Course Syllabus Form

1. College: Science						
2. Department: Mathematics						
3. Program: B.Sc.(Engineering and IT students only)						
4. Course code: Maths 101						
5. Course title: Calculus I						
6. Course credits: Credit Hours 3 Lab Hours 0 Lecture Hours 3						
7. Pre-requisites: None						
8. Course web-page: None						
9. Course coordinators: Dr. A.Salam Al-Mannaei						
10. Academic year: 2018 – 2019						
11. Semester:		**First**	**√**	**Second**		**Summer**
12. Textbook(s): **Thomas Calculus (Early Transcendental), 12th edition & 13th edition (Pearson)**						
13. References: **1) Calculus, by Smith and Minton. 4th edition (McGraw-Hill)** **2) Thomas Calculus, 12th edition (Global Edition) , Pearson**						
14. Other resources used (e.g. e-Learning, field visits, periodicals, software, etc.): • Paul's Online Math. Notes : http://tutorial.math.lamar.edu • Salman Khan Academy: http://www.khanacademy.org/math/calculus/differential-calculus/						
15. Course description (from the catalog): *Algebra. Functions and graphs. Trigonometry. Conic sections. Limits and continuity. Derivatives and integrals. Applications of derivatives which include mean value theorem, extrema of functions and optimization. Definite integrals and the Fundamental Theorem of Calculus.*						

16. Course Intended Learning Outcomes (CILOs):

Students who successfully complete this course should be able to:

	Mapping to PILOs										
CILOs	*a*	*b*	*c*	*d*	*e*	*f*	*G*	*h*	*i*	*j*	*k*
1. Evaluate limits both geometrically and algebraically.											
2. Examine continuity and classify the type of discontinuity.		Note that the mapping of the CILOs with the PILOs should be done by Engineering and IT Colleges									
3. Using limits involving infinity tofindasymptotes.											
4. Find derivative of functions using limit.											
5. Using different rules of differentiation such as power rule, product rule, quotient and chain rule with some applications											
6. Recall some Transcendental functions (such as Exponential and Trigonometric), their properties with their inverses.											
7. Recognize the relation between the anti-derivative and indefinite integral.											

8. Use the fundamental theorem of calculus to evaluate definite integrals and consequently the area between curves.											
9. Evaluate integrals using the substitution method.											
10. Employ derivatives to describe the graphical behavior of functions and sketch their graphs.											
11. Apply derivatives in solving real life problems such as optimization and related rates.											

17. Course assessment:

Assessment Type	*Number*	*Weight*
Quizzes	***-***	*-*
Midterms	***2***	*50 %*
Laboratory/Practical	***-***	*-*
Assignments/Homework's	***9***	*10 %*
Projects/Case Studies	***-***	*-*
Final	***1***	*40%*
Total	***12***	*100%*

18. Assessment Details:

Exam	***Weight***	***Time***	***Date***	***Place***	***Material***
Test 1	*25%*	*T.B.A.*	*T.B.A.*	*T.B.A.*	*T.B.A.*
Test 2	*25%*	*T.B.A.*	*T.B.A.*	*T.B.A.*	*T.B.A.*
Online Homework's	*10%*	*See Last Page*	*See Last Page*	*-*	*See Last Page*
Final exam	*40%*	*2:30-4:30*	*8/6/2019*	*T.B.A.*	*Comprehensive*

19.Course Instructors:

Sections	***Name***	***Office***
1,4	*Dr. Naeem Alkoumi*	*S41-2038*
2	*Dr. Mohd Aiyub*	*S41-2049*
3	*Dr. Mustafa Ibrahim*	*S41-2092*
9	*Dr. Abdulla Eid*	*S41-2098*
10,11,12	*Dr. A. Salam AlMannaei*	*S41-2084*
5,7,8	*Dr. Muhannad Shahwan*	*S41-2099*

20. Course Weekly Breakdown:

Week	*Date*	*Topics covered*	*CILOs*	*Teaching Method*	*Assessment*
1	10 Feb. 2019	2.2 Limit of a Function & Limit Laws	*1*	*Lecture & Problem solving*	Test 1 & Final Exam
2	17 Feb. 2019	2.4 One-Sided Limits 2.5 Continuity	*1* *2*	*Lecture & Problem solving*	Test 1 & Final Exam
3	24 Feb. 2019	2.6 Limits Involving Infinity; Asymptotes of Graphs 3.2 The Derivatives as a Function	*3* *4*	*Lecture & Problem solving*	Test 1 & Final Exam
4	3 March 2019	3.3 Differentiation Rules	*5*	*Lecture & Problem solving*	Test 1 & Final Exam
5	10 March 2019	3.5 Derivatives of Trigonometric Functions	*5,6*	*Lecture & Problem solving*	Test 1 & Final Exam
6	17 March 2019	3.6 The Chain Rule 3.7 Implicit Differentiation	*5* *5*	*Lecture & Problem solving*	Test 2 & Final Exam
7	24 March 2019	3.8 Derivatives of Inverse Functions and Logarithms 3.9 Inverse Trigonometric Functions	*5,6* *6*	*Lecture & Problem solving*	Test 2 & Final Exam
8	31 March 2019	**Mid-Semester Break**	-	-	-
9	7 April 2019	3.10 Related Rates 3.11 Linearization and Differentials	*5*	*Lecture & Problem solving*	Test 2 & Final Exam
10	14 April 2019	4.8 Anti-derivatives	*7*	*Lecture & Problem solving*	Test 2 & Final Exam
11	21 April 2019	5.3 The Definite Integral 5.4 The Fundamental Theorem of Calculus	*8* *8*	*Lecture & Problem solving*	Test 2 & Final Exam
12	28 April 2019	5.5 Indefinite Integrals & the Substitution Method	*7,9*	*Lecture & Problem solving*	Final Exam
13	5 May 2019	5.6 Substitution and Area Between Curves 4.1 Extreme Values of Functions	*8,9* *10*	*Lecture & Problem solving*	Final Exam
14	12 May 2019	4.3 Monotonic Functions & 1st Derivative Test 4.4 Concavity & Curve Sketching	*10* *10*	*Lecture & Problem solving*	Final Exam
15	19 May 2019	4.4 Concavity & Curve Sketching 4.6 Applied Optimization	*10* *11*	*Lecture & Problem solving*	Final Exam
16	26 May 2019	4.6 Applied Optimization	*11*	*Lecture & Problem solving*	Final Exam

