	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
Decision Support System	INF021	Data Structures, Algorithms and Complexity ; Intelligent Systems ;	T [Theory] = 3	P[Practice] = 0	(5) Five	23 August 2023

RESPONSE	Semester Learning Plan Developer	Study Material Coordinator	Head of study programme
	Dhina Puspasari Wijaya, 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.
	CPL08	Ability to implement computing requirements by considering various appropriate methods/algorithms.
	Course Learning Outcomes (CPMK)	
	CPMK041	Able to identify complex computing problems
	CPMK084	Able to fulfil computing-based needs.
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK		

Course Learning Outcomes		**Supported SLOs**
CPMK Code	**Description of CPMK**	
CPMK041	Able to identify complex computing problems	CPL04
CPMK084	Able to fulfil computing-based needs.	CPL08

Brief description of the course	This course discusses the basic concepts of information, the concept of decision making based on this information, decision-making technology, as well as the design of decision support systems using decision-making methods.		
Study Material: Learning Materials	1. Decision Making 2. Decision Modelling 3. Management Support System 4. OPTIMISATION MODEL WITH LIMITED ALTERNATIVES 5. HEURISTIC MODEL		
Library	**Main:**		
	1. Mantas M. Crisan, and Z. Sonicki, Decision Support Systems and Education, IOS Press, 2018.		
	Supporters:		
	2. J. W. Schmidt, Foundations od Decision Support Systems, Elsevier Science, 2014. 3. I. Butun, Decision Support Systems and Industrial IoT in Smart Grids, Factories, and Cities, IGI Global, 2021. 4. F. Susanto, Introduction to Decision Support Systems, Deepublish, 2020. 5. Poningsih, Decision Support System: Application and 10 Case Study Examples, Yayasan Kita Tulis, 2020. 6. Sanjaya, Fadil Indra et al, Decision Support System for Measuring Product Demand in e-Commerce with Fuzzy Inference System: (Orebae.com Case Study), Jurnal Informatika Merdeka Pasuruan, 2022.		
Lecturer	Dhina Puspasari Wijaya, S.Kom., M.Kom		
Prerequisite Courses	Artificial Intelligence		

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 - Ability to analyse complex computing problems	Explain the concept of Information Systems, forms of decision, decision-making approaches, decision-making procedures, problems in decision-making decision on Islamic values	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5
2	Sub-CPMK0411 - Ability to analyse complex computing problems	Analysing model formation, determining criteria, searching for alternatives, measuring and predicting outcomes.	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5
3	Sub-CPMK0411 - Ability to analyse complex computing problems	Problem identification and environmental analysis Variable identification Forecasting. Use of multiple decision models	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5
4	Sub-CPMK0411 - Ability to analyse complex computing problems	Analysing appropriate model category selection, Model management, Knowledge-based modelling	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5
5	Sub-CPMK0411 - Ability to analyse complex computing problems	analyse the model optimisation for problems with a relatively small number of alternatives -Model optimisation with algorithms -Optimisation model with analytical formula -Simulation models -Heuristic modelling -Predictive modelling -Other models.	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	10
6	Sub-CPMK0411 - Ability to analyse complex computing problems	solving problems using the MADM method: -SAW -WP -TOPSIS -AHP	Quality of Presentation; Observation (Practical/Assignment)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	10
7	Sub-CPMK0411 - Ability to analyse complex computing problems	solving problems using the MADM method: -SAW -WP -TOPSIS -AHP	Quality of Presentation; Observation (Practical/Assignment)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	10
8	Sub-CPMK0841 - Ability to meet the needs of analysing social networks in organisations - needs to be related	solving problems with the Naïve Bayesian -K-Nearest Neighbour method	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5
9	Sub-CPMK0841 - Ability to meet the needs of analysing social networks in organisations - needs to be related	solving problems with the K-Nearest Neighbour method	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5

10	Sub-CPMK0841 - Ability to meet the needs of analysing social networks in organisations - needs to be related	Able to solve problems with the Clustering method -K-Means	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	10
11	Sub-CPMK0841 - Ability to meet the needs of analysing social networks in organisations - needs to be related	Students are able to: understand the application of Boolean algebra.	Quality of Presentation; Observation (Practical/Assig nment)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5
12	Sub-CPMK0841 - Ability to meet the needs of analysing social networks in organisations - needs to be related	Able to understand Definitions and theories: -Moving Average -Exponential Smoothing -Measuring Accuracy	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asynchronous	1,2,3,4,5,6	5
13	Sub-CPMK0841 - Ability to meet the needs of analysing social networks in organisations - needs to be related	implementing the Group Decision Support System (GDSS)	Presentatio n Quality; Performanc e	Student Centre Learning	Asynchronous	1,2,3,4,5,6	10
14	Sub-CPMK0841 - Ability to meet the needs of analysing social networks in organisations - needs to be related	implementing the Group Decision Support System (GDSS)	Presentatio n Quality; Performanc e	Student Centre Learning	Asynchronous	1,2,3,4,5,6	10

