Universitas Alma Ata The Globe Inspiring University	**ALMA ATA UNIVERSITY** **FACULTY OF COMPUTER AND ENGINEERING** **BACHELOR OF INFORMATICS ENGINEERING STUDY PROGRAM**	

SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Software Engineering	FKOM001	Project Management; Software Engineering;	T [Theory] = 3	P[Practice] = 0	(4) Four	23 August 2023

RESPONSE	**Semester Learning Plan Developer**	**Study Material Coordinator**	**Head of study programme**
	Wahit Desta Prastowo, S.Kom.,M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	**SLOs that are imposed on MKs**	
	CPL04	Have the competence to analyse complex computing problems to identify solutions for technology project management in the field of informatics/computer science by considering the insights of transdisciplinary science development.
	Course Learning Outcomes (CPMK)	
	CPMK042	Able to analyse technology project management solutions in the field of informatics/computer science by considering the insights of transdisciplinary science development.
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK042	Able to analyse technology project management solutions in the field of informatics/computer science by considering the insights of transdisciplinary science development.	CPL04

Brief description of the course	This Software Engineering course provides students with an understanding and mastery of various Process Models. in Software Engineering such as Waterfall Model, Prototyping Model, RAD Model, and Evolutionary Process Models (Incremental and Spiral). Model), Analysis Modeling, Design Model, Object Oriented Analysis and Design (OOAD), Testing Strategies, and Software Testing Method.
Study Material: Learning Materials	BK03 - Project Management BK20 - Software Engineering

Library	**Main:**	
	1. R. Y. Lee, Software Engineering: A Hands-ON Approach, Atlantis Press, 2013. 2. T. Winters, T. Manshreck, and H. Wright, Software Engineer at Google, O'Reilly Media, 2020. 3. G. K. Thiruvathukal, et al, Software Engineering for Science, CRC Press, 2016. 4. R. J. Leach, Introduction to Software Engineering, CRC Press, 2018. 5. Kendall, System Analysis and Design, 8th edition, 2013.	
	Supporters:	
	-	

Lecturer	Wahit Desta Prastowo, S.Kom.,M.Kom
Prerequisite Courses	-

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)			(7)	(8)
1	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Students' ability to discuss an introduction to software engineering and its dimensions.	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
2	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand the meaning of observation in estimation, purpose of project planning, scope, cost, requirements project resources and estimates.	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
3	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	ability to explain the meaning of requirements analysis, some communication techniques, principles of analysis, software prototype model, specifications software requirements.	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	10
4	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand the types of SDLC methods that exist and explain their advantages and disadvantages shortcomings of each method	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	10
5	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand the types of SDLC methods that exist and explain their advantages and disadvantages shortcomings of each method.	Practical Results; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3,4,5	10
6	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand the complete activity of system engineering and examples activities	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	10
7	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand complete activities from requirements engineering and example of activities.	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3,4,5	10
8	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand software design concepts	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
9	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	K Ability to understand software design concepts	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5

10	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand the meaning of software architecture, the importance of software architecture design, data modelling, and design. interface and procedural design	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
11	Sub-CPMK0421 - Ability to identify informatics technology project management solutions / computer science.	Ability to understand the meaning of software architecture, the importance of software architecture design, data modelling, and design. interface and procedural design	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
12	Sub-CPMK0422 - Ability to manage technology project solutions in the field of informatics / computer science with insight into the development of transdisciplinary science.	Ability to understand the basics of software testing, test case design, software testing using white box and black box testing	Presentation Quality; Performance	Student centred learning	Asynchronous	1,2,3,4,5	10
13	Sub-CPMK0422 - Ability to manage technology project solutions in the field of informatics / computer science with insight into the development of transdisciplinary science.	Ability to understand strategic approaches to Software testing, unit testing, integration, validation and system, software debugging.	Quality of Presentation; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	10
14	Sub-CPMK0422 - Ability to manage technology project solutions in the field of informatics / computer science with insight into the development of transdisciplinary science.	Ability to understand the OOSE requirements model	Accuracy of UAS Answers; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3,4,5	10

SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Web Programming	FKOM006	User Experience Design ; Programming Languages ; Software Engineering ; Systems Analysis & Design;	T [Theory] = 2	P [Practice] = 1	(4) Four	10 January 2024

RESPONSE	**Semester Learning Plan Developer**	**Study Material Coordinator**	**Head of study programme**
	Dita Danianti, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom

Learning Outcomes	**SLOs that are imposed on MKs**	
	CPL08	Ability to implement computing requirements by considering various appropriate methods/algorithms.
	CPL09	Ability to analyse, design create and evaluate user interfaces and interactive applications by considering user needs and transdisciplinary science developments.
	Course Learning Outcomes (CPMK)	
	CPMK092	Able to create user interfaces and interactive applications
	CPMK083	Able to evaluate efficient computing requirements as needed.
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK092	Able to create user interfaces and interactive applications	CPL09
CPMK083	Able to evaluate efficient computing requirements as needed.	CPL08

