractions, Improper Integrals	<b>Sections 7.4, 7.5, 7.8</b> From <b>TextBook</b>
Week 5	Sequences, Monotone Sequences	<b>Sections 9.1, 9.2</b> From <b>TextBook</b>
Week 6	Infinite Series, Convergence Tests	<b>Sections 9.3, 9.4</b> From <b>TextBook</b>
Week 7	The Comparison, Ratio, and Root Tests	<b>Section 9.5</b> From <b>TextBook</b>
Week 8	Alternating Series; Absolute and Conditional Convergence	<b>Section 9.6</b> From <b>TextBook</b>
Weeks 9, 10	Maclaurin and Taylor Polynomials, Maclaurin and Taylor Series; Power Series, Differentiating and Integrating Power Series	<b>Sections 9.7, 9.8, 9.10</b> From <b>TextBook</b>
Week 11	Parametric Equations; Tangent Lines and Arc Length , Coordinates	<b>Sections 10.1, 10.2</b> From <b>TextBook</b>
Week 12	Tangent Lines, Arc Length, and Area for Polar Curves	<b>Section 10.3</b> From <b>TextBook</b>
Week 13	Rectangular Coordinated in 3-Space; Spheres; Cylindrical Surfaces	<b>Section 11.1</b> From <b>TextBook</b>

Week 14	Vectors, Dot Product; Projections, Cross Product.	<b>Sections 11.2, 11.3, 11.4</b> From <b>TextBook</b>
Week 15	Review	
Week 16	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>
Integrate various kinds of functions by using some integration techniques such as parts, partial fraction, and trigonometric substitution [1SLO1]	24%	First Exam of Math 102 - Summer Semester 2019-2020
Learn about improper integrals and infinite sequences [1SLO1]	10%	Second Exam of Math 102 -Summer Semester 2019-2020
Learn about the topic of infinite series, their convergence tests, types of convergence and the concept of the sum of a convergent series. Also, analyze the power series to determine its radius and interval of convergence. [1SLO1]	24%	Final Exam of Math 102 -Summer Semester 2019-2020
Learn about the Taylor series, Maclaurin series and parametric equation [1SLO1]	14%	
Learn about the Polar Curves, vectors, dot products and cross products with some applications. [1SLO1]	28%	

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

<b>Evaluation</b>	
<b>Assessment Tool</b>	<b>Weight</b>
First Exam of Math 102 - Summer Semester 2019-2020	25%
Second Exam of Math 102 -Summer Semester 2019-2020	25%
Final Exam of Math 102 -Summer Semester 2019-2020	50%

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