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SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Device Technology	INF023	Programming Languages; Platform-based Development;	T [Theory] = 2	P [Practice] = 1	(5) Five	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	
	CPL10	Ability to design, implement and evaluate multi-platform computing-based solutions that meet the computing needs of an organisation.
	Course Learning Outcomes (CPMK)	
	CPMK101	Able to design multi-platform computing-based solutions that meet the computing needs of an organisation.
	CPMK102	Able to implement multiplatform computing-based solutions.
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		**Supported SLOs**
CPMK Code	**Description of CPMK**	
CPMK101	Able to design multi-platform computing-based solutions that meet the computing needs of an organisation.	CPL10
CPMK102	Able to implement multiplatform computing-based solutions.	CPL10

Brief description of the course	This course discusses various things related to mobile devices, both technology, hardware and software, as well as the use of mobile devices. various programming related to performing simple data acquisition and processing
Study Material: Learning Materials	1. Introduction to Mobile Programming Course 2. Introduction to Android Programming 3. Activity and Intent 4. Layout for Interface 5. Android Widget 6. Storing Data using Arrays and Files 7. Menu 8. Database on Android 9. Distribution Files and Application Distribution 10. Service Location 11. Android App Development Project
Library	**Main:**
	[1] Official Android Developer Documentation http://developer.android.com/. [2] Esposito, Dino, Architecting Mobile Solutions for the Enterprise, 2012, O'Reilly Media. [3] Iversen, Jakob & Eierman, Michael, Learning Mobile App Development A Hands-on Guide to Building Apps with iOS and Android, 2014, Pearson Education.
	Supporters:
	1. Priyo E.U. 2012. From Newbie to Advanced - Easy to Make Android Applications. Yogyakarta: Andi. 2. Safaat N.H. 2014. Android: Programming Mobile Smartphone and Tablet PC Applications Based on Android. Bandung: Informatics. 3. Wahana Komputer. 2013. Step by Step Become an Android Programmer. Yogyakarta: Andi.
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-CPMK101 - Students are able to explain programmes in mobile devices	able to explain the background of gadget technology	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	device technology background	5
2	Sub-CPMK101 - Students are able to explain programmes in mobile devices	explaining the linkages with mobile technology issues	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Mobile technology issues	5
3	Sub-CPMK101 - Students are able to explain programmes in mobile devices	understand android programming concepts	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Android mobile	5
4	Sub-CPMK102 - Students are able to explain programme and application considerations	Understand application development	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Application development tools	5
5	Sub-CPMK102 - Students are able to explain programme and application considerations	design capabilities	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Activities, layouts, and intents	5
6	Sub-CPMK102 - Students are able to explain programme and application considerations	Able to connect databases and applications	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Preferences, files and databases	5
7	Sub-CPMK102 - Students are able to explain programme and application considerations	List building skills	Accuracy of UTS Answers; Written Test (UTS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	List, adapter, simple list	5
8	Sub-CPMK102 - Students are able to explain programme and application considerations	UTS	Accuracy of UTS Answers; Written Test (UTS)	Written Test			25
9	Sub-CPMK1021 - Students are able to use mobile programme tools	Mapu designs Maps	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Map and fragment location sensors	5
10	Sub-CPMK1021 - Students are able to use mobile programme tools	Able to design map users	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz / Elearning	Map Seeting Search for location	5
11	Sub-CPMK1021 - Students are able to use mobile programme tools	able to design sensors	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Sencor mobile device	5
12	Sub-CPMK1021 - Students are able to use mobile programme tools	able to analyse access to mobile phones and cameras	Accuracy of UAS Answers; Written Test (UAS)	Lecture / Discovery Learning Simulation	Quiz/Elearning	Baterray and sensors	5
13	Sub-CPMK1022 - Students are able to design navigation interfaces and hardware hubs	Ability to design a case application	Quality of Presentation; Observation (Practical/Assignment)	Presentation	-	Use case	5

14	Sub-CPMK1022 - Students are able to design navigation interfaces and hardware hubs	Ability to design a case application	Quality of Presentation; Observation (Practical/Assignment)	Presentation		use case	5
15	Sub-CPMK1022 - Students are able to design navigation interfaces and hardware hubs	Ability to design a case application	Quality of Presentation; Observation (Practical/Assignment)	Presentation		Use Case	5
16	Sub-CPMK1022 - Students are able to design navigation interfaces and hardware hubs	UAS	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
Research Methodology	INF027	Social Issues and Professional Practice; Self Development;	T [Theory] = 3	P[Practice] = 0	(5) Five	30 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**	
	CPL02	Demonstrate professional attitudes in the form of Institution/University adherence to professional ethics, ability to work together in multidisciplinary teams, understanding of lifelong learning, and response to social issues and technological developments.
	CPL07	Compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of a thesis or final project report or scientific article.
	Course Learning Outcomes (CPMK)	
	CPMK023	Able to understand lifelong learning
	CPMK071	Able to compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of a thesis or final project report
	CPMK072	Able to compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of scientific articles
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK023	Able to understand lifelong learning	CPL02
CPMK071	Able to compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of a thesis or final project report	CPL07
CPMK072	Able to compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of scientific articles	CPL07