Brief description of the course	Advanced Web Programming course is one of the courses that is required for provides students with an understanding of how a collection of information is stored in a computer systematically so that it can be examined using a computer programme to obtain information from the database.
Study Material: Learning Materials	server side, client side, Javascript, PHP basic structure, condition and loop, model view controller, form handling, arrays and functions, strings and dates, directory files, database connections, session and cookies management, creating a web with PHP and MySQL.
Library	**Main:**
	1. R. Abdulloh, 2018. 7 in 1 Advanced Web Programming, Yogyakarta: Elex Media Computindo.
	Supporters:
	2. A. N. Asyikin, 2018. Web Programming, Yogyakarta: Deepublish. 3. M. Y. H. Setyawan and C. E. Prawiro, 2020. CodeIgniter: Implementation of Entropy Method in PHP Programming (Learning with Practice), Kreatif Industri Nusantara.
Lecturer	Dita Danianti, S.Kom., M.Kom
Prerequisite Courses	Web Programming Basics

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)			(7)	(8)
1	CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Students are able to: explain the difference between server side and client side	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
2	CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Students are able to implement Javascript.	Quality of Presentation; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3	5
3	CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Students are able to explain and apply arrays	Presentation Quality; Performance	Student centred learning	Asynchronous	1,2,3	10
4	CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Students are able to understand and apply the	Presentation Quality; Performance	Student centred learning	Asynchronous	1,2,3	10
5	CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Students are able to explain and apply strings and dates.	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	7
6	CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Students are able to explain the basic structure of PHP	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	7
7	CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Students are able to apply looping in PHP	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	6
8	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to understand the concept of MVC	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
9	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to apply the concept of MVC	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
10	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to apply database connections.	Presentation Quality; Performance	Student centred learning	Asynchronous	1,2,3	10
11	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to create input forms, input files, output file directories and store in the base.	Accuracy of Answer; Performance	Student centred learning	Asynchronous	1,2,3	10

12	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to understand the concept of sessions and cookies	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	5
13	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to implement the concept of sessions and cookies	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	5
14	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to apply PHP and MySQL in accordance with their respective case studies	Accuracy of UAS Answers; Observation (Practice / Assignment)	Student centred learning	Asynchronous	1,2,3	10

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SEMESTER LEARNING PLAN						

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Operating System	FKOM008	Operating Systems ; Data Structures, Algorithms and Complexity;	T [Theory] = 2	P [Practice] = 1	(4) Four	2 August 2021

RESPONSE	Semester Learning Plan Developer	Study Material Coordinator	Head of study programme
	Deden Hardan Gutama, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	SLOs that are imposed on MKs	
	CPL03	Have adequate knowledge of how computer systems work and be able to apply/use various algorithms/methods to solve problems in an organisation.
	Course Learning Outcomes (CPMK)	
	CPMK031	Able to understand how computer systems work
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK031	Able to understand how computer systems work	CPL03

Brief description of the course	The material taught includes computer systems, computer operating system structure, processes and threads, cpu scheduling, synchronisation, deadlocks, memory management and storage media, as well as protection and security systems.
Study Material: Learning Materials	Operating Systems, Data Structures, Algorithms and Complexity
Library	**Main:**
	1. Andrew S. Tanenbaum, Modern Operating Systems, Prentice Hall, 2007. 2. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Operating System Concepts With Java, Wiley. 3. Andrew S. Tanenbaum, Operating Systems Design and Implementation, 3rd Edition New Jersey: Prentice Hall, Inc. 2006. 4. Operating System Practicum Module.
	Supporters:
	1. Linux Operating System Manual Book & How-to for Various Distros 2. Windows Operating System Manual Book & How-to
Lecturer	Deden Hardan Gutama, S.Kom., M.Kom
Prerequisite Courses	Computer Organisation and Architecture

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Sub-CPMK0311 Ability to understand how computer systems work	Can understand memory, memory usage, and memory allocation techniques.	Accuracy of Test Answers; Participation (Attendance/Quiz)	StudentLearning Centre	Asynchronous	1	5
2	Sub-CPMK0311 Ability to understand how computer systems work	Can learn about synchronisation and deadlock	Accuracy of Test Answers; Observation (Practice / Assignment)	Student-Learning Centre	Asynchronous	2	5
3	Sub-CPMK0311 Ability to understand how computer systems work	Able to understand the basic structure of computer systems and computer operating systems as well as their development and functions.	Accuracy of Test Answers; Performance	Student-Learning Centre	Asynchronous	1,2	5
4	Sub-CPMK0311 Ability to understand how computer systems work	Can understand the basic concepts of processor management and inter-process communication, and processes in distributed systems.	Accuracy of Answer; Observation (Practice/Task)	Student-Learning Centre	Asynchronous	2,3	5
5	Sub-CPMK0311 Ability to understand how computer systems work	Can understand the basic concepts of processor management and communication between processes, and processes	Accuracy of Quiz Answers; Participation (Attendance/Quiz)	Student-Learning Centre	Asynchronous	1	0
6	Sub-CPMK0311 Ability to understand how computer systems work	Can understand various single-level and multilevel processor scheduling techniques, as well as scheduling evaluation methods.	Quality of Presentation; Observation (Practical/Assignment)	Problem-Learning Centre Asynchronous	Asynchronous	4	5
7	Sub-CPMK0311 Ability to understand how computer systems work	Can understand various single-level and multilevel processor scheduling techniques, as well as scheduling evaluation methods.	Accuracy of Answer; Observation (Practice/Task)	Student-Learning Centre	Student-Learning Centre or	3	5
8	Sub-CPMK0311 Ability to understand how computer systems work	Can understand memory, memory usage, and memory allocation techniques.	Accuracy of UTS Answers; Written Test (UTS)	Problem-Learning Centre	Asynchronous	1-4	15
9	Sub-CPMK0311 Ability to understand how computer systems work	Able to understand digital literacy	Accuracy of UAS Answers; Observation (Practice / Assignment)	Student-Learning Centre	Asynchronous	1	10

