Teaching Plan

FAKULTI TEKNOLOGI MAKLUMAT & KOMUNIKASI
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

SYSTEM ANALYSIS AND DESIGN

DITP 2213	SEMESTER 2	SESSION 2020/2021

DITP 2213 SYSTEM ANALYSIS AND DESIGN (3, 2, 2)
TYPE OF COURSE: C
UPDATED: 01-06-2020

1.0 COURSE LEARNING OUTCOMES

Upon completion of this subject, the student should be able to:

- CLO1: Explain the information systems and system development methodology. (C3)(PLO1)
- CLO2: Manipulate several tools and techniques to plan, analyse and design a new system. (P3)(PLO2)
- CLO3: Apply the waterfall methodology to develop a system. (A3,CTPS3)(PLO5)

2.0 SYNOPSIS

In this course, students will be introduced to a variety of information systems. Then, this course explains the development methodology especially the Waterfall and Rapid Application Development (RAD). After that, it discusses the planning phase with a focus on project management and project identification. The analysis phase will emphasize on the determination of user requirements, Context Diagram, Data Flow Diagram (DFD) and Entity Relationship Diagram (ERD) in structuring user's needs. The design phase then discusses form design and report, database and interface design. Final phase of system development will cover the coding, testing and system maintenance.

3.0 PRE-REQUISITE

DITP1333

4.0 PRACTICAL

During the session, they will work on problems or exercises on specific topic related to the weekly lecture. They will also work on a case related to system development following the system development lifecycle methodology with

the emphasis on planning, analysis and design. The group will work on the case and submit the final report at the end of the semester.

Use Microsoft Visio software to draw DFD, Gantt Chart, PERT diagram and ERD.

5.0 REFERENCES

[1] Kenneth E. Kendall and Julie E. Kendall (2019), Systems Analysis and Design, 10th Edition, Pearson.

[2] Joseph S. Valacich and Joey F. George (2019) Modern Systems Analysis and Design, 9th Edition, Prentice Hall.

[3] Dennis A., Barbara, H. W. and Roberta M. Roth (2018) System Analysis & Design, 7th Edition, John Wiley & Sons, Inc.

[4] Joseph S. Valacich and Joey F. George (2015) Essentials of Systems Analysis and Design, 6th Edition, Prentice Hall.

6.0 COURSE IMPLEMENTATION

i. Lecture: 2 hrs per week for 14 weeks (Total = 28 hrs)
ii. Lab: 2 hrs per week for 14 weeks (Total = 28 hrs)

7.0 COURSE EVALUATION

Assessment Method	CLO 1	CLO 2	CLO 3	Scheme, Rubric / guideline
Quiz : 10%			QZ1-1 (5%) QZ2-1 (5%)	QZ1-1_Scheme.doc QZ2-1_Scheme.doc
Assignment : 20%		TG1-1 (10%) TG2-1 (10%)		TG1-1_Scheme.doc TG2-1_Scheme.doc
Mid-Term Exam : 25%	MT-1 (25%)			MT-1_Scheme.doc
Project : 15%			PRJ-1 (15%)	PRJ-1_Guideline.pdf
Final Exam : 30%	FE-1 (30%)			FE-1Scheme.doc
Total (100%)	**55%**	**20%**	**25%**	

8.0 STUDENT LEARNING TIME (SLT)

		Guided Learning Time				Independant Learning								Assessment Time				
Week	**CLO**	**L**	**T**	**P**	**O**	**L**	**T**	**P**	**O**	**F**	**T**	**A**	**O**	**F**	**T**	**A**	**O**	**SLT**
W1	1	2		2		1	0	1		0	0	0	0					6
W2	1	2		2		1	0	1		0	0	0	0					6
W3	1	2		2		1	0	1		0	0	0	0					6
W4	1,3	2		2		1	0	1		0	0	0	1					7
W5	1,2	2		2		1	0	1		0	0	2	0					8
W6	1	2		2		1	0	1		0	0	0	0					6
W7	1	2		2		1	0	1		0	0	0	5					11
W8	1,2,3	2		2		1	0	1		0	0	0	0					6
W9	1,2,3	2		2		1	0	1		0	0	2	0					8
W10	1,3	2		2		1	0	1		0	8	0	0		2			16
W11	1	2		2		1	0	1		0	0	0	1					7
W12	1	2		2		1	0	1		0	0	0	0					6
W13	1	2		2		1	0	1		0	0	0	0					6
W14	1	2		2		1	0	1		0	0	0	4				1	11
>W14										8	0	0	0	2				10
Overall		28	0	28	0	14	0	14	0	8	8	4	11	2	2	0	1	120
															SLT Credit Equivalent			**3**

