KOMAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

CALCULUS			
Course Title	**Calculus II**		
Course Code	**MTH1411**	**No. of Credits**	**4**
Department	**All Engineering Departments**	**College**	**Engineering**
Pre-requisites Course Code	**Calculus I MTH1410**	**Co-requisites Course Code**	
Course Coordinator(s)	**Mr. Dilan F. Ahmed & Mr.Ghafour Ahani**		
Email	dilan.faraidoon@komar.edu.iq ghafour.ahani@komar.edu.iq	**IP No.**	

Class Hours

S1	S,T	105	16:00-17:30	Mr.Dilan
S2	M,W	105	16:00-17:30	Mr.Dilan
S3	Sa		10:00-12:00	Mr.Ghafour
	W		16:00-17:30	

Contact Hours

S1	T		14:00-16:00	Mr.Dilan
S2	M		14:00-16:00	Mr.Dilan
S3	M		10:00-12:00	Mr.Ghafour

Course Type	☐ **University course** ☑ **College course** ☐ **Department course** ☐ **Elective**
Offer in Academic Year	**Fall 2015**

COURSE DESCRIPTION

This course in applied mathematics involves vector with operations, integral methods, differential equations and their solutions techniques (analytically and numerically) and Sequence and power series. It provides basic mathematical skills necessary for engineers to perform engineering analysis.

COURSE OBJECTIVES

The using differentiation and learning integration techniques, also to teach inverse functions, applications of integration, special techniques (substitution, parts, partial fractions, and trigonometric substitution), our course providing improper integrals, as you can introduce to infinite series. Designed for students in mathematics, engineering and sciences. The course is carried out to parallel the second-semester calculus course, and to provide a continuation of the calculus sequence.

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COURSE LEARNING OUTCOMES

After participating in the course, students would be able to:

1- **Recall their deeper understanding of the concepts they learned in Cal I.**
2- **Classify methods of the integration,**
3- **Describe whether the given integrals, sequences and series is divergent or convergent. Understand the notions of tangent vectors, equations of lines and planes.**
4- **Identify polar coordinates rather than the rectangular or Cartesian system, both of these new tools are useful for describing motion, and first order differential equations.**

GUIDELINES ON GRADING POLICY

Points	Percentage Scores	Grade
A	95–100	4.0
A-	90-94	3.7
B+	87–89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	75–79	2.3
C	70-74	2.0
C-	65-69	1.7
D+	60–64	1.3
D	55-59	1.0
D-	50-54	0.7
F	0–49	0
I	Incomplete Course Work	
W	Official Withdrawal	

Note: The minimum passing grade to pass this course is C- which is equivalent to 65%.

COURSE CONTENT

Course topics included in your text book.
Thomas Calculus
G. B. Thomas, et. al.
Pearson 2010, 12th Edition
ISBN-10: 0-321-63632-5

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Chapter 8: TECHNIQUES OF INTEGRATION

Chapter 9: First-Order Linear Equations

Chapter 10: INFINITE SEQUENCES AND SERIES

Chapter 11: PARAMETRIC EQUATIONS AND POLAR COORDINATES

COURSE TEACHING AND LEARNING ACTIVITIES

Course Teaching and Learning Activities: (short description)

1. Student will be taking a short-sided assessment consisting of 3-4 questions from the week worth of lessons. They will be given the first 15 minutes of class every week.
2. Interactive class discussion
3. Hands-on exercises.
4. Assignments.
5. Tests.
6. All students will be given the opportunity to earn extra credit points throughout the semester. However, the extra credit offered will not exceed one full letter grade of the student's total grade for the quarter.

COURSE ASSESSMENT Tools

Assessment Tool	Weight
Homework (8)	5%
Quizzes (6)	15%
Test 1	15%
Participations	5%
Midterm	15%
Test 2	15%
Final Exam	30%

ESSENTIAL READINGS: (Journals, textbooks, website addresses etc.)