10	Sub-CPMK0311 Ability to understand how computer systems work	Can understand memory, memory usage, and memory allocation techniques.	Accuracy of UAS Answers; Observation (Practice / Assignment)	Student-Learning Centre	Asynchronous	2	5
11	Sub-CPMK0311 Ability to understand how computer systems work	Can understand memory, memory usage, and memory allocation techniques.	Accuracy of UAS Answers; Oral Test (Group Assignment)	Problem-Learning Centre	Asynchronous	3,4	5
12	Sub-CPMK0311 Ability to understand how computer systems work	Can learn about synchronisation and deadlock	Accuracy of Quiz Answers; Observation (Practice / Assignment)	Student-Learning Centre	Asynchronous	3,4	10
13	Sub-CPMK0311 Ability to understand how computer systems work	Can learn about synchronisation and deadlock	Accuracy of UAS Answers; Observation (Practice / Assignment)	Problem-Learning Centre	Asynchronous	1,2,3,4	10
14	Sub-CPMK0311 Ability to understand how computer systems work	Ability to understand operating systems and what they involve	Accuracy of UAS Answers; Written Test (UAS)	Problem-Learning Centre	Asynchronous	1,2,3,4	20

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FACULTY OF COMPUTER AND ENGINEERING
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	ALMA ATA UNIVERSITY FACULTY OF COMPUTER AND ENGINEERING BACHELOR OF INFORMATICS ENGINEERING STUDY PROGRAM	
	SEMESTER LEARNING PLAN	

COURSE (MK)	**CODE**	**Study Material (BK)**	**WEIGHT (credits)**		**SEMESTER**	**Date of Preparation**
Automata Language Theory	INF019	Programming Fundamentals; Computing Systems Fundamentals;	T [Theory] = 3	P[Practice] = 0	(4) Four	25 January 2024

RESPONSE	**Semester Learning Plan Developer**	**Study Material Coordinator**	**Head of study programme**
	Dita Danianti, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	**SLOs that are imposed on MKs**	
	CPL03	Have adequate knowledge of how computer systems work and be able to apply/use various algorithms/methods to solve problems in an organisation.
	Course Learning Outcomes (CPMK)	
	CPMK031	Able to understand how computer systems work
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK031	Able to understand how computer systems work	CPL03

Brief description of the course	This course provides a detailed explanation of computing cloud or commonly known as Automata Language Theory. Through this course, students will be able to explain the definition of cloud computing, and be able to build a cloud computing infrastructure.
Study Material: Learning Materials	Introduction to Automata Language, Set Theory, Functions and Relations, Theory and Proof, Logic, Graph and tree and Chomsky Hierarchy, Deterministic Finite State Automata (DFA), Nondeterministic Finite State Automata (NFA), Regular Expressions (ER), Decline trees, Simplification of context-free grammars, Chomsky (Chomsky Normal Form), Push Down Automata, Turing Machines
Library	**Main:**
	1. Bambang Hariyanto, Ir., MT, Theory of Language and Automata, and Computation and its application, Informatics Bandung 2004
	Supporters:
	2. Firrar Utdirartatmo, Language Theory and Automata, Graha Ilmu 2001 3. Hopcroft John E., Rajeev Motwani, Jeffrey D. Ullman, Introduction to Automata Theory, Languages, and Computation, 2nd edition, Addison-Wesley, 2000
Lecturer	Dita Danianti, S.Kom., M.Kom
Prerequisite Courses	-

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)			(7)	(8)
1	CPMK0311 - Ability to understand how computer systems work	Students are able to understand Automata Language, Set Theory, Functions and Relations, Theory and Proof, Logic, Graph and Tree, Chomsky's Hierarchy	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
2	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Finite State Automata, Deterministic Finite State Automata (DFA)	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
3	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Nondeterministic Finite State Automata (NFA)	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
4	CPMK0311 - Ability to understand how computer systems work	Students are able to explain DFA and NFA Equivalence	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
5	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Regular Expression (ER), Regular Expression Notation, Relationship between Regular Expression and FSA, FSA for an ER grammar	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
6	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Finite State Automata with output, Mealy Machine, Moore Machine	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
7	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Context-free grammar, Derivation tree, Simplification of context-free grammar	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
8	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Chomsky Normal Form	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
9	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Left Recursive Removal	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
14	CPMK0311 - Ability to understand how computer systems work	Students are able to explain about turing and unrestricted languages and produce language structures	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10
10	CPMK0311 - Ability to understand how computer systems work	Students are able to explain Greibach Normal Form	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
11	CPMK0311 - Ability to understand how computer systems work	Students are able to explain and simplify a CFG	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5

12	CPMK0311 - Ability to understand how computer systems work	Students are able to explain greibach normal form (GNF)	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10
13	CPMK0311 - Ability to understand how computer systems work	Students are able to design PDA (Push Down Automata) from a language	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10

