Course Syllabus Form

1.	**College:** Science
2.	**Department:** Mathematics
3.	**Program:** B.Sc. (Engineering and IT students only)
4.	**Course code:** Maths 102
5.	**Course title:** Calculus II
6.	**Course credits:** Credit Hours 3 Lab Hours 0 Lecture Hours 3
7.	**Pre-requisites:** Maths 101
8.	**Course web-page:** www.abdullaeid.net/MATHS102
9.	**Course Instructor:** Dr. Abdulla Eid
10.	**Academic year:** 2017 – 2018

11. Semester:		**First**		**Second**	√	**Summer**

12. Textbook(s):

Thomas Calculus (Early Transcendentals), 12th edition (Pearson)

13. References:

1) Calculus, by Smith and Minton. 4th edition (McGraw-Hill).

2) Thomas Calculus, 12th edition (Global Edition) , Pearson

3) Paul's Online Math. Notes : http://tutorial.math.lamar.edu

14. Other resources used (e.g. e-Learning, field visits, periodicals, software, etc.):

15. Course description (from the catalog):

Applications of definite integrals, including areas, volumes and surface areas of solids of revolution, arc length and centroids. Transcendental functions, indeterminate form and L'Hopital's Rule. Techniques of integration and improper integrals. Infinite series, power series. Maclaurin and Taylor Theorem.

16. Course Intended Learning Outcomes (CILOs):

1. *Use integrals to evaluate areas between curves and volumes of solids of revolution.*

2. *Apply L' Hopital's rule to evaluate limits of indeterminate forms.*

3. *Evaluate integrals using various techniques of integration including integration by parts, trigonometric substitutions, and partial fractions.*

4. *Recognize and evaluate improper integrals.*

5. *Determine the convergence or divergence of a sequence of real numbers.*

6. *Use various tests (divergence nth term test, integral test, comparison tests, alternating series tests, ratio test, and root test) to study the convergence of series of real numbers.*

7. *Determine the radius and interval of convergence of a power series.*

8. *Determine Taylor and Maclaurin polynomial and series of functions.*

9. *Apply Taylor and Maclaurin series to approximate definite integrals and to evaluate limits.*

17. Course assessment:

Assessment Type	Assessment details		Number	Weight
Tests	Test #	CILOs covered	2	50 %
	1	1,2,3.		
	2	3,4,5,6.		
Laboratory/Practical			-	
Quizzes/Home works	H.W. #	CILOs covered	10	10 %
	1,2,3	LO1		
	4,5	LO2		
	6,7	LO3		
	8,9	LO3		
	10,11,12	LO3		
	13,14	LO5		
	15,16	LO6		
	17	LO6		
	18	LO7 , 8 , 9		
Projects/Case Studies			-	
Final	CILOs 1,2,3,4,5,6,7,8,9		1	40%
Total			12	100%

18. Assessment Details:

Exam	Weight	Time	Date	Place	Material
Test 1	25%	2 pm – 3 pm	July 12	Hall 18	5.6 – 8.2
Test 2	25%	2 pm – 3 pm	July 29	Hall 18	8.3 – 10.3
Final exam	40%	8:30 – 10:30	14 - 8 – 2018	-	Comprehensive

19. Course Instructors:

Sections	Name	Office
1	Dr. Khalid Amin	S41-2100 Mobile 37772311
2,5	Dr. Moustafa	S41-2091
3,4	Dr. Abdulla Eid	S41-2098

20. 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.

21. 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.