9.0 DETAILED SYLLABUS AND TEACHING PLAN

Week	Sessions	Contents	References	Delivery Method
1	Lecture 1	**Information Systems Analysis And Design** • The impact of information technology • The role of systems analysis and design • The systems analyst position • Information system components • Types of information systems **Systems Acquisition** • Outsourcing • Six major sources of software	[1] Chapter 1	Online Lecture
	Lab 1	• Briefing on academic rules and regulation • Team formation • Briefing on case and submission • Briefing on other assessments		Online Lab Activity
2	Lecture 2	**Developing Information Systems: System Development Lifecycle (SDLC)** • Phase 1: System Planning and selection • Phase 2: System Analysis • Phase 3: System Design • Phase 4: System Implementation • Phase 5: System Maintenance	[1] Chapter 1	Online Lecture
	Lab 2	• Lab Exercise (SDLC)		Online Lab Activity
3	Lecture 3	**Different Approaches to Improving Development** • Waterfall • Other approaches: Prototyping, Rapid Application Development (RAD) and Agile Methodologies	[1] Chapter 6	Online Lecture
	Lab 3	Lab Exercise (Selecting appropriate approach for system development)		Online Lab Activity

4	Lecture 4	**Managing Information System (IS) Development Project (Part 1)** • Project Management Activities • Project Scheduling (Gantt Chart)	[1] Chapter 3	Online Lecture
	Lab 4	Lab Exercise (Preparing Gantt Chart)		Online Lab Activity
5	Lecture 5	**Managing Information System (IS) Development Project (Part 2)** • Project Evaluation Review Technique (PERT) diagram	[1] Chapter 3	Online Lecture
	Lab 5	Lab Exercise (Preparing PERT diagram)		Online Lab Activity
6	Lecture 6	**Identifying and Selecting Systems Development Projects** • Identifying projects for system development • Project selection Assessing Project • Feasibility **Initiating and Planning Systems Development Projects**	[1] Chapter 2	Online Lecture
	Lab 6	• Lab Exercise (Project selection)		Online Lab Activity
7	Lecture 7	**Determining systems requirements** • Interview and Listening • Observation • Business documents	[1] Chapter 4 & Chapter 5	Online Lecture
	Lab 7	• Lab Exercise (Determining system requirements)		Online Lab Activity
8	Lecture 8	**Structuring Process Requirements (Part 1)** • Define process modeling • Representing process using Data Flow • Diagram (DFD) • Context Diagram • DFD symbols and definitions • DFD diagramming rules	[1] Chapter 7	Online Lecture

	Lab 8	Lab Exercise (Preparing DFD)		Online Lab Activity
9		**MID SEMESTER BREAK**		
10	Lecture 9	**Structuring Process Requirements (Part 2)** • Decomposition of DFDs • Balancing DFDs • Decomposing DFD Constructing Level 0 and lower levels DFD	[1] Chapter 7	Online Lecture
	Lab 9	Lab Exercise (Preparing DFD)		Online Lab Activity
11	Lecture 10	**Structuring Data Requirements** • Requirements for Data Modeling • Entity Relationship Diagram (ERD) • Enhanced Entity Relationship Diagram (EERD) • Notations for ERD/EERD entities, attributes, relationship, cardinality, supertype, subtype, subtype discriminator, partial/complete constraint, joint/overlap constraint	[1] Chapter 8	Online Lecture
	Lab 10	• Lab Exercise (Preparing ERD & EERD)		Online Lab Activity
12	Lecture 11	**Designing Database** • Database design • Relational database model	[1] Chapter 13	Online Lecture
	Lab 11	• Lab Exercise (Designing database)		Online Lab Activity
13	Lecture 12	**Designing Input** • Input design concept, methods, internal data controls, input design concepts **Designing Output** • Output design concept, guidelines and process	[1] Chapter 12 [1] Chapter 11	Online Lecture
	Lab 12	• Lab Exercise (Designing input and output)		Online Lab Activity

