



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	07

1.	Course Title	Calculus II For Chemistry Students
2.	Course Number	0301107
3.	Credit Hours(Theory, Practical)	2
	Contact Hours (Theory, Practical)	2
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)	1st year-2 nd year
11.	Other Department(s) Involved in Teaching the Course	None
12.	Main Learning Language	English
13.	Learning Types	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
14.	Online Platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams
15.	Issuing Date	10 October 2024
16.	Revision Date	

17. Course Coordinator:

Name:	Contact hours:
Office number:	Phone number:
Email:	



18. Other Instructors:

Name:

Office number:

Phone number:

Email:

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; sequences; series; 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.

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. 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. Evaluate Integrals Using Advanced Techniques.
2. Apply Integral Calculus to Find the Area Between Curves.
3. Determine the Convergence of Infinite Sequences and Series.
4. Work with Power Series and Taylor/Maclaurin Series.
5. Analyze Curves and Areas Using Polar Coordinates.



Course CLOs	The learning levels to be achieved					
	Remembering	Understanding	Applying	Analysing	Evaluating	Creating
CLO(1)			•			
CLO (2)			•			
CLO(3)				•		
CLO (4)			•			
CLO(5)				•		

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

Course CLO's	Program SO'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	1.1	Integration by parts	1	FF	Moodle		Midterm exam	Text book
	1.2	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
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
4	4.1	Strategy of integration	1	FF	Moodle		Mid	Text book
	4.2	Improper integrals	1	FF	Moodle		Mid	Text book
5	5.1	Area between curves	2	FF	Moodle		Mid	Text Book
	5.2	Area between curves	2	FF	Moodle		Mid	Text Book
6	6.1	Sequences	3	FF	Moodle		Mid	Text Book
	6.2	Sequences	3	FF	Moodle		Mid	Text Book
7	7.1	Midterm	1,2	FF	Moodle			Text Book
	7.2	Series	3	FF	Moodle		Sec	Text Book
8	8.1	Series: Geometric Series	3	FF	Moodle		Sec	Text Book
	8.2	Integral test	3	FF	Moodle		Sec	Text Book
9	9.1	The comparison tests	3	FF	Moodle		Sec	Text Book
	9.2	Alternating Series	3	FF	Moodle		Sec	Text Book
10	10.1	Absolute Convergence	3	FF	Moodle		Final exam	Text Book



	10.2	Ratio and Root tests	3	FF	Moodle		Final	Text Book
11	11.1	Second Exam	3	FF	Moodle			Text Book
	11.2	Strategy for testing series	3	FF	Moodle		Final	Text Book
12	12.1	Representation of functions as power series	4	FF	Moodle		Final	Text Book
	12.2	Representation of functions as power series						
13	13.1	Taylor and Maclaurin series	4	FF	Moodle		Final	Text Book
	13.2	Taylor and Maclaurin series	4	FF	Moodle		Final	Text Book
14	14.1	Polar coordinates	5	FF	Moodle		Final	Text Book
	14.2	Polar coordinates	5	FF	Moodle		Final	Text Book
15	15.1	Areas in Polar Coordinates	5	FF	Moodle		Final exam	Text Book
	15.2	Areas in Polar Coordinates	5	FF	Moodle		Final exam	Text Book

24. Evaluation Methods:

Opportunities to demonstrate achievement of the CIOs 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	Techniques of Integration+ Area between curves	1+2	7 th week	On Campus
Second exam	20	Series-Alternating series Test	3+4	11 th week	On Campus
Final exam	50	All Material	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 prerequisite 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:

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Name of the Instructor or the Course Coordinator: Dr. Eman Aldabbas	Signature:	Date:
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. EmadA. Abuosba	Signature:	Date:
Name of the Dean or the Director: Prof. Mahmoud Al Jaghoub	Signature:	Date: