



Sub.	Course Syllabus (البرنامج الدراسي) منهج المادة	الموضوع	 كلية المعرفة ALMAAREFA COLLEGE
Year	2015/2016	العام	


College	AIMAAREFA COLLEGE
Department	COMPUTER SCIENCE AND IS

Course Code	MATH 102
Course Name	Calculus II
Credit Hours	3 (3 + 0 + 1)
Instructor	Farhana Yasmin
Office & Office Hours	Tuesday : 11:00 to 2:00 Thursday: 12:00 to 2:00
Email	fyasmin@mcst.edu.sa

Course Description	Calculus II is the second in the three-semester sequence in the rigorous study of calculus. This course consists of working with logarithms and other exponential functions, trigonometric functions, and numerous integration techniques including using tables, integration by parts, substitutions, partial fractions, and improper integrals.
Prerequisite(s)	Math 101
Textbook(s) & Supplementary Materials	James Stewart. <i>Calculus - Early Transcendental, 7th edition</i> , 2012; ISBN-10:0538497904 ISBN-13: 9780538497909
Student Outcomes (SO) Addressed by the Course	<ul style="list-style-type: none"> • Perform integration using different techniques. • Use substitution to complete integrals. • Take derivatives and integrals of logarithm and exponential functions. • Integrate functions using tables. • Perform integration by parts. • Integrate powers of the trigonometric functions. • Use trigonometric substitutions, partial fractions, and other substitutions to integrate non-routine functions as needed. • Apply knowledge obtained to solve science/engineering problems. • Improve quantitative literacy, problem solving skills, and mathematical confidence. • Gain a firm understanding of the calculus idea the integral. • Demonstrate the ability to think critically and make reasonable judgments by acquiring, analyzing, combining, and evaluating quantitative and non-quantitative information. • Demonstrate the skills necessary to access and manipulate information through various technological and traditional methods. • Demonstrate the ability to use various differentiation and integration techniques with

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	<p>several types of functions.</p> <ul style="list-style-type: none"> • Demonstrate the ability to manipulate the equations of conic and polar functions. • Know how to work with formulas for differentiation and integration in working with the inverse trigonometric functions and inverse hyperbolic functions. • Learn various techniques of integration including Calculus I techniques, tables, integration by parts, integration of powers of the trigonometric functions, integration using trigonometric substitutions, integration using partial fractions, and integration using miscellaneous substitutions. 	
Major Topics Covered	<ol style="list-style-type: none"> 1) Integration <ul style="list-style-type: none"> • Antiderivatives • Techniques of integration 2) Definite Integrals <ul style="list-style-type: none"> • Properties of Definite Integrals • Fundamental Theorem of Calculus 3) Integration by Parts 4) Trigonometric Integrals 5) Trigonometric Substitution 6) Integration of Rational Functions by Partial Fractions 7) Area under a curve 8) Indefinite/definite integrals 9) Applications of integration 10) Double integrals over rectangles 	
Assessment & Evaluation Plan for the Course*	<i>Homework Assignments and attendance</i>	10 points
	<i>Quizzes</i>	5 points for each
	<i>Two Midterm Exams</i>	20 points each
	<i>Final</i>	40 points
Policies*	<ol style="list-style-type: none"> 1. Type all homework, you may use some tools e.g., MS Office, Visio, etc. 2. Students can discuss homework, but no copying!, according to the college by laws the minimum penalty of plagiarism is failing the course. 3. Late Submission Penalty 	

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CALENDAR & OUTLINE OF TOPICS

WEEK	DATE	TOPICS	DUTIES/TASKS DUE DATES
1	26/01/2015	Integration	
2	02/02/2015	Antiderivatives	HW 1
3	09/02/2015	Antiderivatives	QUIZ 1
4	16/02/2015	Definite Integrals	HW 2
5	23/02/2015	Definite Integrals	
6	02/03/2015	Area under a curve	HW 3
7	09/03/2015	Trigonometric Substitution	MIDTERM 1
8	16/03/2015	Trigonometric Substitution	
9	23/03/2015	Integration by Parts	Project
10	30/03/2015	Integration by Parts	QUIZ 2
11	06/04/2015	Integration of Rational Functions by Partial Fractions	
12	13/04/2015	Indefinite/definite integrals	MIDTERM 2
13	20/04/2015	Applications of integration	
14	27/04/2015	Double integrals over rectangles	HW 4
15	04/05/2015	Revision	
16	11/05/2015	Revision	
17 & 18	18/05/2015	Final Exam	FINAL EXAMS

* According to the department council approval