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FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI
UNIVERSITI TEKNIKAL MALAYSIA MELAKA</td></tr>
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	Teaching Plan **FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI** **UNIVERSITI TEKNIKAL MALAYSIA MELAKA**	
	CALCULUS	
DITI 1213	**SEMESTER 1**	**SESSION 2020/2021**

DITI 1213 CALCULUS (3, 2, 2)
TYPE OF COURSE: P
EDITION: 1
UPDATED: 11-09-2019

1.0 LEARNING OUTCOMES

Upon completion of this course, students will be able to:

  i. Apply knowledge and fundamental concepts of Calculus (C3)
  ii. Solve application problems using software by referring to Calculus theories (CS2,CTPS2)
  iii. Solve application problems by relevant information using suitable techniques (CTPS3)

2.0 SYNOPSIS

This course covers one discipline of mathematics namely Calculus. Topics for Calculus include Set of Real Numbers, Functions, Derivative, Techniques of Differentiation, Application of Derivatives, Exponential and Natural Logarithm Functions, Definite Integral, Techniques of Integration and Application of Integration.

3.0 PRE-REQUISITE

NONE

4.0 TUTORIAL/LAB AND PRACTICAL
  a) Tutorials and Assignments
  b) The open source software or applications are introduced in the practical sessions. Students will be given an overview of this tools working environment.

5.0 REFERENCES

[1] Bittinger M.L.,Ellenbogen D.J, S.J. Surgent (2012). Calculus and Its Applications, Pearson International Edition.

[2] Goldstein, L. J., Lay, D.C, Schneider D.I., Asmar, N.H. (2013). Brief Calculus and Its Applications, 13th Edition; Pearson.

[3] Briggs, B., Cochran, L., Gillett, B. (2014). Calculus: Early Transcendentals. Pearson.

[4] Stewart, J.(2015).Calculus, 8th Edition; Pearson Education.

[5] Larson (2012). Brief Calculus: An Applied Approach, 9th Edition; Cengage Learning.

6.0 COURSE IMPLEMENTATION

   i. Lecture
- 2 hours per week for 14 weeks (Total = 28 hours)

  ii. Tutorial
- 2 hours per week for 14 weeks (Total = 28 hours)

6.0 COURSE EVALUATION

Assessment Method	LO 1	LO 2	LO 3
Quiz (Q)	Q1 (5%) Q2 (5%)		
Assignment (A)		A1 (15%) A2 (15%)	
Mid Term (MT)	MT1 (15%)		MT2 (15%)
Final (F)	FE1 (15%)		FE2 (15%)
Total	**40%**	**30%**	**30%**

7.0 STUDENT LEARNING TIME (SLT)

Week	CLO	Guided Learning Time				Independant Learning								Assessment Time				SLT
		L	T	P	O	L	T	P	O	F	T	A	O	F	T	A	O	
W1	1	2	2			1	1.5	0		0	0	0	0					6.5
W2	1	2	2			1	1.5	0		0	0	0	0					6.5
W3	1	2	2			1	1.5	0		0	0	0	0.5				0.25	7.25
W4	1	2	2			1	1.5	0		0	0	0	0					6.5
W5	2	2	2			1	1.5	0		0	0	3	0			1		10.5
W6	2	2	2			1	1.5	0		0	0	0	0					6.5
W7	2	2	2			1	1.5	0		0	8	0	0		2			16.5
W8	3	2	2			1	1.5	0		0	0	0	0					6.5
W9	2	2	2			1	1.5	0		0	0	0	0					6.5
W10	2	2	2			1	1.5	0		0	0	0	0					6.5
W11	3	2	2			1	1.5	0		0	0	0	0.5				0.25	7.25
W12	3	2	2			1	1.5	0		0	0	3	0			1		10.5
W13	3	2	2			1	1.5	0		0	0	0	0					6.5
W14	3	2	2			1	1.5	0		0	0	0	0					6.5
>W14										8	0	0	0	2				10
Overall		28	28	0	0	14	21	0	0	8	8	6	1	2	2	2	0.5	120.5

SLT Credit Equivalent	3.0125

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8.0 DETAILED SYLLABUS AND TEACHING PLAN

Week	Session	Contents	References	Delivery Method
1	Lecture 1	Numbers, operations and notations Fundamental Concepts Of Algebra	[1,2]	Lecture
	Tutorial 1	Pre-Test and Problem solving of Lecture 1		Tutorial/Lab
2	Lecture 2	Functions • Relation and functions • Representation of functions • Domain Range	[1,2]	Lecture
	Tutorial 2	Problem solving of Lecture 2		Tutorial/Lab
3	Lecture 3	Functions • Composite • Inverse of function	[1,2]	Lecture
	Tutorial 3	Problem solving of Lecture 3		Tutorial/Lab
4	Lecture 4	Functions • Exponential function	[1,2]	Lecture
	Tutorial 4	Problem solving of Lecture 4		Tutorial/Lab
5	Lecture 5	Functions • Logarithm functions • Application	[1,2]	Lecture
	Tutorial 5	Problem solving of Lecture 5		Tutorial/Lab
6	Lecture 6	Limit • Definition Of Limit • Properties Of Limits • Limit Of Infinite Function	[2,3]	Lecture
	Tutorial 6	Problem solving of Lecture 6		Tutorial/Lab