14	Lecture 13	**Designing Interface** • Method of interacting (Command Language, Menu, Form, Object-Based and Natural Language) • Hardware options for system interaction • Designing layouts • Structuring data entry • Providing feedback • Providing help **Designing Dialogue** • Designing the dialogue sequence • Building Prototypes and Assessing Usability	[1] Chapter 14 & Chapter 15	Online Lecture
	Lab 13	• Lab Exercise (Designing interface and dialogue)		Online Lab Activity
15	Lecture 14	**Software Quality Assurance and Implementation** • The total quality management approach (six sigma, responsibility for total quality management and structured walkthrough) • Documentation approaches • System implementation, testing, maintenance and auditing • Training/support users (training strategies and guideline for training)	[1] Chapter 16	Online Lecture
	Lab 14	• Lab Exercise (Quality assurance)		Online Lab Activity
16		**STUDY WEEK**		
17 & 18		**FINAL EXAMINATION**		

10.0 MATRIX OF LEARNING OUTCOMES

COURSE vs PROGRAM LEARNING OUTCOME (PLO)

COURSE	PROGRAM LEARNING OUTCOME (PLO)								
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	
DITP2213	X	X			X				

COURSE LEARNING OUTCOME (CLO) vs PROGRAM OUTCOME (PO)

CLO	PROGRAM LEARNING OUTCOME (PLO)								
CLO1	X								
CLO2		X							
CLO3					X				

COURSE LEARNING OUTCOME (CLO)

CLO1	Explain the information systems and system development methodology (C3)(PLO1)
CLO2	Manipulate several tools and techniques to plan, analyse and design a new system (P3)(PLO2)
CLO3	Apply the waterfall methodology to develop a system (A3, CTPS3)(PLO5)

COURSE vs SOFT SKILLS

Subject	SOFT SKILLS																							
	communication skill					critical thinking & problem solving					team work			lifelong learning			entrepreneurship skills			Ethics & moral professionalism			leadership skills		
	CS 1	CS 2	CS 3	CS 4	CS 5	CTPS 1	CTPS 2	CTPS 3	CTPS 4	CTPS 5	TS 1	TS 2	TS 3	LL 1	LL 2	LL 3	ES 1	ES 2	ES 3	EM 1	EM 2	EM 3	LS 1	LS 2	LS 3
DITP 2213								X																

COURSE LEARNING OUTCOME (CLO) vs SOFT SKILLS

CLO	SOFT SKILLS																							
	communication skill					critical thinking & problem solving					team work			lifelong learning			entrepreneurship skills			ethics & moral professionalism			leadership skills		
	CS 1	CS 2	CS 3	CS 4	CS 5	CTPS 1	CTPS 2	CTPS 3	CTPS 4	CTPS 5	TS 1	TS 2	TS 3	LL 1	LL 2	LL 3	ES 1	ES 2	ES 3	EM 1	EM 2	EM 3	LS 1	LS 2	LS 3
CLO1																								
CLO2																								
CLO3								X																

COURSE vs TAXONOMY

Course	Taxonomy																
	Affective					Cognitive						Psychomotor					
	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	P1	P2	P3	P4	P5	P6	P7
DITP 2213	X	X	X			X	X	X				X	X	X				

COURSE LEARNING OUTCOME (CLO) vs TAXONOMY

CLO	Taxonomy																
	Affective					Cognitive						Psychomotor					
	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	P1	P2	P3	P4	P5	P6	P7
CLO1						X	X	X										
CLO2												X	X	X				
CLO3	X	X	X															

TEACHING PLAN APPROVAL

Prepared by:

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Name: Nor Mas Aina Md Bohari

Stamp:

Date: 5 March 2021

Approved by:

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Dean/Deputy Dean (Academic)/HOD

Stamp:

Date: 8 March 2021

TEACHING PLAN IMPLEMENTATION (MID SEMESTER BREAK)

Comment:

Checked by:

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Dean/Deputy Dean (Academic)/HOD

Stamp: Date: _____

TEACHING PLAN IMPLEMENTATION (WEEK 16)

Comment:

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Dean/Deputy Dean (Academic)/HOD

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