21. Attendance Policy:

Extracts from the University Bulletin regarding withdrawal and enforced withdrawal:

A student's absence from lectures or classes in excess of 25% of the total assigned session will result in an automatics withdrawal of the student from the course, regardless of the causes for his/her absence.

a) A grade of (W) is given to a student who misses 25% or more of the total sessions assigned to the course if he/she presents a valid excuse for his/her absence.

b) A grade of (WF) is given to a student who misses 25% or more, but with no valid excuse.

22. Academic Honesty and Plagiarism*:*

All students are expected to follow the specific rules of academic honesty and plagiarism as per The Regulation of Professional conduct Violations for University of Bahrain Students, decision # 4/2006. Please refer the UoB website-Deanship of Students Affairs-Guidance Office.

Course Weekly Examples and Problems

Week	Date	Section	Topics covered	Examples	Problems
1	10 Feb. 2019	2.2 2.4	Limit of a Function & Limit Laws One-Sided Limits	5 , 6 , 7, 9,10 2	11-42, 63 1-4, 11-18
2	17 Feb. 2019	2.4 2.5	One-Sided Limits Continuity	2	1-4, 11-18 13-16, 25-28, 43-48
3	24 Feb. 2019	2.6 3.2	Limits Involving Infinity; Asymptotes of Graphs The Derivatives as a Function	2,3, 6 1, 2	3-8, 13-48 1-12
4	3 March 2019	3.3	Differentiation Rules	1,3	1-54
5	10 March 2019	3.5	Derivatives of Trigonometric Functions	1-6 (sec. 2.4 :5,6)	1-34,55,56 (sec.2.4:21-42)
6	17 March 2019	3.6 3.7	The Chain Rule Implicit Differentiation	1-6 1-5	1-90 1-40
7	24 March 2019	3.8 3.9	Derivatives of Inverse Functions and Logarithms Inverse Trigonometric Functions	3, 5, 6, 7 2,3	11-96 21-42
8	31 March 2019		**Mid-Semester Break**	-	-
9	7 April 2019	3.10 3.11	Related Rates Linearization and Differentials	1-3 1-5	3-12, 20, 21 1-6, 7-15, 19-38
10	14 April 2019	4.8	Anti-derivatives	1, 2, 3, 6	25-70, 91-113
11	21 April 2019	5.3 5.4	The Definite Integral The Fundamental Theorem of Calculus	2 2,3	9-14 1-34, 39-56
12	28 April 2019	5.5	Indefinite Integrals & the Substitution Method	1-9	1-66
13	5 May 2019	5.6 4.1	Substitution and Area Between Curves Extreme Values of Functions	1,2 2,3	1-46 21-28, 45-52
14	12 May 2019	4.3 4.4	Monotonic Functions & 1st Derivative Test Concavity & Curve Sketching	1 7	19-24 9-22
15	19 May 2019	4.4 4.6	Concavity & Curve Sketching Applied Optimization	7 1,2	9-22 1,2,4-8, 11, 12, 29, 30, 33-36
16	26 May 2019	4.6	Applied Optimization	1,2	1,2,4-8, 11, 12, 29, 30, 33-36

ONLINE HOMEWORK'S

H.W #	Assignment coverage	Date "Start" (D/M/Y) 1:00 am	Date "Due" (D/M/Y) 11:59 pm
1	**Section 2.2**	**16/2/2019**	**22/2/2019**
1	Sections 2.4, 2.5	23/2/2019	1/3/2019
2	Section 2.6	23/2/2019	8/3/2019
3	Section 3.3, 3.2	2/3/2019	22/3/2019
4	Sections 3.5, 3.6, 3.7	9/3/2019	19/4/2019
5	Section 3.8, 3.9	13/4/2019	3/5/2019
6	Sections 3.10, 3.11	20/4/2019	10/5/2019
7	Sections 5.3, 5.4	27/4/2019	17/5/2019
8	Sections 5.5	2/5/2019	24/5/2019
9	Sections 4.1, 4.2, 4.3	2/5/2019	24/5/2019

There will be **three bonus** homework during the semester

2018 students

Mymathlab account

Section(s)	System	Course ID
All Sections	MyMathLab www.mymathlab.com	eid33369

2017 or previous students

Section(s)	System	Course ID
All Sections	BlackBoard www.bb.uob.edu.bh	No need Log it with your SIS username and password