The University of Jordan

الجامعة الاردنية

Form: Course Syllabus	Form Number	EXC-01-02-02A
	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	09

1.	Course Title	Calculus II
2.	Course Number	0301102
3.	Credit Hours(Theory, Practical)	3
	Contact Hours (Theory, Practical)	3
4.	Prerequisites/Corequisites	0301101
5.	Program Title	B.Sc. Mathematics
6.	Program Code	
7.	School/ Center	Science
8.	Department	Mathematics
9.	Course Level	Compulsory
10.	Year of Study and Semester (s)	All semisters
11.	Other Department(s) Involved in Teaching the Course	None
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	10 October 2024
16.	Revision Date	

17. Course Coordinator:

Name: Dr. Mona Sakkijha	Contact hours: (Su, Tue, Thu) 10.30-11.30
Office number:	Phone number:
Email: m.sakkijha@ju.edu.jo	

18. Other Instructors:

Name : Prof, Abdullah Talafha

Office number:

Phone number:

Email:

Contact hours:
Name,: Prof. Manal alghanim

Office number:

Phone number:

Email:

Contact hours:

Name: Mrs Asmaa Alhabees

Office number:

Phone number:

Email:

Contact hours:

Name: Mr. Gaith Awwad

Office number:

Phone number:

Email:

Contact hours:

19. Course Description:

As stated in the approved study plan.

Integration by parts; trigonometric integrals; trigonometric substitutions; integration of rational functions by partial fractions; strategy of integrations; improper integrals; areas between two curves; volumes; volumes by cylindrical shells; arc length; area of surface of revolution; sequences; series; integral test; the comparison tests; alternating series; absolute convergence and the ratio and root tests; strategy for testing series; power series; representations of functions as power series; taylor and maclaurine series; polar coordinates; area in polar coordinates

20.ProgramStudent 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. Formulate or design a system, process, procedure or program to meet desired needs.
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. Choose the suitable way in finding the value of the integral.
2. Find the area and the volume.
3. Find the arc length and surface area of revolution.
4. Find the suitable test for the series.
5. Sketch the polar curves and to find the area in polar.

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/sLinked to the Topic	Learning Types (FF/BL/ FO)	Platform Used	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
	1.1	Integration by parts	1	FF	Moodle		Midterm exam	Text book
1	1.2	Trigonometric Integrals	1	FF	Moodle		Mid	Text book
	1.3	Trigonometric Integrals	1	FF	Moodle		Mid	Text book
2	2.1	Trigonometric Substitution	1	FF	Moodle		Mid	Text book
	2.2	Trigonometric Substitution	1	FF	Moodle		Mid	Text book
	2.3	Trigonometric Substitution	1	FF	Moodle		Mid	Text book

3	3.1	Integration of Rational function by partial fraction	1	FF	Moodle		Mid	Text book
	3.2	Integration of Rational function by partial fraction	1	FF	Moodle		Mid	Text book
	3.3	Integration of Rational function by partial fraction	1	FF	Moodle		Mid	Text book
4	4.1	Strategy of integration Exercices:3,6,10,11,17,19,22,29	1	FF	Moodle		Mid	Text book
	4.2	Improper integrals Exercices:1,6,8,13,14,19,29	1	FF	Moodle		Mid	Text book
	4.3	Improper integrals Exercices:1,6,8,13,14,19,29	1	FF	Moodle		Mid	Text book
5	5.1	Area between curves	2	FF	Moodle		Mid	Text Book
	5.2	Volumes	2	FF	Moodle		Mid	Text Book
	5.3	Volumes	2	FF	Moodle		Mid	Text Book
6	6.1	Volumes by Cylindrical shells Exercice:1,2,3,5,9,10,13	2	FF	Moodle		Mid	Text Book
	6.2	Volumes by Cylindrical shells Exercice:1,2,3,5,9,10,13	2	FF	Moodle		Mid	Text Book
	6.3	Volumes by Cylindrical shells Exercice:1,2,3,5,9,10,13	2	FF	Moodle		Mid	Text Book
7	7.1	Arc Length	3	FF	Moodle		Second Exam	Text Book
	7.2	Area of surface of revolution	3	FF	Moodle		Sec	Text Book
	7.3	Area of surface of revolution	3	FF	Moodle		Sec	Text Book
8	8.1	Sequences	4	FF	Moodle		Sec	Text Book