	ALMA ATA UNIVERSITY FACULTY OF COMPUTER AND ENGINEERING BACHELOR OF INFORMATICS ENGINEERING STUDY PROGRAM	

Universitas Alma Ata
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SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Interface Design and User Experience	INF038	User Experience Design; Human-Computer Interaction;	T [Theory] = 2	P [Practice] = 1	(4) Four	27 June 2023

RESPONSE	Semester Learning Plan Developer	Study Material Coordinator	Head of study programme
	Deden Hardan Gutama, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	SLOs that are imposed on MKs	
	CPL09	Ability to analyse, design create and evaluate user interfaces and interactive applications by considering user needs and transdisciplinary science developments.
	Course Learning Outcomes (CPMK)	
	CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.
	CPMK083	Able to evaluate efficient computing requirements as needed.
	CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.
	CPMK092	Able to create user interfaces and interactive applications
	CPMK122	Able to demonstrate entrepreneurial spirit, independence, and leadership based on values, norms, and ethics as well as professionalism and responsibility.
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.	CPL09
CPMK083	Able to evaluate efficient computing requirements as needed.	CPL09
CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.	CPL09
CPMK092	Able to create user interfaces and interactive applications	CPL09
CPMK122	Able to demonstrate entrepreneurial spirit, independence, and leadership based on values, norms, and ethics as well as professionalism and responsibility.	CPL09

Brief description of the course	The course Interface Design and User Experience is a fundamental material in Informatics. Interface Design and User Experience is a course that teaches students about how Human Computer Interaction and its role in realising software that is appropriate and useful for its users. In this course, it is also conveyed about the stages in the process of designing user interfaces.	
Study Material: Learning Materials	User Experience Design, and Human-Computer Interaction	
Library	**Main:**	
	1. A. N. Asyikin, 2018. Interface Design and User Experience, Yogyakarta: Deepublish. 2. A. S. B. Nugroho, 2019.Interface Design and User Experience (Arrays, Functions and Crud with CodeIginiter, Banjarmasin: POLIBAN Press. 3. R. Abdulloh, 2018. 7 in 1 Interface Design and User Experience, Yogyakarta: Elex Media Computindo. 4. Dean, 2018. Web Programming with HTML5, CSS, and JavaScript, Jones & Barlett Learning. Practice), Kreatif Industri Nusantara.	
	Supporters:	
	1. M. Y. H. Setyawan and C. E. Prawiro, 2020. CodeIgniter: Implementation of Entropy Method in PHP Programming (Learning with	
Lecturer	Deden Hardan Gutama, S.Kom., M.Kom	
Prerequisite Courses	Human and Computer Interaction (HCI)	

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Sub-CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Able to explain the need to study Human and Computer Interaction and understand the characteristics of GUI and Web UI	Accuracy of Answer; Observation (Practice/Task)	Student-Learning Centre	Asynchronous	1,2,3,4	5
2	Sub-CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Able to explain and implement methods in designing User Interface	Practical Results; Written Test (UTS)	Student-Learning Centre	Asynchronous	1,2,3	5
3	Sub-CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Able to Define User Characteristics	Accuracy of Answer; Observation (Practice/Task)	Student-Learning Centre	Asynchronous	1,2	0
4	Sub-CPMK0911 - Ability to analyse and redesign user interfaces in interactive software applications	Able to model User Task	Accuracy of Answers; Written Test (UTS)	Problem-Learning Centre	Asynchronous	1	5
5	Sub-CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Able to Apply UI Principles	Practical Results; Observation (Practical/Assignment)	Problem-Learning Centre	Asynchronous	1,3	5
6	Sub-CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Able to design menu structure	Accuracy of Answers; Written Test (UTS)	Problem-Learning Centre	Asynchronous	1,2,3	5
7	Sub-CPMK0911 - Ability to analyse and redesign user interfaces in interactive software applications	Able to select and apply screen - based controls that are appropriate to the requirements	Accuracy of Answer; Performance	Student-Learning Centre	Asynchronous	1,3,4	0
8	Sub-CPMK1221 - Able to demonstrate entrepreneurial spirit, independence, and leadership	Able to design feedback, guidance, and assistance with Effective	Accuracy of UTS Answers; Written Test (UTS)	Problem-Learning Centre	Asynchronous	1,2,3,4	15
9	Sub-CPMK0911 - Ability to analyse and redesign user interfaces in interactive software applications	UI Design Process Step 11 and 12 using Graphics, Icons, Images and Colours	Practical Results; Written Test (UAS)	Problem-Learning Centre	Asynchronous	2,3	10
10	Able to demonstrate an attitude based on values, norms, and ethics as well as professionalism and responsibility	Students understand Icons & Graphics, Multimedia, Use of Colour, Problems that may appear with colour	Accuracy of Answer; Observation (Practice/Task)	Student-Learning Centre	Asynchronous	3,2	5
11	Sub-CPMK0911 - Ability to analyse and redesign user interfaces in interactive software applications	UI Design Process Step 13 Organising and arranging windows and pages	Quality of Presentation; Observation (Practical/Assignment)	Student-Learning Centre	Asynchronous	1,2,4	10

