SEMESTER LEARNING PLAN (RPS)
UNIVERSITY CURRICULUM

Introduction to Artificial Intelligence (UBU-XXXXXX)

Department	:	**All Departments**
Study program	:	
Semester	:	**Odd 2022/2023**
Course Name	:	**Introduction to Artificial Intelligence**
Course Code	:	**UBU-XXXXXX**
Characteristic	:	**Choice**
Credit Weight	:	**2 credits**

BRAWIJAYA UNIVERSITY ALL FACULTIES
ALL DEPARTMENTS AND STUDY PROGRAMS

2023

UNIVERSITY OF BRAWIJAYA

ALL FACULTIES

ALL DEPARTMENTS AND STUDY PROGRAMS

SEMESTER LEARNING PLAN					
COURSE (Course)	**CODE**	**WEIGHT (SKS)**		**SEMESTER**	**COMPILATION DATE**
Introduction to Artificial Intelligence	**UBU-XXXXXX** MK Choice	K=2	P=0	Odd 2023/2024	August 8, 2023
APPROVAL	**Drafting team**			**CHAIRMAN**	

LEARNING OUTCOMES	**CPL**	
	Course Learning Outcomes (CPMK)	
	M1	Identify and explain the basic concepts of artificial intelligence (AI) and its applications in everyday life.
	M2	Understand machine learning principles, including supervised learning and unsupervised learning.
	M3	Applying machine learning algorithms to regression, classification, and clustering tasks.
	M4	Using Tools for simple AI implementation using commonly used libraries.
	M5	Understanding natural language processing and its application in virtual assistants.
	M6	Analyze and evaluate AI case studies in various industries.
	M7	Applying ethical principles in the development and application of AI.
	M8	Identifying and understanding challenges in AI related to bias, privacy, and fairness.
	M9	Get to know and use AI tools and technologies commonly used in AI development.
	M10	Prepare reports and conduct presentations on simple AI projects.
	M11	Understand recent developments in AI and future trends.
	Sub-Course Learning Outcomes (Sub-CPMK)	
	L1	Describes the definition and history of the development of artificial intelligence (AI) (M1)

	L2	Explains the basic principles of artificial intelligence and how AI systems work. (M1)
	L3	Identify and compare different types of artificial intelligence, such as weak and strong artificial intelligence. (M1)
	L4	Explains the basic concepts of machine learning and how it differs from traditional programming approaches (M2)
	L5	Identify and compare different types of machine learning, such as supervised learning, unsupervised learning, and reinforcement learning. (M2)
	L6	Distinguish between regression, classification, and clustering tasks in machine learning and identify the different modeling techniques used for each task. (M3)
	L7	Understanding the role and importance of using machine learning libraries or frameworks in AI application development. (M4)
	L8	Installing And configure environment development (development environment) Forusing machine learning libraries correctly. (M4)
	L9	Identifying And explain draft base processing Language experience (Natural Language Processing/NLP), including understanding of text, syntax, and semantics of human language. (M5)
	L10	Study and analyze various AI case studies that have been successfully implemented in certain industries, such as health, finance, manufacturing, retail, and others. (M6)
	L11	Identify and describe a specific problem or challenge in the industry that was successfully addressed overcome using AI technology. (M6)
	L12	Understand and identify ethical issues related to the development and application of AI, such as algorithmic bias, data privacy, security, and social impact. (M7)
	L13	Identify and analyze real cases where bias in AI has led to injustice or discrimination. (M8)
	L14	Identify and explain various tools and technologies used in AI development, such as Python, TensorFlow, PyTorch, scikit-learn, Keras, and others. (M9)
	L15	Develop a clear and structured AI project report structure, including introduction, problem description, methods, results, analysis, and conclusion (M10)
	L16	Understand the latest developments in machine learning algorithms and techniques, and their applications in various fields and industries. (M11)
	L17	Analyze the latest developments in Natural Language Processing (NLP), Computer Vision, and Reinforcement Learning. (M11)

	L18	Studying trends in the use of AI in specific applications, such as in health, automotive, finance, and others. (M11)

DESCRIPTIO NMK BRIEF	This course will introduce the basic concepts of AI, including machine learning and deep learning, and their applications in everyday life. Students will learn the basic principles of AI, machine learning algorithms, and understanding of natural language processing, pattern recognition, and recommendation systems. In addition, ethics and challenges in AI will also be an important part of this course.
SUBJECTPREREQ UISITES AND MINIMUM VALUE	
STUDY MATERIALS	1. Introduction to Artificial Intelligence (AI) 2. Basic Concepts of Artificial Intelligence 3. Machine Learning for Non-IT 4. Application of AI in Everyday Life 5. AI-based Tools for Work Support 6. Ethics and Challenges in AI 7. AI Implementation 8. Case study 9. Final Project
LIBRARY	
SUPPORTING LECTURER	