Brief description of the course	Research Methodology contains knowledge about various types of research, the steps of scientific research starting from determining topic, problem identification, literature review, determination of problem focus, determination of variables, design and design, engineering data collection, analysis and drawing conclusions and their application in the preparation of the Final Project / Thesis
Study Material: Learning Materials	basic concepts in research Identify problems and hypotheses Review literature relevant to the formulation of the problem Research Design Methods, techniques and instruments in qualitative and quantitative analytical research
Library	**Main:**
	1. Hasibuan. Zainal A, 2007, Research Methods in the Field of Computer Science and Information Technology, Jakarta: University Indonesia 2. Indrajit. Richardus Eko, 2016, Informatics from the Philosophy of Science Point of View: An Empirical Study of Science Clumps, Jakarta: Jakarta State University. 3. Jatmiko. Wisnu, 2015, Guidelines for Writing Scientific Articles, Jakarta: University of Indonesia 4. Kothari, 2004, Research Methodology, New Delhi: New Age International Publishers 5. Compilation Team, 2014, Thesis Writing Guidelines, Surabaya: Surabaya State University.
	Supporters:
	Lecturer's Dictate
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 (%)
(1)	(2)	(3)	(4)	Offline (5)	Online (6)	(7)	(8)
1	Sub-CPMK0231 - Ability to understand lifelong learning	Know about the concept of basis in the research, benefits of the methodology, differences between methodology and research methods and the research process in general	Quality of Presentation; Participation (Attendance/Quiz)	DI, Presentation, group discussion, and reflection	Eleraning		2
2	Sub-CPMK0231 - Ability to understand lifelong learning	Know about the basic concepts in research, the benefits of methodology, the difference between methodology and research methods and the research process in general.	Quality of Presentation; Participation (Attendance/Quiz)	DI, Presentation, group discussion, and reflection			2
3	Sub-CPMK0711 - Ability to compile a scientific framework for the implementation of science and technology in the form of a thesis or final project report	Identifying the problem Knowing the steps problem formulation Giving examples of problem formulation Creating a research hypothesis	Presentation Quality; Performance	DI, Presentation, and reflexes			2
4	Sub-CPMK0711 - Ability to compile a scientific framework for the implementation of science and technology in the form of a thesis or final project report	Identifying the problem Knowing the steps problem formulation Giving examples of problem formulation Creating a research hypothesis	Quality of Presentation; Observation (Practical/Assignment)	DI, Presentation, discussion			2
5	Sub-CPMK0711 - Ability to compile a scientific framework for the implementation of science and technology in the form of a thesis or final project report	- Understand what a literature review is - Understanding the Benefits of Literature Review - Understanding the Steps of Literature Review - Understanding Literature Review Sources - Doing Citation or Citing	Presentation Quality; Performance	Presentation, discussion and reflection			2

No	Sub-CPMK	Material	Assessment Criteria	Learning Method			Weight
6	Sub-CPMK0711 - Ability to compile a scientific framework for the implementation of science and technology in the form of a thesis or final project report	- Understand what a literature review is - Understanding the Benefits of Literature Review - Understanding the Steps of Literature Review - Understanding Literature Review Sources - Doing Citation or Citing	Accuracy of Answer; Performance	Presentation, discussion and reflection			20
7	Sub-CPMK0711 - Ability to compile a scientific framework for the implementation of science and technology in the form of a thesis or final project report	- Understand what a literature review is - Understanding the Benefits of Literature Review - Understanding the Steps of Literature Review - Understanding Literature Review Sources - Doing Citation or Citing	Presentation Quality; Performance	Presentation, discussion and reflection			2
8	Sub-CPMK0231 - Ability to understand lifelong learning	UTS	Accuracy of UTS Answers; Written Test (UTS)				2
9	Sub-CPMK0231 - Ability to understand lifelong learning	Understand research design	Accuracy of Answer; Observation (Practice/Task)	Presentation, discussion and reflexes			2
10	Sub-CPMK0231 - Ability to understand lifelong learning	Understand research design	Quality of Presentation; Observation (Practical/Assignment)	Presentation, discussion and reflexes			2
11	Sub-CPMK0231 - Ability to understand lifelong learning	Understand research design	Quality of Presentation; Observation (Practical/Assignment)	Presentation, discussion and reflexes			2
12	Sub-CPMK0711 - The ability to compile a scientific framework for the results of the implementation of science and technology in the form of a thesis or final project report	Understand methods, techniques and instruments in research	Quality of Presentation; Observation (Practical/Assignment)	Presentation, discussion and reflexes			20
13	Sub-CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Understand methods, techniques and instruments in research	Quality of Presentation; Observation (Practical/Assignment)	Presentation, discussion and reflection			2
14	Sub-CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Can perform qualitative and quantitative analyses	Accuracy of Answer; Observation (Practice/Task)	Presentation, discussion and reflection			20
15	Sub-CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Can perform qualitative and quantitative analyses	Accuracy of Oral Test Answers; Observation (Practice / Assignment)	Presentation, discussion and reflection			2

| 16 | Sub-CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics. | UAS | Accuracy of UAS Answers; Written Test (UAS) | Written Test | | | 2 |