Textbooks:

Thomas Calculus
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……

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References:

1- Calculus
James Stewart
Cengage Learning 2012, 7th Edition
ISBN-10: 0538497815 | ISBN-13: 978-0538497817|

2- Engineering Mathematics
Author : John Bird
Routledge2010, 6th Edition
ISBN-10: 0080965628 | ISBN-13: 978-0080965628

3- Calculus
Author: Ron Larson
Cengage Learning 2013, 10th edition
ISBN-10: 1285057090 | ISBN-13: 978-1285057095

COURSE POLICY *(including plagiarism, academic honesty, attendance etc)*

Classroom Expectations Policy

Students are expected to come to class on time and expected and attend each class for the entire semester. Students are responsible for material presented in lectures. Students should prepared and ready to work. Students are to respect each other and their property. Students are expected to be responsible for their work – making sure all assignments are turned in on time. Students are not permitted to eat or drink in the classroom.

Attendance is taken at the beginning of each class. Only students with official KUST absences, family crises, and illness are excused from class. Three occasions of lateness count as one absence. The student who misses 10 percent of the course classes will be placed on probation. **Class attendance will be part of the final grade.**

Make-up Policy

Since all examinations are announced in advance,**zerograde** will be given to any missed examination unless a student has an acceptable reason such as illness (MUST bring MC), for not being able to take the examination during **all** those days when the examination was announced.

Homework Policy

Students are expected to complete homework to be turned in the next day of class at the beginning of the period. (unless otherwise specified) The homework must be headed with name, date, and the problems assigned. Late work will be accepted only one day late, and the student will receive partial credit at that time.

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Students must be prepared in case to present homework problems on the board the next day.
Copying of homework will result in an automatic **0.**

Calculators: calculators are allowed and may be useful in class only.

Academic Dishonesty
Students who violate university standards of academic integrity are subject to disciplinary sanctions, including failure in the course and further punishment by the University Consul.

GUIDELINES FOR SUCCESS

Be Responsible

1. Be on time and be prepared with daily material, completed assignments and prepared questions
2. Follow the student Code of Conduct, and always act with academic honesty*

Be Respectful

1. Speak kindly to others
2. Listen quietly to others
3. Understand that others may have different opinions

Be Ready to Learn

1. Arrive on time and bring your supplies to class every day
2. Keep food out of sight/no sharing
3. Electronics should be stowed and in the off position during class

Course academic calendar for spring 2015

Week	Dates	Topics (Chapters)	Course Task and Requirement	Outcomes
1	28/9 - 1/10	Syllabus, Review of Cal I (Integration Specially)	HW#1	1,2
2	4/10 – 7/10	8.1 Integration by Parts 8.2 Trigonometric Integrals		1,2
3	11/10 – 14/10	8.3 Trigonometric Substitutions 8.4 Integration of Rational Functions by Partial Fractions 8.7 Improper Integrals	HW#2 Quiz #1	1,2

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4	**18/10 – 21/10**	10.1 Sequences	Test #1	2,1,3,4
5	**25/10 – 28/10**	10.2 Infinite Series	HW#3	1,2 & 3
6	**1/11 – 4/11**	10.3 The Integral Test 10.4 Comparison Tests	HW#4	2
7	**8/11 – 11/11**	10.5 The Ratio and Root Tests	Quiz #2	2,3
	15/11 – 18/11	**Midterm**		
8	**22/11 – 25/11**	10.6 Alternating, Absolute & Conditional Convergence	HW#5 Quiz #3	1,2,3
9	**29/11 – 2/12**	10.7 Power Series 10.8 Taylor & Maclaurin 10.9 Convergence of Taylor	HW#6	3
10	**6/12 – 9/12**	11.1 Parameterizations of Plane Curves 11.2 Calculus with Parametric Curves	Test #3 (Include Chapter 10)	2,3
11	**13/12 – 16/12**	11.3 Polar Coordinates 11.4 Graphing in Polar Coordinates	Quiz #4	4
12	**20/12 – 23/12**	11.4 Graphing in Polar Coordinates	HW#7	
	27/12 – 30/12	**New Year Holiday**		
13	**3/1 – 6/1**	11.5 Areas and Lengths in Polar Cor.	HW#8 Quiz #5	1,2,4
14	**10/1 – 13/1**	9.1 Solutions, Slope Fields, and Euler's Method 9.2 First-Order Linear Equations	HW Quiz #6	
15	**17/1 – 20/1**	**Review**		1,2,3 & 4
16	**24/1 – 28/1**	**FINAL EXAM**		1,2,3 & 4