TISHK INTERNATIONAL UNIVERSITY
FACULTY OF EDUCATION
Department of PHYSICS EDUCATION,
2022-2023 Spring
Course Information for MATH 222 CALCULUS II

Course Name:	CALCULUS II				
Code	**Regular Semester**	**Theoretical**	**Practical**	**Credits**	**ECTS**
MATH 222	4	4	-	4	5

Name of Lecturer(s):	Younis Sabawi
Teaching Assistant:	Assistant professor Dr. Younis Sabawi
Course Language:	English
Course Type:	Main
Office Hours	14:30-16:30, Tuesday
Contact Email:	younis.sabawi@tiu.edu.iq Tel:07709341261
Teacher's academic profile:	Lecturer
Course Objectives:	After completing this course, students should demonstrate competency in the following skills: Finding the integrals by using Technics of integrals. Evaluating integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus. Evaluating integrals by using different methods of integration.Finding the area under curve. Finding the area between two curves. Finding the volume of the region by revolving about x-axis and y- axis.
Course Description (Course overview):	Calculus II is a continuation of Calculus I, covering more advanced topics in single-variable calculus. The course typically covers topics such as integration techniques, applications of integration, polar coordinates, sequences and series, and an introduction to multivariable calculus. In this course, students will learn to solve problems involving definite and indefinite integrals, including using substitution, partial fraction decomposition, and integration by parts. Students will also study the applications of integration to problems in physics, engineering, and economics. The course will cover topics such as finding the area under and between curves, calculating volume using the method of cylindrical shells and washers, and finding the average value of a function over an interval. In addition, the course will cover sequences and series, including infinite series, power series, and Taylor series. Students will learn to find the convergence and divergence of sequences and series and how to use them to approximate functions.

COURSE CONTENT

Week	Hour	Date	Topic
1	4	29/1-2/2/2023	Concept of Integration
2	4	5-9/2/2023	Some rules with applications
3	4	12-16/2/2023	indefinite integrals
4	4	19-23/2/2023	Integration by part
5	4	26/2-2/3/2023	Integration of Trigonometric functions, inverse of Trigonometric functions
6	4	5-9/3/2023	Integration of exponential functions, logarithmic functions
7	4	12-16/3/2023	Techniques of integration
8	4	19-23/3/2023	Integration by substation
9	4	26-30/3/2023	ntegration by fraction
10	4	2-6/4/2023	Midterm Exam
11	4	9-13/4/2023	Numerical Integration
12	4	16-20/4/2023	Trapezoidal rules
13	4	23-27/4/2023	Simpson rules
14	4	30/4-4/5/2023	definite integrals
15	4	7-11/5/2023	Some applications of integral related for Physics
16	4	14-18/5/2023	Finding area under curves
17	4	21-25/5/2023	Finding area between two curves
18	4	28/5-1/6/2023	Final Exam
19	4	4-8/6/2023	Final Exam

COURSE/STUDENT LEARNING OUTCOMES

1	Definition of Integrals
2	Technics of integrals

| 3 | Area of regions |

COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES
(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced)

	Program Learning Outcomes	Cont.
1	Discuss concepts and principles of physics.	P
2	Conduct proper experiments safely and interpret the data in physics teaching physics.	P
3	Use the results of recent education and subject-specific developmental research when designing, implementing and justifying their own practice as a teacher.	P
4	Apply analytical and theoretical skills to model and solve physics problems.	I
5	Identify students' misconceptions and deal with them in classroom.	P
6	Prepare physics lessons with appropriate learning materials and teaching methods.	A
7	Effectively assess, plan, teach, organize, and manage physics classrooms.	
8	Use appropriate methods and techniques to improve students' critical thinking, creative thinking and problem-solving skills in physics.	
9	Use required modern methods and techniques for student-centered teaching by considering individual and cultural differences of students.	
10	Effectively use a variety of teaching technologies and techniques and classroom strategies to foster student learning.	
11	Communicate effectively and work collaboratively within the context of a global society.	
12	Exhibit character and decision-making skills embodying professionalism and ethical behavior.	

Prerequisites (Course Reading List and References):	Thomas, G.B.(7th edition). Calculus and analytic geometry.
Student's obligation (Special Requirements):	Attendance, reading assignments, write homework, quizzes, midterm and final exams.
Course Book/Textbook:	Quadratic, Cubic, Exponential Logarithmic and Hyperbolic functions, the inverse of these functions and their graphs, Limits, Continuity and Derivatives and some Applications, the mean-Value theorem of differentiation and its applications, integration which is one of the basic subjects of calculus with definite and indefinite integral, some application of integration.
Other Course Materials/References:	Thomas' Calculus" 11th edition
Teaching Methods (Forms of Teaching):	Lectures, Practical sessions, Exercises, Self evaluation, , ,

COURSE EVALUATION CRITERIA

Method	Quantity	Percentage (%)
Quiz	2	5
Homework	4	2.5
Project	2	5
Midterm Exam	1	30
Final Exam	1	40
Total		**100**

Examinations: Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Short Answers, , ,

Extra Notes:

ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD

Activities	Quantity	Workload Hours for 1 quantity*	Total Workload
Theoretical Hours	19	4	76
Practical Hours	19	0	0
Final Exam	1	2	2
Quiz	2	2	4
Homework	4	6	24
Project	2	4	8
Midterm Exam	1	1	1
Total Workload			**115**
ECTS Credit (Total workload/25)			**5**

Peer review

Signature:	Signature:	Signature:
Name:	Name:	Name:
Lecturer	Head of Department	Dean