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SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Project Management	INF029	Social Issues and Professional Practice; Project Management; Personal Development;	T [Theory] = 3	P[Practice] = 0	(5) Five	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**	
	CPL02	Demonstrate professional attitudes in the form of Institution/University adherence to professional ethics, ability to work together in multidisciplinary teams, understanding of lifelong learning, and response to social issues and technological developments.
	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)	
	CPMK022	Able to SHOW collaboration in a multidisciplinary team
	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**	
CPMK022	Able to SHOW collaboration in a multidisciplinary team	CPL02
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	The Project Management course begins with understanding the scope of management. projects. It continues with various knowledge representations, project management in an IT context, project planning, and ends with applying project management concepts through project proposals or case studies.
Study Material: Learning Materials	BK01 - Social Issues and Professional Practice BK03 - Project Management BK23 - Personal Development
Library	**Main:**
	1. R. Ireland, et al, Project Management for IT- Related Projects, BCS Learning & Development Limited, 2019. 2. Lientz, Bennet. Information Technology Project Management. United Kingdom, Palgrave Macmillan, 2017. 3. G. Usher, Project Management in the 21st Century, Springer International Publishing, 2021. 4. Project Management Institure. 2017. A Guide to the Project Management Body of Knowledge (PMBOK Guide). Project Management Institute, Inc. 5. Marchewka, Jack T. Information Technology Project Management: Providing Measurable Organisational Value. United Kingdom, Wiley, 2016.
	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-CPMK0221 - Ability to work in a multidisciplinary team	Able to understand project management objectives	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
2	Sub-CPMK0221 - Ability to work in a multidisciplinary team	Understand the scope of project management	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
3	Sub-CPMK0221 - Ability to work in a multidisciplinary team	Understand the purpose and objectives of project management in an IT context	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
4	Sub-CPMK0221 - Ability to work in a multidisciplinary team	Understand the purpose and objectives of project planning	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
5	Sub-CPMK0221 - Ability to work in a multidisciplinary team	Understand the purpose and objectives of project integration management	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
6	Sub-CPMK0221 - Ability to work in a multidisciplinary team	Understand the purpose and objectives of project time management	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	10
7	Sub-CPMK0221 - Ability to work in a multidisciplinary team	Understand the purpose and objectives of project cost management	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3,4,5	10
8	Sub-CPMK0221 - Ability to work in a multidisciplinary team	Able to implement time and cost management in case studies	Presentation Quality; Performance	Student centred learning	Asynchronous	1,2,3,4,5	5
9	Sub-CPMK0422 - Information technology project management solution skills / computer science with transdisciplinary science development insights	Understand the purpose and objectives of project quality management	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
10	Sub-CPMK0422 - Information technology project management solution skills / computer science with transdisciplinary science development insights	Understand the purpose and objectives of project communication management	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
11	Sub-CPMK0422 - Information technology project management solution skills / computer science with transdisciplinary science development insights	Understand the purpose and objectives of project risk management	Quality of Presentation; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5

12	Sub-CPMK0422 - Information technology project management solution skills / computer science with transdisciplinary science development insights	Understand the purpose and objectives of project procurement management	Practical Results; Observation (Practical/As signment)	Student centred learning	Asynchronous	1,2,3,4,5	5
13	Sub-CPMK0422 - Information technology project management solution skills / computer science with transdisciplinary science development insights	Understand the purpose and objectives of project stakeholder management	Practical Results; Observation (Practical/As signment)	Student centred learning	Asynchronous	1,2,3,4,5	5
14	Sub-CPMK0422 - Information technology project management solution skills / computer science with transdisciplinary science development insights	Able to apply project management concepts through project proposals	Accuracy of UAS Answers; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3,4,5	10

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SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
Software Quality Test	INF036	Architecture and Organisation ; Software Engineering ; Systems Analysis & Design ;	T [Theory] = 3	P[Practice] = 0	(5) Five	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	
	CPL10	Ability to design, implement and evaluate multi-platform computing-based solutions that meet the computing needs of an organisation.
	Course Learning Outcomes (CPMK)	
	CPMK103	Able to evaluate multiplatform computing-based solutions.
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK		