	8.2	Series	4	FF	Moodle		Sec	Text Book
	8.3	Series	4	FF	Moodle		Sec	Text Book
9	9.1	Integral test	4	FF	Moodle		Sec	Text Book
	9.2	The comparison tests	4	FF	Moodle		Sec	Text Book
	9.3	The comparison tests	4	FF	Moodle		Sec	Text Book
10	10.1	Alternating Series	4	FF	Moodle		Final exam	Text Book
	10.2	Absolute Convergence and the ratio and root tests	4	FF	Moodle		Final	Text Book
	10.3	Absolute Convergence and the ratio and root tests	4	FF	Moodle		Final	Text Book
11	11.1	Strategy for testing series	4	FF	Moodle		Final	Text Book
	11.2	Strategy for testing series	4	FF	Moodle		Final	Text Book
	11.3	Strategy for testing series	4	FF	Moodle		Final	Text Book
12	12.1	Strategy for testing series	4	FF	Moodle		Final	Text Book
	12.2	Strategy for testing series	4	FF	Moodle		Final	Text Book
	12.3	Strategy for testing series	4	FF	Moodle		Final	Text Book
13	13.1	Representation of functions as power series	4	FF	Moodle		Final	Text Book
	13.2	Taylor and Maclaurin series	4	FF	Moodle		Final	Text Book
	13.3	Taylor and Maclaurin series	4	FF	Moodle		Final	Text Book

14	14.1	Polar coordinates Exercises: 1, 4,5, 6,	5	FF	Moodle		Final	Text Book
	14.2	Polar coordinates Exercises: 1, 4,5, 6,	5	FF	Moodle		Final	Text Book
	14.3	Polar coordinates Exercises: 1, 4,5, 6,	5	FF	Moodle		Final	Text Book
15	15.1	Areas in Polar Coordinates Exercises: 5-10	5	FF	Moodle		Final exam	Text Book
	15.1	Areas in Polar Coordinates Exercises: 5-10	5	FF	Moodle		Final exam	Text Book
	15.1	Areas in Polar Coordinates Exercises: 5-10	5	FF	Moodle		Final exam	Text Book

24. Evaluation Methods:

Opportunities to demonstrate achievement of theCLOs 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	Ch.7+Ch.6	1+2	6 th week	On Campus
Second exam	20	Ch.8+Ch.11	3+4	10 th week	On Campus
Final exam	50	Ch.6,7,8,10,11	1+2+3+4+5		On Campus

25.Course Requirements:

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

26. Course Policies:

1. The student is not allowed to take the course and its pre-requisite in the same time.
2. Attendance is absolutely essential to succeed in this course. You are expected to attend every class; please notify your instructor if you know you are going to be absent. All exams must be taken at the scheduled time. Exceptions will be made only in extreme circumstances, by prior arrangement with the instructor.
3. If a student is absent for more than 10% of lectures without an excuse of sickness or due to other insurmountable difficulty, then he/she shall be barred from the final examination also he/she will get a failing grade in this course.
4. Medical certificates shall be given to the University Physician to be authorized by him. They should be presented to the Dean of the Faculty within two weeks of the student's ceasing to attend classes.
5. Test papers shall be returned to students after correction. His/her mark is considered final after a lapse of one week following their return.
6. Solutions for the exams questions and marks will be announced to the students.
   Cheating is prohibited. The University of Jordan regulations on cheating will be applied to any student who cheats in exams or on homework.

27. References:

A- Required book(s), assigned reading and audio-visuals:

Calculus (Early Transcendentals), 8nd edition, James Stewart, 2016.

B- Recommended books, materials,and media:

(1) Calculus, 8nd edition, Howard Anton, 2005.
(2) Calculus, 11th edition, G. Thomas, 2005.
(3) Calculus, 3rd edition, R.Smith and R. Minton, 2007

28. Additional information:

Students can learn in this course Python that can be used in drawing polar curves or can be used to draw the area between curves or volume and then to calculate it.

	Signature:	Date:
Name of the Instructor or the Course Coordinator: **Dr. Mona Sakkijha**	Signature: ……………………………	Date: 10/10/2024
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 ofScience: **Prof. EmadA. Abuosba**	Signature: ……………………………	Date: ………………
Name of the Dean or the Director: **Prof. Mahmoud Al Jaghoub**	Signature: ……………………………	Date: ………………