The University of Jordan

الجامعة الاردنية

	Form Number	EXC-01-02-02A
Form: **Course Syllabus**	Issue Number and Date	2/3/24/2022/2963 05/12/2022
	Number and Date of Revision or Modification	
	Deans Council Approval Decision Number	2/3/24/2023
	The Date of the Deans Council Approval Decision	23/01/2023
	Number of Pages	08

1.	Course Title	Calculus 1
2.	Course Number	0319101
3.	Credit Hours (Theory, Practical)	3+0
	Contact Hours (Theory, Practical)	3
4.	Prerequisites/ Corequisites	None
5.	Program Title	B.Sc.
6.	Program Code	
7.	School/ Center	Science
8.	Department	Mathematics
9.	Course Level	Department Requirements
10.	Year of Study and Semester (s)	First year/ All semesters
11.	Other Department(s) Involved in Teaching the Course	
12.	Main Learning Language	English
13.	Learning Types	■Face to face learning □Blended □Fully online
14.	Online Platforms(s)	□ Moodle ■Microsoft Teams
15.	Issuing Date	22-10-2024
16.	Revision Date	22-10-2024

17. Course Coordinator:

Name: Khalid Bdarneh   Contact hours:(S,T,W) 10:30-11:30
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18. Other Instructors:

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Name: Dr. Majd Mhailan

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Name: Dr. Mona Sakkijha

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19. Course Description:

Functions: domain, operations on functions, graphs of functions; trigonometric functions; limits: meaning of a limit, computational techniques, limits at infinity, infinite limits; continuity; limits and continuity of trigonometric functions; the derivative: techniques of differentiation, derivatives of trigonometric functions; the chain rule; implicit differentiation; differentials; Roll's Theorem; the mean value theorem; the extended mean value theorem; L'Hopital's rule; increasing and decreasing functions; concavity; maximum and minimum values of a function; graphs of functions including rational functions (asymptotes) and functions with vertical tangents (cusps); antiderivatives; the indefinite integral; the definite integral; the fundamental theorem of calculus ; the area under a curve; the area between two curves; transcendental functions: inverse functions, logarithmic and exponential functions; derivatives and integrals; limits (the indeterminate forms); hyperbolic functions and their inverses; inverse trigonometric functions.

20. Program Student Outcomes (SO's):

(To be used in designing the matrix linking the intended learning outcomes of the course with the intended

learning outcomes of the program)

1. Identify, formulate, and solve broadly-defined technical or scientific problems by applying knowledge of Mathematics and Science and/or technical topics to areas relevant to the discipline.

5. Reflect the impact of technical and/or scientific solutions in economic, environmental, and societal

contexts.

8. Utilize techniques, skills, and modern scientific tools such as mathematical packages,

statistical software, graphing calculators, and online resources necessary for professional practice.

21. Course Intended Learning Outcomes (CLO's):

(Upon completion of the course, the student will be able to achieve the following intended learning

outcomes)

1. Know the concept of a function, domain, range, basic properties of essential functions, graphs, and formulas of new functions from old.

2. Calculate limits for various types of functions.

3. Determine whether a given function is continuous at a certain point or on a given interval.

4. Differentiate and integrate various types of functions.

5. Apply some famous Theorems in calculus such as: Intermediate Value Theorem, Mean Value Theorem, and Fundamental Theorem of Calculus.

Course CLOs	The learning levels to be achieved					
	Remembering	**Understanding**	**Applying**	**Analysing**	**evaluating**	**Creating**
1	■	■				
2		■	■	■	■	
3				■		
4		■	■		■	
5		■	■	■		

22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:

Program SO's / Course CLO's	SO (1)	SO (2)	SO (3)	SO (4)	SO (5)	SO (6)	SO (7)	SO (8)
CLO (1)	■				■			■
CLO (2)	■				■			■
CLO (3)	■				■			■
CLO (4)	■				■			■
CLO (5)	■				■			■

23. Topic Outline and Schedule:

Week	Lecture	Topic	CLO/s Linked to the Topic	Learning Types Face to Face (FF) Blended (BL) Fully Online (FO)	Platform Used	Synchronous (S) Asynchronous (A)	Evaluation Methods	Learning Resources
1	1.1	Welcoming students. Syllabus. Introducing the course, how to study and practice, and the assessment methods. Section 1.1.	1	FF	Teams	S		Text Book
	1.2	Section 1-1 continuation.	1	FF	Teams	S		Text Book
	1.3	Section 1-1 continuation.	1	FF	Teams	S		Text Book
2	2.1	Section 1.2.	1	FF	Teams	S		Text Book
	2.2	Section 1.2 continuation	1	FF	Teams	S		Text Book
	2.3	Section 1.3.	1	FF	Teams	S		Text Book
3	3.1	Section 1.3 continuation	1	FF	Teams	S		Text Book
	3.2	Section 1.4.	1	FF	Teams	S		Text Book
	3.3	Section 1.4 continuation	1	FF	Teams	S		Text Book
4	4.1	Section 1.5.	1	FF	Teams	S		Text Book
	4.2	Section 1.5 continuation.	1	FF	Teams	S		Text Book
	4.3	Section 1.5 continuation.	1	FF	Teams	S		Text Book
5	5.1	Section 1.5 continuation	1	FF	Teams	S		Text Book
	5.2	Section 2.2.	2	FF	Teams	S		Text Book
	5.3	Section 2.3.	2	FF	Teams	S		Text Book