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK103	Able to evaluate multiplatform computing-based solutions.	CPL10

Brief description of the course	The materials taught include server side, client side, Javascript, basic PHP structure, conditions and loops, view controller model, form handling, arrays and functions, strings and dates, file directories, database connections, session and cookies management, creating applications with PHP and MySQL.
Study Material: Learning Materials	BK16 - Architecture and Organisation BK20 - Software Engineering BK21 - Systems Analysis & Design
Library	**Main:**
	1. A. N. Asyikin, 2018. Web Programming, Yogyakarta: Deepublish. 2. A. S. B. Nugroho, 2019. Advanced Web Programming (Array, Function and Crud with CodeIgniter, Banjarmasin: POLIBAN Press. 3. R. Abdulloh, 2018. 7 in 1 Advanced Web Programming, Yogyakarta: Elex Media Computindo. 4. Dean, 2018. Web Programming with HTML5, CSS, and JavaScript, Jones & Barlett Learning. 5. M. Y. H. Setyawan and C. E. Prawiro, 2020. CodeIgniter: Implementation of Entropy Method in PHP Programming (Learning with Practice), Creative Industries of the Archipelago.
	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-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy in explaining the basis of Testing and System Implementation Information	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
2	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Ability to evaluate solutions for projects efficient software as required and Accuracy explains quality aspects	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
3	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Ability to evaluate solutions for projects Efficient software as required and Accuracy in explaining issues around testing and testability	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
4	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy in explaining issues around testing and testability	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
5	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	The accuracy of making strategies in the testing process and test cases	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
6	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy in solving the problems in the case study programme	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5
7	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy in explaining the unit testing process of largest to largest smallest	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3,4,5	10
8	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Ability to create user interfaces in applications interactive software with a variety of method	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	10
9	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy of explanation about procedures and objects oriented testing	Practical Results; Observation (Practical/Assignment)	Student centred learning	Asynchronous	1,2,3,4,5	5

10	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy in explaining the documentation of a test	Practical Results; Observation (Practical/Assig nment)	Student centred learning	Asynchronous	1,2,3,4,5	5
11	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Ability to evaluate solutions for projects efficient software as needed.	Practical Results; Observation (Practical/Assig nment)	Student centred learning	Asynchronous	1,2,3,4,5	5
12	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy in explaining the system maintenance strategy	Practical Results; Observation (Practical/Assig nment)	Student centred learning	Asynchronous	1,2,3,4,5	5
13	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Ability to evaluate solutions for projects efficient software as needed.	Accuracy of UAS Answers; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3,4,5	10
14	Sub-CPMK01031 - Ability to evaluate various computing problems Ability to evaluate various multiplatform computing problems	Accuracy in solving testing project case study problems	Accuracy of UAS Answers; Written Test (UAS)	Student centred learning	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
Software Analysis and Design	INF053	Software Design; Systems Analysis & Design;	T [Theory] = 3	P[Practice] = 0	(5) Five	21 August 2023

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	
	CPL09	Ability to analyse, design create and evaluate user interfaces and interactive applications by considering user needs and transdisciplinary science developments.
	CPL10	Ability to design, implement and evaluate multi-platform computing-based solutions that meet the computing needs of an organisation.
	Course Learning Outcomes (CPMK)	
	CPMK093	Able to evaluate user interfaces and interactive applications
	CPMK092	Able to create user interfaces and interactive applications
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK093	Able to evaluate user interfaces and interactive applications	CPL09
CPMK092	Able to create user interfaces and interactive applications	CPL10