12	Sub-CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	UI Design Process Step 14 Usability Testing Heuristics	Accuracy of UAS Answers; Observation (Practice / Assignment)	Student-Learning Centre	Asynchronous	1,2,4	15
13	Sub-CPMK0831 - Ability to evaluate solutions for efficient software projects as required.	Walk - through evaluation	Accuracy of UAS Answers; Written Test (UAS)	Student-Learning Centre	Asynchronous	1,2,3,4	10
14	Able to demonstrate an attitude based on values, norms, and ethics as well as professionalism and responsibility	Web Accessibility Evaluation	Accuracy of UAS Answers; Written Test (UAS)	Problem-Learning Centre	Asynchronous	1,2,3,4	10

	ALMA ATA UNIVERSITY **FACULTY OF COMPUTER AND ENGINEERING** **BACHELOR OF INFORMATICS ENGINEERING STUDY PROGRAM**	

SEMESTER LEARNING PLAN

COURSE (MK)	**CODE**	**Study Material (BK)**	**WEIGHT (credits)**		**SEMESTER**	**Date of Preparation**
Data Visualisation	INF045	Data and Information Management ; Graphics and Visualisation ;	T [Theory] = 3	P[Practice] = 0	(4) Four	11 January 2024

RESPONSE	**Semester Learning Plan Developer**	**Study Material Coordinator**	**Head of study programme**
	Dita Danianti, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	**SLOs that are imposed on MKs**	
	CPL03	Have adequate knowledge of how computer systems work and be able to apply/use various algorithms/methods to solve problems in an organisation.
	Course Learning Outcomes (CPMK)	
	CPMK031	Able to understand how computer systems work
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK031	Able to understand how computer systems work	CPL03

Brief description of the course	This data visuals course communicates information clearly and efficiently. to users through selected information graphics such as tables and graphs. Effective visualisation helps users in analysing and reasoning about data and evidence. Making complex data accessible, understandable and useful. Users can perform specific analytical work, such as performing comparisons or understanding clausality and the design principles of the graph (e.g., showing comparisons or causality) follow from that work.
Study Material: Learning Materials	Understanding data visualisation, designing data visualisation, types of graphs, presenting data
Library	**Main:**
	1. Telea, Alexandru C. Data visualisation: principles and practice. CRC Press, 2014.
	Supporters:
	1. Susanto, ABe, I. Wayan Warmada, PANDU Team, and I. Made Wiryana. "Gnuplot for the Innocent." St Pauli (2000). 2. Jolly, Kevin. Hands-On Data Visualisation with Bokeh: Interactive Web Plotting for Python Using Bokeh. Packt Publishing Ltd, 2018.
Lecturer	Dita Danianti, S.Kom., M.Kom
Prerequisite Courses	-

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)			(7)	(8)
1	CPMK0311 - Ability to understand how computer systems work	- Students are able to explain correctly about visual data. - Students are able to filter, group and summarise a database	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
2	CPMK0311 - Ability to understand how computer systems work	Students are able to record information, analyse data to support reassessment and communicate information to others.	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
3	CPMK0311 - Ability to understand how computer systems work	Students are able to build visualisation reference models and design visual coding spaces	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
4	CPMK0311 - Ability to understand how computer systems work	Students are able to visualise the formal form data and design considerations.	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
5	CPMK0311 - Ability to understand how computer systems work	Students are able to analyse data density and small multiples, in visual display of quantitative information	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
6	CPMK0311 - Ability to understand how computer systems work	Students are able to change data, visual coding variables and parallel coordinates	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
7	CPMK0311 - Ability to understand how computer systems work	Concept introduction to types of data visualisation charts	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
8	CPMK0311 - Ability to understand how computer systems work	Students are able to understand the concept of how to present data with a strong narrative	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
9	CPMK0311 - Ability to understand how computer systems work	Data visualisation concepts using linear and area graphs	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
10	CPMK0311 - Ability to understand how computer systems work	Data visualisation concepts using pie and donut charts	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
11	CPMK0311 - Ability to understand how computer systems work	Conceptualise data visualisation using heatmaps and tree maps.	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
12	CPMK0311 - Ability to understand how computer systems work	Students are able to visualise facet data into several views	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10

13	CPMK0311 - Ability to understand how computer systems work	Students are able to design visualisation of a case	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10
14	CPMK0311 - Ability to understand how computer systems work	Students are able to design visualisation of a case	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10

<table>
<tr><td rowspan="3">Universitas Alma Ata
The Globe Inspiring University</td><td colspan="5">ALMA ATA UNIVERSITY

FACULTY OF COMPUTER AND ENGINEERING
BACHELOR OF INFORMATICS ENGINEERING STUDY PROGRAM</td><td></td></tr>
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Universitas Alma Ata *The Globe Inspiring University*	**ALMA ATA UNIVERSITY** **FACULTY OF COMPUTER AND ENGINEERING** **BACHELOR OF INFORMATICS ENGINEERING STUDY PROGRAM**					

SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Deep Learning	INF049	Computing Systems Fundamentals ; Intelligent Systems ;	T [Theory] = 3	P[Practice] = 0	(4) Four	29 December 2023

RESPONSE	Semester Learning Plan Developer	Study Material Coordinator	Head of study programme
	Andri Pramuntadi, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	SLOs that are imposed on MKs	
	CPL03	Have adequate knowledge of how computer systems work and be able to apply/use various algorithms/methods to solve problems in an organisation.
	CPL04	Have the competence to analyse complex computing problems to identify solutions for technology project management in the field of informatics/computer science by considering the insights of transdisciplinary science development.
	Course Learning Outcomes (CPMK)	
	CPMK032	Able to apply/use various methods/algorithms in solving problems in an organisation
	CPMK041	Able to identify complex computing problems
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK032	Able to apply/use various methods/algorithms in solving problems in an organisation	CPL03
CPMK041	Able to identify complex computing problems	CPL04