6	6.1	Section 2.3 continuation.	2	FF	Teams	S		Text Book
	6.2	Section 2.5.	3	FF	Teams	S		Text Book
	6.3	Section 2.5 continuation	3	FF	Teams	S		Text Book
7	7.1	Section 2.6.	2,3	FF	Teams	S		Text Book
	7.2	Section 2.7	2,3	FF	Teams	S		Text Book
	7.3	Section 2.8	2,3	FF	Teams	S		Text Book
8	8.1	Sections 3.1-3.3.	4,5	FF	Teams	S		Text Book
	8.2	Midterm exam	1,2,3	FF	Teams	S		Text Book
	8.3	Section 3.4.	4,5	FF	Teams	S		Text Book
9	9.1	Section 3.5	4,5	FF	Teams	S		Text Book
	9.2	Section 3.6.	4,5	FF	Teams	S		Text Book
	9.3	Section 3.6 continuation	4,5	FF	Teams	S		Text Book
10	10.1	Section 3.10.	4,5	FF	Teams	S		Text Book
	10.2	Section 3.11.	4,5	FF	Teams	S		Text Book
	10.3	Section 3.11 continuation.	4,5	FF	Teams	S		Text Book
11	11.1	Section 4.1.	4,5	FF	Teams	S		Text Book
	11.2	Second exam	3,4	FF	Teams	S		Text Book
	11.3	Section 4.2.	4,5	FF	Teams	S		Text Book
12	12.1	Section 4.3.	4,5	FF	Teams	S		Text Book
	12.2	Section 4.4.	4,5	FF	Teams	S		Text Book
	12.3	Section 4.5.	4,5	FF	Teams	S		Text Book
13	13.1	Sections 4.9.	4,5	FF	Teams	S		Text Book

	13.2	Sections 5.1	4,5	FF	Teams	S		Text Book
	13.3	Section 5.2	4,5	FF	Teams	S		Text Book
14	14.1	Section 5.3	4,5	FF	Teams	S		Text Book
	14.2	Section 5.4.	4,5	FF	Teams	S		Text Book
	14.3	Section 5.5.	4,5	FF	Teams	S		Text Book
15	15.1	Course revision.	1,2,3,4,5	FF	Teams	S		Text Book
	15.2	Course revision.	1,2,3,4,5	FF	Teams	S		Text Book
	15.3	Course revision.	1,2,3,4,5	FF	Teams	S		Text Book
16							Final Exam	

24. Evaluation Methods:

Opportunities to demonstrate achievement of the CLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	CLO/s Linked to the Evaluation activity	Period (Week)	Platform
Midterm exam	30		1, 2,3	8	Exam builder
Second exam	20		3,4	11	Exam builder
Final	50		1, 2,3,4,5	Final exams period	Exam builder

25. Course Requirements:

(e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform…etc.):

Microsoft Teams account.

26. Course Policies:

According to university regulations, attendance is mandatory. If a student is unable to attend a class, then he/she should contact the instructor. If a student misses more than 10% of the classes without excuse, then he/she will be assigned a falling grade in class. In cases of extreme emergency or serious illness, the student will be allowed to make up the missed exams. Times and dates for makeup exams will be assigned later. There are severe sanctions for cheating, plagiarizing and any other form of dishonesty. The university regulations on cheating will be applied to any student who cheats in exams or on any homework.

27. References:

A. Required book(s), assigned reading and audio-visuals:James Stewart (2016) Calculus (Early Transcendentals) , 8th Edition (or later), Thomson, Metric international version, Canada.

B. Recommended books, materials, and media:

(1) G. Thomas (2005) Calculus, 11th edition, Addison Wesley (PersonEducation).
(2) R. Smith and R. Minton (2007) Calculus, 3 rd edition, McGrawHill.
(3) Howard Anton, IrlBivens and Stephen Davis (2005) Calculus, 8th edition, John Wiley and sons Inc., New York

28. Additional information:

	Signature:	Date:
Name of the Instructor or the Course Coordinator: **Dr.Khalid Badarneh**	Signature: ……………………………	Date: 22-10-2024
Name of the Head of Quality Assurance Committee/ Department: **Prof. Manal Ghanem**	Signature: ……………………………	Date: ………………
Name of the Head of Department: **Prof. Baha Alzalg**.	Signature: ……………………………	Date: ………………
Name of the Head of Quality Assurance Committee/ School of Science: **Prof. Emad A. Abuosba**	Signature: ……………………………	Date: ………………
Name of the Dean or the Director: **Prof. Mahmoud I. Jaghoub**	Signature: ……………………………	Date: ………………