Teaching Plan

FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

ADVANCED DATABASE PROGRAMMING

BITP 3513	SEMESTER 2	SESSION 2023/2024

BITP 3513 ADVANCED DATABASE PROGRAMMING (3, 2, 2)
TYPE OF COURSE: ELECTIVE
EDITION: 3
UPDATED: 11-03-2024

1.0 LEARNING OUTCOMES

Upon completion this course, students will be able to:

i) explain the requirements and related model designs for developing a web database application. (A1, C2)
ii) use various components like new pages, reports regions, items and other components for GUI control required to enhance an application. (P3)
iii) analyze processes, validations, computations and dynamic actions involved in the development of the application. (A3, C3, P4, CTPS1).

2.0 SYNOPSIS

This course is designed to introduce students to the design, development and deployment of beautiful, responsive, database-driven applications using the low-code framework, Oracle Application Express. Student will learn about creating database applications for both desktop and mobile interfaces. The lesson includes adding various components like new pages, reports regions, items and other components required to enhance an application. Furthermore, student will be able to create processes, validations, computations and dynamic actions within an application as well as changing the look and feel of the web applications using built-in themes and templates. The students can also learn about implementing security in an application using authorization scheme and using plug-ins.

3.0 PRE-REQUISITE

BITP 2303 Database Programming

4.0 PRACTICAL

During this course, students will attend the laboratories to analyze, design, develop and test various components for database-driven web applications using Oracle Application Express. Lecture session is combined with laboratory activities.

5.0 REFERENCES

i) Oracle Learning Library – Oracle Application Express. Accessed from: *https://apexapps.oracle.com/pls/apex/f?p=44785:1* on March 2018.
ii) Edward Sciore (2015), Understanding Oracle APEX 5 Application Development, 2nd Edition, Apress
iii) S. Feuerstein and B. Pribyll (2014), Oracle PL/SQL Programming, 6th ed. Oreilly Media Inc.
iv) Pataballa, N. and Nathan, P. (2001). Introduction to Oracle9i: SQL, Volume 1 and Volume 2, Oracle University.
v) Pataballa, N. and Nathan, P. (2001). Oracle9i: Program with PL/SQL, Volume 1 and Volume 2, Oracle University.

6.0 COURSE IMPLEMENTATION

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

7.0 COURSE EVALUATION

Assessment Method	LO 1	LO 2	LO 3
Assignment (2) = 30%	T1 (10%)	T2(20%)	
Mini Project (2) = 20%		MP1 (10%)	MP1 (10%)
Mid Term (1) = 20%	MT 20%		
Final Exam(1) = 30%			F1 (30%)
Total	30 %	30%	40%

8.0 STUDENT LEARNING TIME (SLT)

		Guided Learning Time (hr)				Independant Learning(hr)								Assessment Time (hr)				
Minggu *Week*	CLO	L	T	P	O	L	T	P	O	F	T	A	O	F	T	A	O	SLT
W1	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W2	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W3	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W4	0	2	0	2	0	1	0	1	0	0	0	2	0	0	0	0.5	0	8.5
W5	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W6	0	2	0	2	0	1	0	1	0	0	0	2	0	0	0	0.5	0	8.5
W7	0	2	0	2	0	1	0	1	0	0	8	0	0	0	2	0	0	16
W8	0	2	0	2	0	1	0	1	0	0	8	0	0	0	2	0	0	16
W9	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W10	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W11	0	2	0	2	0	1	0	1	0	0	0	2	0	0	0	0.5	0	8.5
W12	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W13	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W14	0	2	0	0	2	1	0	0	0	0	0	4	0	0	0	1	0	10
W15	0	0	0	0	0	0	0	0	0	8	0	0	0	2	0	0	0	10
Keseluruhan *Overall*		28	0	26	2	14	0	13	0	8	16	10	0	2	4	2.5	0	125.5
																	SLT Credit Equivalent	3.14

9.0 DETAILED SYLLABUS AND TEACHING PLAN

Week	Session	Contents	References
1	Lecture 1	• Course Outline and Introduction to Application Express	[1,2,3,4,5]
	Lab 1	• Obtain a free APEX development environment. • Navigate through the major Components of Oracle APEX. • Install and run a Packaged Application.	
2	Lecture 2	• Using SQL Workshop and Creating a Database Application	[1,2,3,4,5]
	Lab 2	• Using SQL Workshop – Quick SQL	
3	Lecture 3	• Revision of Database Design ○ Creating DDL Statements and INSERT statement in SQL Workshop	[1,2,3,4,5] **PTG**
	Lab 3	• Creating Queries - Using SQL command and Query Builder	
4	Lecture 4	• Managing Pages in Page Designer	[1,2]
	Lab 4	• Developing Reports	
5	Lecture 5	• Managing and Customizing Interactive Reports	[1,2]
	Lab 5	• Managing and Customizing Interactive Grids	**PTG**
6	Lecture 6 and Lab 6	• Creating and using forms • Master-detail forms • Building database application for PSM	[1,2,3,4,5]
7	Lecture 7 and Lab 7	• Creating Application Page Controls	[1,2,3,4,5] **PTG**
8		**MID-TERM BREAK (29/4/2024-3/5/2024)**	[1,2,3,4,5]
9	Lecture 8 and Lab 8	• Adding Computations, Processes and Validations	
		• Managing Cards, faceted search and smart filters	
			[1,2]

10	Lecture 9 and Lab 9	• Implementing Navigation and Search in your Applications • **MID TERM TEST**	**PTG**
11	Lecture 10 and Lab 10	• Using Themes and Theme Style • Implementing Security in Your Applications	[1,2]
12	Lecture 11 and Lab 11	• Managing Application Data • Understanding Data Load and Collections, REST	[1,2] PTG
13	Lecture 12 And Lab 12	• Adding Additional Pages to your Application	[1,2] **PTG**
14	Lecture 13 and Lab 13	• Creating and Using Dynamic Actions and Plug-ins	[1,2]
15	Lecture 14 and Lab 14	• Extending Application Capabilities • Migrating Application Development Between Environments	[1,2] **PTG**
16		REVISION WEEK	
17-18		EXAMINATION WEEK	

10.0 MATRIX OF LEARNING OUTCOMES

SUBJECT vs PROGRAM OUTCOME (PO)

Subject	PROGRAM OUTCOME (PO)								
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
BITP3513		X	X	X					

LEARNING OUTCOME (LO)

LO1	explain the requirements and related model designs for developing a web database applications. (A1,C2)
LO2	use various components like new pages, reports regions, items and other components for GUI control required to enhance an application. (P3)
LO3	analyze processes, validations, computations and dynamic actions involved in the development of the application. (A3,C3,P4,CTPS1).

LEARNING OUTCOME (LO) vs PROGRAM OUTCOME (PO)

LO	PROGRAM OUTCOME (PO)								
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
LO1		X							
LO2			X						
LO3				X					

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
BITP3513						X																		

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																									
LO3						X																			

SUBJECT vs TAXONOMY

Subject	Taxonomy																		
	Affective					Cognitive						Psychomotor							
	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	P1	P2	P3	P4	P5	P6	P7	
BITP3513	X	X	X			X	X	X				X	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												X	X	X					
LO3	X	X	X			X	X	X				X	X	X	X				

TEACHING PLAN APPROVAL

Prepared by;

……
Name:

Stamp:

Date: _____

Approved by;

……
Dean/Deputy Dean (Academic)/HOD

Stamp:

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: _____