Brief description of the course	This course discusses the system development process which includes software development tier, user interface, tools. It also introduces the steps in analysis and design in the form of System Development Life Cycle. Students are also prepared to be able to use analysis and design tools in the form of process-based tools: data flow diagram (DFD), process flow diagram, data dictionary, SQL data types, process specifications, state transition diagrams, and entity relational diagrams.
Study Material: Learning Materials	data flow diagram (DFD), process flow diagram, data dictionary, SQL data types, process specification, state transition diagram, and entity relational diagram.
Library	**Main:**
	1J effry L Whitten and Lonnie D. Bentley, System Analysis and Design, 7th Edition, McGraw.Hill, 2007.
	Supporters:
	2. Brett D. McLaughlin, Gary Pollice and David West, Object Oriented Analysis and Design, O'Reilly Media. Inc, 2007. 3. Kendall, System Analysis and Design, 8th edition, 2013
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)	Offline (5)	Online (6)	(7)	(8)
1	CPMK0931 - Ability to evaluate user interface	Students are able to explain the Role of Software, What is Good Software.	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
2	CPMK0931 - Ability to evaluate user interface	Students are able to explain OT Process and System Engineering, Product & Process Differences, Fundamental Activities of the OT Process, Project Suggestions, System Engineering	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
3	CPMK0931 - Ability to evaluate user interface	Students are able to analyse Definition of feasibility studies, Factors inhibiting feasibility studies, Techniques for conducting feasibility studies	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
4	CPMK0932 - Ability to evaluate interactive applications	Students are able to explain overview	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
5	CPMK0932 - Ability to evaluate interactive applications	Students are able to analyse Waterfall Model, Incremental Process Model, Incremental Model, RAD Model	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
6	CPMK0932 - Ability to evaluate interactive applications	Students are able to analyse the Prototyping Model, Spiral Model, Concurrent Development Model, Process Model, special process model, Component Based Model, and other models.	Accuracy of Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
7	CPMK0932 - Ability to evaluate interactive applications	Students explain Requirements Analysis and Engineering (Concepts and Principles): System Engineering, Areas of Analysis, Principles of Analysis, Requirements Management and validation	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	10
8	CPMK1011 - Ability to design software that supports multi-platform technologies in an organisation.	Students are able to design Software Requirement Specification (SRS): Principles of a good SRS, Overview of SRS document templates	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
9	CPMK1011 - Ability to design software that supports multi-platform technologies in an organisation.	Students are able to model Analysis: Structured Analysis, Definition & Principles	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
10	CPMK1011 - Ability to design software that supports multi-platform technologies in an organisation.	Students are able to perform modelling analysis tools: Data Flow Diagram (DFD), Data Dictionary (DD), PSpec	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
11	CPMK1011 - Ability to design software that supports multi-platform technologies in an organisation.	Students are able to explain Software Design Concepts & Principles: Design concepts, Effective Modular Design	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5

12	CPMK1011 - Ability to design software that supports multi-platform technologies in an organisation.	Students are able to design the stages of design: Data Design, Architectural Design, Interface Design, Transform Mapping, Transaction Mapping,	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10
13	CPMK1011 - Ability to design software that supports multi-platform technologies in an organisation.	Students are able to design Design Documentation (SW Design Document): Principles of a good SDD, SDD Template Overview	Accuracy of Answer; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10
14	CPMK1011 - Ability to design software that supports multi-platform technologies in an organisation.	Students are able to explain Software Quality Assurance (SQA): Overview of SQA	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				

SEMESTER LEARNING PLAN

COURSE (MK)	CODE	Study Material (BK)	WEIGHT (credits)		SEMESTER	Date of Preparation
E - Health	INF056	Social Issues and Professional Practice; Data and Information Management;	T [Theory] = 3	P[Practice] = 0	(5) Five	28 August 2023

RESPONSE	Semester Learning Plan Developer	Study Material Coordinator	Head of study programme
	Dhina Puspasari Wijaya, 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	
	CPL11	Able to identify problems and formulate computational solutions for problems in the health and medical fields.
	Course Learning Outcomes (CPMK)	
	CPMK111	Able to identify various computational problems in the field of medical health
	CPMK112	Able to formulate computational solutions in the health and medical fields
	End ability of each learning stage (Sub-CPMK)	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK111	Able to identify various computational problems in the field of medical health	CPL11
CPMK112	Able to formulate computational solutions in the health and medical fields	CPL11

Brief description of the course	This course learns about the management of electronic medical records where this medium is a representation of all patient data that would originally be found in paper-based records whose information regarding pathology data, radiology, and clinical information has been combined and structured in digital form.
Study Material: Learning Materials	1. understand the Basic Concepts of E-Health 2. Information Systems Theory and the System Development Life Cycle 3. E-Health Adoption 4. E-Health Project Management: Roles in E-Health Design and Implementation 5. E-Health on Service Quality 6. Strategic Plan on the E-Health Migration Path.
Library	**Main:**
	1. D. R. Masys. 2017. Electronic Health Records and Genomic Medicine. Academic Press.
	Supporters:
	2. H. Susanto. 2017. Electronic Health System: Emerging Sensor and Intelligent Technology Approach. Pages 189-203. Academic Press. 3. P. Nadkarni. 2016. Clinical Research Information Systems: Using Electronic Health Records for Research. Pages 129-142. Academic Press. 4. Sendra Compte, Sandra, et al. E-Health Systems: Theory and Technical Applications. Netherlands, Elsevier Science, 2016. 5. A. W. Kushniruk and E. M. Borycki. 2017. Usability of Healthcare Information Technology: Barrier to the Exchange of Health Information in the Two-Sided e-Health Market. Pages 33-41. Academic Press.
Lecturer	Dhina Puspasari Wijaya, S.Kom., M.Kom
Prerequisite Courses	Health Information System

