

Student Assignment Brief

CONFIDENTIAL DOCUMENT

This document is intended solely for Softwarica College of IT & E-Commerce students for their own use in completing their assessed work for this module. It must not be passed to third parties or posted on any website.

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Assignment Information

Module Name:	Introduction to Artificial Intelligence
Module Code:	ST5000CEM
Assignment Title:	Coursework: Individual Project
Assignment Due:	3 rd March, 2026

Assignment Credit:	10 credits
Word Count:	4000 words
Assignment Type:	Coursework
Grading:	100%

Assessment Overview

You will be provided with an overall grade between 0% and 100%. You have one opportunity to pass the assignment at or above 40%.

Important Notice

The work you submit for this assignment must be your **own independent work**. More information is available in the 'Assignment Task' section of this assignment brief.

Assessed Module Learning Outcomes

The Learning Outcomes for this module align with the marking criteria which can be found at the end of this brief. Ensure you understand the marking criteria to ensure successful achievement of the assessment task.

1. Define and justify an AI problem and prepare an appropriate dataset, including preprocessing and handling of missing/noisy data.
2. Design, implement, and document suitable AI models with appropriate techniques for training and optimization.
3. Evaluate model performance using relevant metrics and critically analyze results for validity and improvement.
4. Demonstrate creativity and professional skills in presenting solutions, including innovation, real-world applicability, and effective reporting.
5. Apply version control and reproducibility practices in the implementation process.

Assignment Task

This individual coursework is designed to assess your understanding of the module's core concepts by having your design, implement, and evaluate an AI model to solve a real-world problem. You are required to apply algorithmic techniques discussed in class and demonstrate problem-solving, experimentation, and critical thinking.

You will create an AI-driven solution using one or more algorithms in the domains of:

- Classification
- Clustering
- Recommendation Systems
- Search Techniques
- Constraint Satisfaction Problems

Key Tasks and Deliverables

Each student must complete the following:

1. **Topic Selection & Problem Definition**
 - a. Choose a topic aligned with one of the AI problem domains.
 - b. Coordinate the topic with your Module Leader for approval.
 - c. Clearly define the problem and justify its relevance and impact.
2. **Data Collection & Preprocessing**
 - a. Identify and source a suitable dataset.
 - b. Explain your data preprocessing steps: cleaning, normalization, feature selection, etc.
3. **Model Design**
 - a. Choose an appropriate AI algorithm from the module.
 - b. Provide justification for your algorithm selection.
 - c. Design and implement the solution using **custom-defined data structures, functions, or classes** where appropriate.
4. **Training & Evaluation**
 - a. Train the model and test it using standard practices.
 - b. Evaluate performance using **relevant metrics** (accuracy, F1 score, precision, recall, RMSE, etc.).
 - c. Include a **comparative analysis** if multiple models or approaches are tested.
5. **Interface Development**
 - a. Develop a **CLI or GUI** to demonstrate your project.
 - b. The interface should allow users to interact with the model in a meaningful way (e.g., predict, search, recommend).
6. **Version Control**
 - a. You must use GitHub Classroom for source code management.
 - b. Commit code frequently with meaningful messages.
7. **Report Writing**
 - a. A final 4000-word report must include:
 - i. Abstract and introduction
 - ii. Literature review of related AI work
 - iii. Problem description and methodology
 - iv. Algorithm and implementation details
 - v. Data collection and preprocessing
 - vi. Experimental results and analysis

- vii. Conclusion and future improvements
 - viii. Proper APA 7th referencing throughout
- 8. Video Demonstration**
- a. A 10-minute video demonstrating:
 - i. Problem overview
 - ii. Code and interface walkthrough
 - iii. Model in action
 - iv. Brief explanation of results
- 9. Viva Session**
- a. Each student will defend their work through a 10-15 minute individual viva.
 - b. You may be asked to run your code, explain design decisions, and discuss evaluation results
 - c. Questions will be based on the coursework and/or topics covered in class

Submission Instructions

Requirement	Details
File Naming	NAME_studentID
File Format	.pdf format / .docx format

Submission Method	Campus 4.0 platform (submission link provided 2 weeks before deadline)
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Marking and Feedback

How will my assignment be marked?