Brief description of the course	This course invites students to understand the basic ideas, intuition, concepts, algorithms and techniques to make a computer into a machine. more intelligent. Emphasis on basic supervised, unsupervised, and reinforcement learning techniques.
Study Material: Learning Materials	Bayes Classifier, Naive Bayes, Decision Tree, Artificial Neural Network, Kohonen Network, Self Organisation Map, K-Means, K-NN, Q-Learning.
Library	**Main:**
	Goodfellow, I; Bengio, Y.; Courville, A (2016). Deep Learning. MIT Press
	Supporters:
	Lecturer dictates and quiz assignments
Lecturer	Andri Pramuntadi, S.Kom., M.Kom
Prerequisite Courses	-

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Sub-CPMK0321 - Fundamentals of Applied Mathematics and Machine Learning	Able to explain the concept of Machine Learning	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Introduction to Machine Learning with deep learning	5
2	Sub-CPMK0321 - Fundamentals of Applied Mathematics and Machine Learning	Able to explain the concept of Naive Bayes	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Naive Bayes	5
3	Sub-CPMK0321 - Fundamentals of Applied Mathematics and Machine Learning	Explain the concepts of Decision Tree and Random Forest	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Decision Tree	5
4	Sub-CPMK0321 - Fundamentals of Applied Mathematics and Machine Learning	Explain the concepts of Decision Tree and Random Forest	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Random Forest	5
5	Sub-CPMK0321 - Fundamentals of Applied Mathematics and Machine Learning	able to explain the meaning and role of KNN	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	K-Nearest Neighbours Algorithm	5
6	Sub-CPMK0322 - Deep Networks: Modern Practices	Able to explain the concept of K-Means	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	K-Means	5
7	Sub-CPMK0322 - Deep Networks: Modern Practices	Able to describe the implementation of Machine Learning	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Application of Machine Learning	3
8	Sub-CPMK0321 - Fundamentals of Applied Mathematics and Machine Learning		Accuracy of Answers; Written Test (UTS)	Written Test			25
9	Sub-CPMK0322 - Deep Networks: Modern Practices	Able to explain Explain the concept of Deep Learning	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Deep Learning	0
10	Sub-CPMK0322 - Deep Networks: Modern Practices	able to explain CNN concept	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	CNN	5
11	Sub-CPMK0322 - Deep Networks: Modern Practices	able to explain CNN concept	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Deciphering the process on CNN	3
12	Sub-CPMK0322 - Deep Networks: Modern Practices	able to Explain the concept of RNN	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Recurrent Neural Network	5
13	Sub-CPMK0323 - Deep Learning Research	Explaining the concept of RNN	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	process on RNN	5
14	Sub-CPMK0323 - Deep Learning Research	Able to understand the concept of LSTM	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Long Short-Term Memory Networks	5

15	Sub-CPMK0323 - Deep Learning Research	Describe the implementation process of Deep Learning using the Python language	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Outline the implementation of Deep Learning	3
16	Sub-CPMK0323 - Deep Learning Research		Accuracy of UAS Answers; Written Test (UAS)	Written Test			30

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SEMESTER LEARNING PLAN						
COURSE (MK)	**CODE**	**Study Material (BK)**	**WEIGHT (credits)**		**SEMESTER**	**Date of Preparation**
Digital Forensic	INF051	Security Policy and Management; Security Issues and Principles;	T [Theory] = 3	P[Practice] = 0	(4) Four	20 August 2023

RESPONSE	**Semester Learning Plan Developer**	**Study Material Coordinator**	**Head of study programme**
	Deden Hardan Gutama, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	**SLOs that are imposed on MKs**		
	CPL01	Pious to God Almighty, law-abiding, and disciplined in social and state life.	
	CPL03	Have adequate knowledge of how computer systems work and be able to apply/use various algorithms/methods to solve problems in an organisation.	
	Course Learning Outcomes (CPMK)		
	CPMK012	Able to run APPLY social life of society based on applicable legal rules and norms.	
	CPMK031	Able to understand how computer systems work	
	End ability of each learning stage (Sub-CPMK)		

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK012	Able to run APPLY social life of society based on applicable legal rules and norms.	CPL01
CPMK031	Able to understand how computer systems work	CPL03

Brief description of the course	This course provides an insight into the digital forensics framework. This framework covers digital forensic activities on computers, mobile devices, networks, CCTV, social media and other relevant digital devices. Students will learn how the investigation process must be carried out in accordance with forensic principles accepted by applicable laws and regulations as well as best practices that have been accepted by the forensic community in general.
Study Material: Learning Materials	1. Introduction to digital forensics and related professions 2. Forensic objects and evidence 3. Standards and procedures in digital forensics 4. Processes in handling information security incidents 5. Case study on a specific event
Library	**Main:**
	1. "Hacking Exposed Computer Forensics", Aaron Philips. 2. "Computer Hacking Forensics Investiagation", EC-Council 3. Marcella, Albert J., and Robert S. Greenfiled, "Cyber Forensics a field manual for collecting, examining, and preserving evidence of computer crimes", by CRC Press LLC, United States of America.
	Supporters:
	4. Eoghan Casey, "Digital Evidence and Computer Crime", 2nd ed. 5. Stalling, W., "Cryptography and Network Security", 7th Ed. 6. Stalling, W., "Computer Security", 3rd Ed.
Lecturer	Deden Hardan Gutama, S.Kom., M.Kom
Prerequisite Courses	-

