Jordan University of Science and Technology

Faculty of Science & Arts

Mathematics Department

HSS102MATH Calculus 2

Summer Semester 2023-2024

Course Catalog
3 Credit Hours. The first part of this course (Chapter 7) is to study several techniques of integration that are commonly used in calculus such as integration by parts, partial fractions, and trigonometric substitutions. Also, we study the topic of improper integrals. The second part (Chapter 9) studies infinite sequences, their limits and some results concerning convergence and divergence of sequences. Also, this part studies infinite series and their convergence using the concept of limits. We study various convergence tests such as the integral test, p-test, the divergence test, comparison test, limit comparison test, root test, ratio test, and the alternating series test. Power series and Taylor series of functions are studied at the end of this chapter. The Third part (Chapter 10) is devoted to studying the parametric equations and the polar coordinate system. We learn about graphing functions in the polar coordinate system, as well as, studying derivatives, slopes, areas and arc length of functions. Finally, in the fourth part (Chapters 11) we introduce the topic of vectors in 2-dim and 3-dim real spaces including the dot product of vectors.
Teaching Method: On Campus

Text Book	
Title	Calculus Early Transcendentals" 10th Ed, 2010.
Author(s)	Howard Anton, Irl C. Bivens, & Stephen Davis.
Edition	10th Edition
Short Name	Text
Other Information	John Wiley & Sons.

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #1	Calculus; Early Transcendental Functions	R. Smith & R. Minton	3rd Edition	
Ref #2	Calculus, One and Several Variables	Salas and Hille's	7th Edition	
Ref #3	Calculus	Thomas and Finney	9th Edition	

Instructor

Name	**Miss Shatha Alghueiri**
Office Location	PH4 L-1
Office Hours	Sun : 11:30 - 13:00 Mon : 11:30 - 13:00 Tue : 11:30 - 13:00 Wed : 11:30 - 13:00
Email	soalghueiri@just.edu.jo

Instructor	
Name	**Mr. Issam Abu-Irwaq**
Office Location	-
Office Hours	Sun : 10:00 - 11:30 Mon : 10:00 - 11:30 Tue : 10:00 - 11:30 Wed : 10:00 - 11:30
Email	imabuirwaq@just.edu.jo

Instructor	
Name	**Aya Al Twaiq**
Office Location	-
Office Hours	
Email	aaaltwaiq9@just.edu.jo

Instructor	
Name	**Prof. Mahmoud Alrawashdeh**
Office Location	-
Office Hours	Sun : 13:00 - 14:30 Mon : 13:00 - 14:30 Tue : 13:00 - 14:30 Wed : 13:00 - 14:30
Email	msalrawashdeh@just.edu.jo

Instructor	
Name	**Ghayda' Al Quraan**
Office Location	-
Office Hours	
Email	gnalquraan@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Sun, Mon, Tue, Wed : 08:30 - 10:00
Room: NG54

Section 2:
Lecture Time: Sun, Mon, Tue, Wed : 08:30 - 10:00
Room: NG41

Section 3:
Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30
Room: NG55

Section 4:
Lecture Time: Sun, Mon, Tue, Wed : 11:30 - 13:00
Room: NF45

Section 5:
Lecture Time: Sun, Mon, Tue, Wed : 13:00 - 14:30
Room: SF11

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3	Chapter 7: Techniques of Integration	From **Text**
Weeks 4, 5, 6	Chapter 9: Infinite Sequences and Series	From **Text**
Week 7	Chapter 10: Parametric Equations and Polar Coordinates	From **Text**
Week 8	Chapter 11: Vectors and the Geometry of Space	From **Text**

Mapping of Course Outcomes to Program Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
Integrate various kinds of functions by using some integration techniques such as parts, partial fraction, and trigonometric substitution.	20%	الامتحان الاول, الامتحان النهائي
Learn the intuitive approach of the improper integrals and the techniques to evaluate such integrals.	6%	الامتحان الاول
Learn about the infinite sequences and their convergence.	8%	الامتحان الاول, الامتحان النهائي
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. Furthermore, learn how to represent some functions as power series.	22%	الامتحان الثاني, الامتحان النهائي

Learn about the Taylor and Maclaurin series and some of their applications.	14%	الامتحان الثاني, الامتحان النهائي
Recognize the graph of a parametric equation and analyze families of parametric curves. Describe the motion in the plane or in space of an object using parametric representation. Represent curves parametrically, implicitly and explicitly. Be able to convert from one form of representation to another.	6%	الامتحان الثاني
To demonstrate the ability to plot polar coordinates, to switch from polar coordinates to Cartesian coordinates	14%	الامتحان النهائي
Learn the topic of vectors and their dot and cross products with the geometric interpretation.	10%	الامتحان النهائي

Relationship to Program Student Outcomes (Out of 100%)					
SLO1(K1S1)	SLO2(S23C1)	SLO3(C24)	SLO4(C3)	SLO5(C4)	SLO6(S2C3)

Evaluation	
Assessment Tool	**Weight**
الامتحان الاول	30%
الامتحان الثاني	30%
الامتحان النهائي	40%

Date Printed: 2024-09-15