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-CLO1111 - Ability to identify various computational problems	Students agree on the lecture material	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
2	Sub-CLO1111 - Ability to identify various computational problems	Students understand global and national policies	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
3	Sub-CLO1111 - Ability to identify various computational problems	Students understand global and national policies	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
4	Sub-CLO1111 - Ability to identify various computational problems	Students understand global and national policies	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
5	Sub-CLO1112 - Ability to identify various computational problems in the health sector	Students understand about HIMS (Health Information Management System)	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asyncronus	1,2,3,4,5	10
6	Sub-CLO1112 - Ability to identify various computational problems in the health sector	Students understand about HIMS (Health Information Management System)	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asyncronus	1,2,3,4,5	10
7	Sub-CLO1112 - Ability to identify various computational problems in the health sector	understand strategies in software testing	Accuracy of UTS Answers; Written Test (UTS)	Student Centre Learning	Asyncronus	1,2,3,4,5	10
8	Sub-CLO1121 - Ability to formulate solutions to various computational problems	understand software testing implementation	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
9	Sub-CLO1121 - Ability to formulate solutions to various computational problems	Students understand the development of technology in E-Health	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
10	Sub-CLO1121 - Ability to formulate solutions to various computational problems	Students understand the development of technology in E-Health	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
11	Sub-CLO1121 - Ability to formulate solutions to various computational problems	Students understand the process of moving from paper to electronic	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asyncronus	1,2,3,4,5	5
12	Sub-CLO1122 - Ability to formulate solutions to various computational problems in the health sector	Students understand the process of moving from paper to electronic	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asyncronus	1,2,3,4,5	10
13	Sub-CLO1122 - Ability to formulate solutions to various computational problems in the health sector	Students understand the overview of A good EMR or EHR	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asyncronus	1,2,3,4,5	10
14	Sub-CLO1122 - Ability to formulate solutions to various computational problems in the health sector	Students understand the overview of a good EMR or EHR	Accuracy of UAS Answers; Written Test (UAS)	Student Centre Learning	Asyncronus	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
Semantic Web	INF057	Data and Information Management ; Parallel and Distributed Computing ;	T [Theory] = 3	P[Practice] = 0	(5) Five	24 August 2023

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	
	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.
	CPL07	Compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of a thesis or final project report or scientific article.
	Course Learning Outcomes (CPMK)	
	CPMK041	Able to identify complex computing problems
	CPMK072	Able to compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of scientific articles
	End ability of each learning stage (Sub-CPMK)	

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK041	Able to identify complex computing problems	CPL04
CPMK072	Able to compile a scientific description of the results of the study of the implications of the development or implementation of science and technology in the form of scientific articles	CPL07

Brief description of the course	The Semantic Web course is one of the courses that provide It provides students with an understanding of how a collection of information is stored in a computer in a systematic way so that it can be examined using a computer programme to obtain information from the database.
Study Material: Learning Materials	web ontology, basic concepts of RDF (resource description framework), basic concepts of OWL (web ontology language), concepts of logic, rules and inferences, semantic web queries, examples of semantic web applications, simple semantic web applications, linked open data
Library	**Main:**
	1. Breitman, et al. 2007, "Semantic Web: Concepts, Technologies, and Applications". Springer
	Supporters:
	2. Alseso, et al. 2008, "Thinking on the web: Berners-Lee, Godel and Turing". WileyInterscience 3. Hebeler, J. and Fisher, M. 2009. Semantic Web Programming. Wiley Publishing.
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	CPMK0411 - Ability to analyse complex computing problems	Students are able to explain about semantic web	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
2	CPMK0411 - Ability to analyse complex computing problems	Able to explain about ontology classification, Able to apply ontology language	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
3	CPMK0411 - Ability to analyse complex computing problems	Able to understand the concept of RDF. Able to implement RDF schema	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
4	CPMK0411 - Ability to analyse complex computing problems	Able to correctly explain the basic concepts of OWL, Able to apply OWL Language	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
5	CPMK0411 - Ability to analyse complex computing problems	Able to explain the concept of RDF	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
6	CPMK0411 - Ability to analyse complex computing problems	Able to understand the basics of SPARQL	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
7	CPMK0411 - Ability to analyse complex computing problems	Able to apply SPARQL	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	10
8	CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Students are able to use Protage	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
9	CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Students are able to use jena	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
10	CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Students are able to explain the concept of Linked Open Data	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
11	CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Students are able to apply the concept of Linked Open Data in case studies	Accuracy of Answer; Observation (Practice/Task)	Student centred learning	Asynchronous	1,2,3	5
12	CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Students have an understanding of the use of semantic web queries	Accuracy of UAS Answers; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10
13	CPMK0721 - Ability to compose scientific articles in accordance with the	Students have an understanding of the concepts of logic, rules and inferences.	Accuracy of UAS Answers; Written Test (UAS)	Student centred learning	Asynchronous	1,2,3	10

	field of informatics.						
14	CPMK0721 - Ability to compose scientific articles in accordance with the writing procedures in the field of informatics.	Students have an understanding of the application of a simple library semantic web	Accuracy of UAS Answers; 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				
		SEMESTER LEARNING PLAN				
COURSE (MK)	**CODE**	**Study Material (BK)**	**WEIGHT (credits)**		**SEMESTER**	**Date of Preparation**
AR/VR Technology	INF054	Intelligent Systems ; Platform-based Development;	T [Theory] = 2	P [Practice] = 1	(5) Five	21 August 2023
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**		
	CPL05	Mastering the theoretical concepts of Computer Science / Informatics knowledge in designing and simulating multi-platform technology applications that are relevant to the needs of industry and society.	
	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)		
	CPMK052	Able to master the theoretical concepts of Computer Science/Informatics knowledge in simulating multi-platform technology applications	
	CPMK092	Able to create user interfaces and interactive applications	
	End ability of each learning stage (Sub-CPMK)		