Course (Code)	**:**	**Introduction to Artificial Intelligence (UBU-XXXXXX)**	**Study program**	**:**	**All Study Programs**
Number of Credits | W/P	**:**	**2 credits - Elective**	**Semester**	**:**	**Odd 2021/2022**

Weekly Learning Plan Matrix

Week 4-	**Sub-CPMK**	**Study Materials (Learning Materials)**	**Forms and Methods of Learning**	**Estimated Time**	**Evaluation**		
					Criteria and Forms	**Indicator**	**Weight (%)**
1	L1, L2, L3	Introduction to Artificial Intelligence & Lecture Contracts	Lectures, discussions	2x50 minute	**Criteria:**Holistic rubric Form: There are no assignments yet **Worksheet: LK-01**	The accuracy of students in identifying and explaining the basic concepts of artificial intelligence (AI) and its applications in everyday life. day.	1
2	L4,	Machine Learning: Supervised Learning	Lectures, discussions	2x50 minute	**Criteria:**Holistic rubric Form: Group task **Worksheet: LK-02**	The accuracy of students in explaining the principles of machine learning, including *supervised learning*.	1
3	L5	Machine Learning: Unsupervised Learning	Lecture,discussion, and practice questions	2x50 minute	**Criteria:**Holistic rubric Form: Group task **Worksheet: LK-03**	The accuracy of students in explaining the principles of machine learning, including *unsupervised learning*.	1

4	L6	Application of AI in Everyday Life	Lectures, discussions	2x50 minute	**Criteria:**Holistic rubric Form: Group task	The accuracy of students in demonstrating the application of AI in everyday life	1

					Worksheet: LK-04		
5	L7, L8	AI-based Tools for Work Support	Lectures, discussions	2x50 minute	**Criteria:**Holistic rubric Form: Group task **Worksheet: LK-05**	Students' ability to use various AI tools to support their work	1
6	L9	Introduction to Natural Language Processing (NLP) and Computer Vision (CV)	Practice, discussion	2x50 minute	**Criteria:**Holistic rubric Form: Group task **Worksheet: LK-06**	The accuracy of students explaining the basic concepts of NLP and CV	1
7	L10	Case study quiz (1): analysis of various AI case studies	Quiz	2x50 minute	**Criteria:**Holistic rubric Form: Individual Assignment **Worksheet: LK-07**	The accuracy of students explaining the basic concepts of AI, Tools, and cases of AI application	1
8	Midterm exam						20
9	L11, L12, L13	Ethics and Challenges in AI: Algorithmic Bias and Data Privacy	Lectures, discussions	3x50 minute	Criteria:Holistic rubric Form: Group Assignment Worksheet: LK-08	The accuracy of students explaining ethical principles in the development and application of AI.	1
10	L14	AI Implementation: Introduction to various tools Fordeveloping visual-based AI	Lectures, discussions	3x50 minute	Criteria:Holistic rubric Form: Group Assignment Worksheet: LK-09	Student accuracy in using visual and low code based AI tools	1
11	L14	Implementation AI: Introductionvarious code frameworks	Lecture,discussion, and practice questions	3x50 minute	Criteria:Holistic rubric Form: Group Assignment Worksheet: LK-10	The accuracy of students explaining what and how to use the implementation framework AI	1
12	L30	Final project progress demo	Lecture, discussion	3x50 minute	Criteria: Holistic rubric	Student accuracy explain the concept	1

					Form: Group Assignment Worksheet: LK-11	machine learning process and its implementation	
13	L30	Final project progress demo	Discussion	3x50 minute	Criteria:Holistic rubric Form: Group Assignment Worksheet: LK-12	The accuracy of students in explaining the concept of machine learning and its implementation	1
14	L31	Final Project Demo	Discussion	3x50 minute	Criteria:Holistic rubric Form: Group Assignment Worksheet: LK-13	Student accuracy in explaining simple projects related to AI implementation	1
15	L31	Final Project Demo	Discussion	3x50 minute	Criteria:Holistic rubric Form: Group Assignment Worksheet: LK-14	Student accuracy in explaining simple projects related to AI implementation	1
16	Final Semester Exam/ FP						20
							100

Notes:

- Made for 16 meetings in one semester

Evaluation:

- Assignment (50%)
- UTS(20%)
- UAS(20%)
- LK(10%)

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Number of Credits | W/P	**:**	**2 credits - Elective**	**Semester**	**:**	**Odd 2023/2024**

Course Learning Analysis Diagram