COURSE: ARTIFICIAL INTELLIGENCE TECHNIQUES		CODE: BCS2313	MARKS:
TOPIC: NEURAL NETWORK			
ASSESSMENT: PROJECT	DURATION: 4 WEEKS		

This project will cover **30%** marks.

Course Outcomes

CO2: Construct an intelligence system prototype/module. (Psychomotor: **14%**) (60 Marks)
CO3: Demonstrate critical thinking ideas in artificial intelligence knowledge and problem-solving. (Psychomotor: **6%**) (20 Marks)
CO4: Initiate AI knowledge to the final year/capstone projects and future problems. (Affective: **10%**) (20 Marks)

General Instructions

1. Form a team of **FOUR (4) person per group** from the same lecture class. Identify tasks to be performed by individuals and divide the task to each team member.
2. Even though it is a group project, marks will be given based on **individual assessment**.
3. This project consists of **TWO (2)** parts:
    (a) Artificial Neural Network System Development
    (b) Project Documentation
4. In this project, you and your team will develop a **ARTIFICIAL NEURAL NETWORK SYSTEM** for classification/prediction and get the result.
5. The project must be **ONLY** developed using **Python** programming language. (Note that you are **NOT ALLOWED** to use **ANY** existing application/tools that have been developed).
6. **Record and compile** videos (maximum length: 15 minutes) to explain your coding and output.
7. Submit **Report** as **PDF file**, **python files** as well as **recording video** in **Google Form.** The submission link will be given later by your lecturer. (Note that the python files must be submitted in their original file source).
8. **Due date submission: 13 JUNE 2025 (FRIDAY)**. Penalty deduct **CO2-5% marks** will be given for a late submission.

Project Tasks

a) Fuzzy Logic System Development

- Select **ONE (1)** dataset for your project. You can download the dataset from either https://www.kaggle.com/datasets (Kaggle Dataset) or https://archive.ics.uci.edu/ml/index.php (UCI Machine Learning Dataset). Note that you are **NOT ALLOWED** to change the dataset later. Therefore, choose your dataset wisely.
- Find **at least THREE (3)** journal papers for your project references to create the artificial neural network implementation including data preprocessing, design and training. The journal papers years of published should be between **2020−2025**.
- Find the **classification/prediction accuracy** between the original classification/prediction output and after applying the neural network implementation. You need to propose the formula of classification accuracy.

b) Project documentation
- Report formats
    i. Font type: *Times New Roman*
    ii. Font size: *12*
    iii. Line spacing: *1.5*
    iv. Alignment: *Justified*
    v. Page Number: *Bottom Right*
    vi. Cover Page (see **Last Page**)

- Document contents
    i. **Dataset Information**
        (a) Must describe the dataset in detail such as objective, attributes (input and output), total dataset, and give screenshot sample list of data (at least 10% data)
    ii. **Methodology**
        (a) Perform the data preprocessing to the dataset (including train/test split)
        (b) Design the neural network architecture
        (c) Perform the training
        (d) Evaluate the neural network performance
    iii. **Results**
        (a) Present the classification/prediction results
        (b) Present the testing set accuracy and performance
    iv. **Conclusion**
    v. **References**
        (a) Must follow APA format
    vi. **Source code**

Timeline suggestion:

Date	Task
21/5/2025- 30/5/2025	- Find team members - Select dataset - Find journal papers
2/5/2025-6/6/2025	- Data preprocessing - Design neural network architecture - Training - Evaluation
9/5/2025-12/6/2025	- Write report - Record video - Fill up the Peer Assessment (link in KALAM)
13/6/2025	- Submit all required documents

COURSE: ARTIFICIAL INTELLIGENCE TECHNIQUES	CODE: BCS2313	MARKS:
TOPIC: NEURAL NETWORK		
ASSESSMENT: PROJECT	DURATION: 4 WEEKS	

RUBRIC

Category	Descriptor	Level of Achievement						Total mark
		0	1	2	3	4	5	
CO4: Initiate AI knowledge to the final year/capstone projects and future problems. (Affective: **6%**) (20 Marks)								
a. Dataset Information	Attributes (input and output), total dataset, and screenshot sample list of data (at least 10% data)	Not providing anything	Provide only attribute information	Provide only attribute information and total dataset	Provide little attribute information, total dataset, and sample datasets	Provide enough attribute information, total dataset, and sample datasets-acceptable	Provide detail attribute information, total dataset, and sample datasets-excellent	5
	Change of dataset	Change at the last minute	-	-	-	-	Maintain the dataset	5
	Journal paper	Not providing anything	-	-	Provide 1 or 2 journal papers	-	Provide at least 3 relevant papers	5
b. Report Format		Not following report format	-	-	Follow some format	-	100% follow report format	5
Category	Descriptor	Level of Achievement						Total mark

	COURSE: ARTIFICIAL INTELLIGENCE TECHNIQUES		CODE: BCS2313	MARKS:
	TOPIC: NEURAL NETWORK			
	ASSESSMENT: PROJECT		DURATION: 4 WEEKS	

			0	1	2	3	4	5	
CO3: Demonstrate critical thinking ideas in artificial intelligence knowledge and problem-solving. (Psychomotor: **6%**) (20 Marks)									
c.	Results	Classification/prediction results	Not providing anything	30% classification results	-	50% classification results	-	100% complete classification results	**10**
		Testing Performance	Not providing anything	30% testing evaluation	-	50% testing evaluation	-	100% testing evaluation	**10**
CO2: Construct an intelligence system prototype/module. (Psychomotor: **18%**) (60 Marks)									
d.	Methodology	Performance the data preprocessing	Not providing anything	30% preprocessing/ no description	-	50% preprocessing/ incomplete description	-	100% preprocessing & briefly explain	**5**
		Design artificial neural network architecture	Not providing anything	30% architecture design	-	50% architecture design development	-	100% architecture design development	**10**
		Perform neural network training	Not providing anything	30% training development	-	50% training development	-	100% training development	**10**
		Evaluate the neural network performance	Not providing anything	30% evaluation task	-	50% evaluation task	-	100% evaluation task	**5**
e.	Source code	-	No source code is provided	Some source code is missing/ 70% some errors	-	Some source code is missing/ 30% some errors	-	Full source code is provided & no errors	**5**
f.	Video		No video is provided	-	-	video not briefly explain	-	detail video explanation	**5**
g.	Peer-Assessment	Refer to link on Kalam	-	-	-	-	-	-	**20**
	Category	**Descriptor**	**Level of Achievement**	**Total mark**					**60**

BCS2313

ARTIFICIAL INTELLIGENCE TECHNIQUES

(NEURAL NETWORK PROJECT)

SEMESTER II SESSION 2024/2025

LECTURER'S NAME	**: Ts. Dr. Nur Shazwani Kamarudin**
SECTION	**: 01**
GROUP MEMBERS & MATRIC NO:	
1.	
2.	
3.	
4.	
PROJECT TITLE:	
DATASET NAME:	