7	Lecture 7	Limit • Define Limits At Infinity Continuity • The Continuity Test	[2,3]	Lecture
	Tutorial 7	Problem solving of Lecture 7		Tutorial/Lab
8		**MIDTERM BREAK**		
9	Lecture 8	Differentiation • Differentiation of a Function	[2,3]	Lecture
	Tutorial 8	Problem solving of Lecture 8		Tutorial/Lab
10	Lecture 9	Differentiation • Rules of Differentiation • Higher order Differentiation	[2,3]	Lecture
	Tutorial 9	Problem solving of Lecture 9		Tutorial/Lab
11	Lecture 10	Differentiation • Implicit Differentiation Problem solving of Lecture 12	[2,3]	Lecture
	Tutorial 10			Tutorial/Lab
12	Lecture 11	Differentiation • Application of Differentiation	[2,3]	Lecture
	Tutorial 11	Problem solving of Lecture 11		Tutorial/Lab
13	Lecture 12	Integration • Indefinite Integration • Definite Integration	[2,3]	Lecture
	Tutorial 10	Problem solving of Lecture 10		Tutorial/Lab
14	Lecture 13	Integration • Improper Integration • Techniques of Integration	[2,3]	Lecture
	Tutorial 13	Problem solving of Lecture 13		Tutorial/Lab

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15	Lecture 14	Integration • Techniques of Integration • Application of Integration	[2,3]	Lecture
	Tutorial 14	Problem solving of Lecture 14		Tutorial/Lab
16		**STUDY WEEK**		
17 – 18		**FINAL EXAM**		

10.0 MATRIX OF LEARNING OUTCOMES

SUBJECT vs PROGRAM OUTCOME (PO)

Subject	PROGRAM OUTCOME (PO)								
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
DITI 1213	X				X				

LEARNING OUTCOME (LO) vs PROGRAM OUTCOME (PO)

LO	PROGRAM OUTCOME (PO)								
LO1	X								
LO2					X				
LO3					X				

LEARNING OUTCOME (LO)

LO1	Apply knowledge and fundamental concepts of Calculus (C3)
LO2	Manipulate problems using software by referring to Calculus theories (CS2,CTPS2)
LO3	Solve application problems by relevant information using suitable techniques. (CTPS3)

SUBJECT vs SOFT SKILLS

Subject	SOFT SKILLS																							
	communication skill					critical thinking & problem solving					team work			lifelong learning			entrepreneurship skills			ethics&moral professionalism			leadership skills		
	CS1	CS2	CS3	CS4	CS5	CTPS1	CTPS2	CTPS3	CTPS4	CTPS5	TS1	TS2	TS3	LL1	LL2	LL3	ES1	ES2	ES3	EM1	EM2	EM3	LS1	LS2	LS3
DITI 1213	X	X				X	X	X																	

LEARNING OUTCOME (LO) vs SOFT SKILLS

LO	SOFT SKILLS																							
	communication skill					critical thinking & problem solving					team work			lifelong learning			entrepreneurship skills			ethics & moral professionalism			leadership skills		
	CS1	CS2	CS3	CS4	CS5	CTPS1	CTPS2	CTPS3	CTPS4	CTPS5	TS1	TS2	TS3	LL1	LL2	LL3	ES1	ES2	ES3	EM1	EM2	EM3	LS1	LS2	LS3
LO1																									
LO2	X	X				X	X																		
LO3						X	X	X																	

SUBJECT vs TAXONOMY

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Subject	Taxonomy																
	Affective					Cognitive						Psychomotor						
	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	P1	P2	P3	P4	P5	P6	P7
DITI 1213						X	X	X										

LEARNING OUTCOME (LO) vs TAXONOMY

LO	Taxonomy																
	Affective					Cognitive						Psychomotor						
	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	P1	P2	P3	P4	P5	P6	P7
LO1						X	X	X										
LO2																		
LO3																		

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TEACHING PLAN APPROVAL

Prepared by;   Approved by;

……………………………………………………….   …………………………………………………
Name: Zuraini Othman   Dean/Deputy Dean (Academic)/HOD

Stamp: Stamp:

Date: ___29 August 2018_____   Date: _____

TEACHING PLAN IMPLEMENTATION
(MID SEMESTER BREAK)

Comment :

Checked by;

…………………………………..
Dean/Deputy Dean (Academic)/HOD

Stamp :   Date: _____

TEACHING PLAN IMPLEMENTATION
(WEEK 16)

Comment :

Checked by;

…………………………………..
Dean/Deputy Dean (Academic)/HOD

Stamp :   Date: _____

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