Your assignment will be marked by the Module Team using standardized criteria.

How will I receive grades and feedback?

Provisional marks will be released once internally moderated. Feedback will be provided alongside grades release within 2 weeks (10 working days).

What will I be marked against?

Details of the marking criteria for this task can be found in the Assessment Marking Criteria section at the end of this brief.

Grade Requirements

You must achieve 40% or above to pass this assessment. Ensure you understand the marking criteria for successful completion.

Marking Criteria

Marking Criteria	Weight
Problem Understanding and Justification	5%
Use of Appropriate AI Algorithm	10%
Data Collection and Preprocessing	5%
Model Design and Implementation	15%
Evaluation and Metrics	10%
Interface Functionality (CLI / GUI)	5%
Code Quality and GitHub Usage	5%

Report Structure and Clarity	15%
Referencing and Academic Integrity	5%
Viva Performance	25%

Assignment Support and Academic Integrity

Getting Help

If you have any questions about this assignment, please meet with your respective module leader or teacher for more information.

Language Standards

You are expected to use effective, accurate, and appropriate language within this assessment task.

Academic Integrity

The work you submit must be your own. All sources of information need to be acknowledged and attributed; therefore, you must provide references for all sources of information and acknowledge any tools used in the production of your work, **excluding Artificial Intelligence (AI)**.

We use detection software and make routine checks for evidence of academic misconduct. Definitions of academic misconduct, including plagiarism, self-plagiarism, and collusion can be found in Student handbook in Campus 4.0.

All cases of suspected academic misconduct are referred to for investigation, the outcomes of which can have profound consequences to your studies.

Support for Students with Disabilities

If you have a disability, long-term health condition, specific learning differences, mental health diagnosis or symptoms, contact the Student Support Office for assistance.

Unable to Submit on Time?

If events prevent you from submitting on time, guidance on extenuating circumstances is available in the Student Handbook or from the Student Support Office.

Administration of Assessment

Module Leader Name:	Er. Suman Shrestha
Module Leader Email:	stw0023@softwarica.edu.np
Assignment Category:	Written
Attempt Type:	Standard
Component Code:	CW

Assessment Marking Criteria

	40% >=above	50% >= above	60%>=above	70% >= above
Problem Understanding and Dataset Handling (15%)	Weak problem definition with little justification. Uses an inappropriate or poorly prepared dataset, with significant preprocessing issues.	Basic problem definition with limited justification. Uses a dataset but preprocessing is minimal or has noticeable flaws.	Defines the problem well with good justification. Uses a relevant dataset with proper preprocessing but minor issues	Clearly defines the problem with strong justification. Uses a high-quality dataset, applies advanced preprocessing techniques, and handles missing/noisy data effectively.
Model Selection and Implementation(20%)	Model selection is weak or inappropriate. Implementation is functional but poorly structured, inefficient, or missing key elements.	Model selection is acceptable but lacks proper justification. Implementation works but has inefficiencies or lacks clarity.	Selects a suitable model with good justification. Code is mostly efficient with minor issues. Some parameter tuning is attempted.	Selects the best-suited model with strong justification. Implements efficiently with clean, well-documented code. Considers hyperparameter tuning.
Performance Evaluation & Optimization(20%)	Uses incorrect or minimal evaluation metrics. No meaningful optimization attempted.	Uses basic evaluation metrics but lacks deeper analysis or optimization.	Uses proper metrics and applies some model evaluation techniques. Minor optimizations attempted.	Uses appropriate evaluation metrics, applies cross-validation, and compares models. Optimizes performance effectively.
Innovation and real-world applicability (15%)	Lacks innovation. Minimal real-world	Project follows standard approaches with	Shows some innovation and attempts to apply practical improvements.	Demonstrates creative thinking, applies novel techniques, and

	applicability considered.	little innovation. Application to real-world scenarios is weak.		considers real-world applications effectively..
Presentation and Documentation (20%)	Report is disorganized, missing key explanations. Presentation lacks clarity or engagement.	Report is understandable but lacks depth, clarity, or proper formatting. Presentation is average.	Good report structure with mostly clear explanations. Presentation is organized but lacks some details.	Clear, well-structured report with strong justification and references. Presentation is engaging, logical, and professional.