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)			(7)	(8)
1	Sub-CPMK0311 - Ability to understand how computer systems work	Students understand the purpose and materials of computer forensics	Accuracy of Answers; Written Test (UTS)	Student-Learning Centre	Asynchronous	1,2	5
2	Sub-CPMK0311 - Ability to understand how computer systems work	Students understand the media which is used as a source of evidence	Accuracy of Quiz Answers; Participation (Attendance/Quiz)	Problem-Learning Centre	Asynchronous	1,2,3,4	5
3	Sub-CPMK0311 - Ability to understand how computer systems work	Students understand the functions, advantages and disadvantages of forensic support toolkits	Accuracy of Answer; Participation (Attendance/Quiz)	Problem-Learning Centre	Asynchronous	1,2,3,4	5
4	Sub-CPMK0311 - Ability to understand how computer systems work	Students understand the structure of various files and file systems	Presentation Quality; Written Test (UTS)	Student-Learning Centre	Asynchronous	1,2,3,4	5
5	Sub-CPMK0311 - Ability to understand how computer systems work	Students understand the software to process and analyse evidence	Accuracy of Answer; Performance	Student-Learning Centre	Students understand the software to process and analyse evidence	1,2	10
6	Sub-CPMK0123 - Ability to enforce legal rules and norms	Students understand how evidence is legally valid	Accuracy of Quiz Answers; Written Test (UTS)	Students understand how evidence is valid legally	Asynchronous	1,2,3,4,5,6	5
7	Sub-CPMK0121 - Ability to live a social life in the community	Students understand how to find forensic evidence	Presentation Quality; Performance	Student-Learning Centre	Asynchronous	1,2,4	5
8	Sub-CPMK0311 - Ability to understand how computer systems work	Students understand how to open evidence that password protected	Accuracy of Answers; Written Test (UTS)	Student-Learning Centre	Asynchronous	1,2,4	5
9	Sub-CPMK0122 - Ability to understand legal rules and norms	Students understand how hashes are used to match the evidence	Accuracy of Answer; Written Test (UAS)	Student-Learning Centre	Asynchronous	1,2,3	5
10	Sub-CPMK0311 - Ability to understand how computer systems work	Students understand how network forensic analysis	Practical Results; Written Test (UAS)	Problem-Learning Centre	Asynchronous	1,3,4	5
11	Sub-CPMK0123 - Ability to enforce legal rules and norms	Students understand the method of making a legally compliant report	Accuracy of UAS Answers; Performance	Student-Learning Centre	Asynchronous	1,4,5	10

12	Sub-CPMK0122 - Ability to understand legal rules and norms	Students understand the ethics of being a forensic investigator	Accuracy of Oral Test Answers; Written Test (UAS)	Problem-Learning Centre	Asynchronous	1	5
13	Sub-CPMK0123 - Ability to enforce legal rules and norms	Generally understand methods of searching for evidence and its presentation in the eyes of the law	Accuracy of UAS Answers; Performance	Problem-Learning Centre	Asynchronous	1,4,5,6	5
14	Sub-CPMK0121 - Ability to live a social life in the community	Generally understand methods of searching for evidence and its presentation in the eyes of the law	Accuracy of UAS Answers; Participation (Attendance/Quiz)	Problem-Learning Centre	Asynchronous	1,2,3,4,5	10

ALMA ATA UNIVERSITY FACULTY OF COMPUTER AND ENGINEERING BACHELOR OF INFORMATICS ENGINEERING STUDY PROGRAM	

SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Cloud Computing	INF052	Parallel and Distributed Computing ; Graphics and Visualisation ;	T [Theory] = 3	P[Practice] = 0	(4) Four	29 December 2023

RESPONSE	Semester Learning Plan Developer	Study Material Coordinator	Head of study programme
	Andri Pramuntadi, S.Kom., M.Kom	Dita Danianti, S.Kom., M.Kom	Dhina Puspasari Wijaya, S.Kom., M.Kom

Learning Outcomes	SLOs that are imposed on MKs	
	CPL04	Have the competence to analyse complex computing problems to identify solutions for technology project management in the field of informatics/computer science by considering the insights of transdisciplinary science development.
	CPL09	Ability to analyse, design create and evaluate user interfaces and interactive applications by considering user needs and transdisciplinary science developments.
	Course Learning Outcomes (CPMK)	
	CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.
	CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.	CPL04
CPMK091	Able to analyse and design user interfaces and interactive applications by considering user needs and the development of transdisciplinary science.	CPL09