22. Course Weekly Breakdown

Week	Date	Topics covered	CILOs	Teaching Method	Assessment	Examples	Suggested Problems
1	24 / 6 / 2018	5.6 Area 6.1 Volume	1	Lecture & Problem solving	Test 1, HW1,2 & final exam	5-7 4-10	47-62 , 63-68 , 73-76 15-22 , 39-42 , 51-53
		6.1 Volume 6.2 Volumes using cylindrical shells	1	Lecture & Problem solving	Test 1, HW2,3 & final exam	4-10 2 , 3	15-22 , 39-42 , 51-53 1-6 , 15-26
2	1/7 / 2018	4.5 L'hopitals rule 7.3 Hyperbolic Functions	2 3	Lecture & Problem solving	Test 1, HW4,5 & final exam	1-8 1(a)	1-74 1-10 , 13-24
		8.1 Integration by parts	3	Lecture & Problem solving	Test 1, HW6 & final exam	1-4 , 6- 8	1-50
3	8/7 / 2018	8.2 Trigonometric Integrals 8.3 Trigonometric Substitutions	3 3	Lecture & Problem solving	Test 2, HW7,8 & final exam	1-7 1-3	1-22 , 23-26 , 33-56 1-46
		8.4 Integral of Rational functions 8.6 Numerical Integration	3 3	Lecture & Problem solving	Test 2, HW9,10 & final exam	1- 9 1 , 2	1-42 1-10 (a)
4	15/7 / 2018	8.7 Improper integrals	4	Lecture & Problem solving	Test 2, Hw 12 & final exam	2-7	1-27 , 40 , 50 , 55 , 56 , 60
		10.1 Sequences 10.2 Infinite Series	5 6	Lecture & Problem solving	Test 2, HW12,13 & final exam	3 , 4 , 7-9 1 , 2 , 5 , 7 , 9	1-6 , 27-62 7-60 , 63-68
5	22/7 / 2018	10.2 Infinite Series 10.3 The Integral Test	6 6	Lecture & Problem solving	Test 2, HW14,15 & final exam	1, 2, 4, 5, 7, 9 3 , 4 , 5	7-60 , 63-68 1-10 , 11-38 , 49-52
		10.4 Comparison Tests 10.5 The Ratio and Root Tests	6 6	Lecture & Problem solving	HW16,17 & final exam	1(a,b) , 2(a,b) , 3 1-3	1-8 , 9-16 , 17-49 1-43 , 47 , 49 , 54
6	29 / 7 / 2018	10.6 Alternating Series , Absolute and conditional convergence	6	Lecture & Problem solving	HW18 & Final exam	1 , 4 , 5	1-36 , 49-54
		10.6 Alternating Series , Absolute and conditional convergence 10.7 Power Series	6 7	Lecture & Problem solving	HW18 & Final exam	1 , 4 , 5 1-6	1-36 , 49-54 1-32 , 41-48
7	5/8 / 2018	10.7 Power Series 10.8 Taylor and Maclaurin Series	7 8	Lecture & Problem solving	HW19 & Final exam	1-6 1-3	1-32 , 41-48 1-26
		10.9 Convergence of Taylor Series 10.10 Applications of Taylor Series Last day of classes (**August 9 ,2018**)	8 9	Lecture & Problem solving	Final Exam	4 , 5 1, 2, 3 ,5 ,6 ,7	1-10, 11-23 , 35 , 36 15-22, 29-34

ONLINE HOMEWORK'S   www.mathxl.com

Batches 2015 and below → Quizzes

Batches 2017 and 2016 → Online HW

We will take the best 12 homework sets

H.W #	Assignment coverage	Date "Start" (D/M/Y) 1:00 am	Date "Due" (D/M/Y) 11:55 pm
1	Section 5.6	24.6.2018	30.6.2018
2	Section 6.1	24.6.2018	30.6.2018
3	Section 6.2	24.6.2018	30.6.2018
4	Section 4.5	1.7.2018	9.7.2018
5	Section 7.3	1.7.2018	9.7.2018
6	Section 8.1	1.7.2018	9.7.2018
7	Section 8.2	8.7.2018	16.7.2018
8	Section 8.3	8.7.2018	16.7.2018
9	Section 8.4	8.7.2018	16.7.2018
10	Section 8.6	8.7.2018	16.7.2018
11	Section 8.7	15.7.2018	23.7.2018
12	Section 10.1	15.7.2018	23.7.2018
13	Section 10.2	15.7.2018	23.7.2018
14	Section 10.3	22.7.2018	30.7.2018
15	Section 10.4	22.7.2018	30.7.2018
16	Section 10.5	22.7.2018	30.7.2018
17	Section 10.6	29.7.2018	6.8.2018
18	Section 10.7	29.7.2018	6.8.2018

Section(s)	Course ID
All Sections	XL30-O1EZ-201Y-5UI2