Correlation of CPMK to Sub-CPMK	

Course Learning Outcomes		Supported SLOs
CPMK Code	**Description of CPMK**	
CPMK052	Able to master the theoretical concepts of Computer Science/Informatics knowledge in simulating multi-platform technology applications	CPL05
CPMK092	Able to create user interfaces and interactive applications	CPL09

Brief description of the course	In this course, students learn about Augmented Reality, starting from the basic theory of the technology, the development of supporting tools, to how to implement AR technology-based applications that can be useful in various fields, including in industry.
Study Material: Learning Materials	Basic theory of Augmented Reality technology, Development of Augmented Reality technology, Introduction of Augmented Reality supporting tools, Development of Augmented Reality implementation
Library	**Main:**
	1. Aukstakalnis, Steve, Practical Augmented Reality, 2016, Addison-Wesley Professional
	Supporters:
	2. Schmalstieg, Dieter, T. Hollerer, Augmented Reality: Principles and Practice, 2016, Addison-Wesley Proffesional. 3. Kipper, Gregory, J. Rampolla, Augmented Reality, 2012, Elsevier.
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 (%)
(1)	(2)	(3)	(4)	Offline (5)	Online (6)	(7)	(8)
1	CPMK0521 - Ability to understand the theory of software engineering field in simulating multi-platform technology applications	Students are able to understand the history of AR, the basis of AR technology, and the devices used for implementation.	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
2	CPMK0521 - Ability to understand the theory of software engineering field in simulating multi-platform technology applications	Understand the types of implementation and how AR technology works, along with the working concept of the supporting components of its features.	Accuracy of Answer; Participation (Attendance/Quiz)	Student centred learning	Asynchronous	1,2,3	5
3	CPMK0521 - Ability to understand the theory of software engineering field in simulating multi-platform technology applications	Students are able to apply AR technology in various fields.	Presentation Quality; Performance	Student centred learning	Asynchronous	1,2,3	12
4	CPMK0521 - Ability to understand the theory of software engineering field in simulating multi-platform technology applications	Students are able to plan the implementation of AR-based applications by considering the analysis of opportunities and risks.	Presentation Quality; Performance	Student centred learning	Asynchronous	1,2,3	13
5	CPMK0521 - Ability to understand the theory of software engineering field in simulating multi-platform technology applications	Students are able to understand how AR support components (H/W) work.	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	6
6	CPMK0521 - Ability to understand the theory of software engineering field in simulating multi-platform technology applications	Students are able to understand how features of AR technology.	Accuracy of UTS Answers; Written Test (UTS)	Student centred learning	Asynchronous	1,2,3	6
7	CPMK0521 - Ability to understand the theory of software engineering field in simulating multi-platform technology applications	Students are able to understand how features of AR technology.	Accuracy of UTS Answers; Written Test (UTS)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Asynchronous	1,2,3	5
8	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to understand various SDKs supporting the implementation of AR technology.	Accuracy of Answer; Participation (Attendance/Quiz)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Asynchronous	1,2,3	5

9	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to understand the limitations of AR technology development along with solutions that can be applied to overcome this problem.	Accuracy of Answer; Participation (Attendance/Quiz)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Asynchronous	1,2,3	5
10	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to understand the basic techniques of designing a AR technology-based applications that prioritise the user's point of view.	Accuracy of Answer; Observation (Practice/Task)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Asynchronous	1,2,3	5
11	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to understand about various Supporting S/W and its utilisation techniques for AR application object asset processing.	Accuracy of Answer; Observation (Practice/Task)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Materials and Tasks in eLearning.	1,2,3	5
12	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to understand about various AR application development support tools.	Accuracy of Answer; Observation (Practice/Task)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Materials and Tasks in eLearning.	1,2,3	7
13	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to develop AR technology application design based on the user's point of view, and develop a design for their interaction with the system.	Accuracy of UAS Answers; Written Test (UAS)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Materials and Tasks in eLearning.	1,2,3	6
14	CPMK0921 - Ability to create user interfaces for interactive software applications using various methods	Students are able to develop AR technology application design based on the user's point of view, and develop a design for their interaction with the system.	Accuracy of UAS Answers; Written Test (UAS)	Lecture, Discovery Learning, group discussion. (2x(2x50 minute)	Materials and Tasks in eLearning.	1,2,3	6