Brief description of the course	The Cloud Computing course contains the scientific process about the stages of research, types of research, problem formulation, literature review, techniques, etc. quantitative and qualitative data collection, instrument development, quantitative and qualitative data analysis techniques, data validity techniques, data analysis techniques, and data analysis techniques. Thesis writing. This course uses a student centre learning approach, which prioritises students' independence to find and write a thesis. discover knowledge and build expected competencies. Literature review through project-based learning approach multiliteracy is the main activity in this course.	
Study Material: Learning Materials	a. Introduction to Coud Computing b. Network Topology & CloudComputing Software c. Management and Human Resource Management d. Cloud Security Model e. Cloud Services: SaaS, PaaS and IaaS f. Utility and Web Service g. Ecommerce	
Library	**Main:**	
	1. Budiyanto, Alex. 2010, Introduction to Cloud Computing, CloudIndonesia.ORG. 2. Prabowo, Bramandityo. 2011, Introduction to Cloud Computing, Utilisation of Open Source Software Universitas Pendidikan Indonesia. 3. Anggeriana Herwin, Cloud Computing, 2011	
	Supporters:	
	Lecturer's Dictates and Assignments	
Lecturer	Andri Pramuntadi, S.Kom., M.Kom	
Prerequisite Courses	-	

Week 1	End ability of each learning stage (Sub-CPMK)	Indicators	Criteria and Techniques	Form of Learning; Learning Methods; Student Assignments; [Time Estimation]		Learning Materials [Library]	Assessment Weight (%)
				Offline (5)	Online (6)		
(1)	(2)	(3)	(4)			(7)	(8)
1	Sub-CPMK0411 - Assessing the value proposition of Cloud Computing	Able to define cloud computing	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Defining cloud computing Learn about cloud types Understand the paradigm shift that is cloud computing Comparing the advantages and disadvantages of cloud systems	5
2	Sub-CPMK0411 - Assessing the value proposition of Cloud Computing	Able to Implement cloud computing is the best choice	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	> Discovering the attributes that make cloud computing unique > Implementing cloud computing is the best option > Quantify the costs associated with cloud computing systems > Learning about Service Levels Agreements and Licences	5
3	Sub-CPMK0411 - Assessing the value proposition of Cloud Computing	Able to understand how virtual platforms and tools are used	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Using the cloud computing stack to illustrate different models Understanding how virtualised platforms and appliances are used Learning how cloud communications work Discovering a new world of cloud clients	5
4	Sub-CPMK0411 - Assessing the value proposition of Cloud Computing	Able to Create a cloud with Infrastructure as a Service	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Learn about different types of services Creating a cloud with Infrastructure as a Service Working with Software as a Service Developing applications on Platform as a Service Secure cloud transactions with Identity as a Service	5
5	Sub-CPMK0412 - Using Cloud Computing platform	Able to understand how abstraction enables cloud computing	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Understand how abstraction enables cloud computing Understand how virtualisation creates shared resource pools	5
6	Sub-CPMK0412 - Using Cloud Computing platform	Able to understand Studying capacity planning for the cloud	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Learn capacity planning for the cloud Capture baselines and metrics Determining resources and their maximum limits Scaling your system appropriately	5
7	Sub-CPMK0412 - Using Cloud Computing platform	Understanding PaaS service models	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Understanding PaaS service models Learn about PaaS development View examples of PaaS sites and tools Discover common features of PaaSbuilt apps	5

8	Sub-CPMK0411 - Assessing the value proposition of Cloud Computing		Accuracy of UTS Answers; Written Test (UTS)	Written Test			25
9	Sub-CPMK0413 - Exploring Cloud Computing infrastructure	able to understand about network management software	Accuracy of UAS Answers; Test Writing (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Learn about network management software View important monitoring features Using life cycle management techniques	5
10	Sub-CPMK0413 - Exploring Cloud Computing infrastructure	Understanding Cloud Security	Accuracy of UAS Answers; Test Writing (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Review cloud security issues Understand how cloud data can be secured Plan for security in your system Learn how identity is used to enable secure cloud access	5
11	Sub-CPMK0911 - Understand Cloud Computing services and applications	Understanding Using Service-Oriented Architecture	Accuracy of UAS Answers; Test Writing (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Using Service Oriented Architecture Defining message-based transactions Understanding processes and transactions Managing SOA distributed applications	5
12	Sub-CPMK0911 - Understand Cloud Computing services and applications	Able to understand about cloud transactions	Accuracy of UAS Answers; Test Writing (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Learn about cloud transactions Determining the best features to move to the cloud Looking at cloud burst solutions Knowing the factors of cloud application development	5
13	Sub-CPMK0911 - Understand Cloud Computing services and applications	Able to understand types of cloud storage systems Check file hosting and backing up to the cloud	Accuracy of UAS Answers; Test Writing (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Drowning in a sea of data; stored by the cloud Categorise types of cloud storage systems Examine file hosting and backing up to the cloud Compare unmanaged and managed cloud storage	5
14	Sub-CPMK0911 - Understand Cloud Computing services and applications	Able to understand productivity software	Accuracy of UAS Answers; Test Writing (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Defining productivity software Assessing advantages and shortcomings of online applications Learn about office suites Know the most important features of cloud-based office suites	0
15	Sub-CPMK0911 - Understand Cloud Computing services and applications	able to understand Communication in cloud computing	Accuracy of UAS Answers; Test Writing (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Using Instant Messaging Browse SMS or micro-blog Learn about collaboration software Explore the world of social networking	5
16	Sub-CPMK0912 - Using the mobile cloud		Accuracy of UAS Answers; Test Writing (UAS)	Written Test			30