Xi'an Jiaotong-Liverpool University
西交利物浦大學

XJTLU Entrepreneur College (Taicang) Cover Sheet

Module code and Title	**DTS307TC Reinforcement Learning**
School Title	**School of AI and Advanced Computing**
Assignment Title	**Coursework 1**
Submission Deadline	**23:59, Friday, May 9, 2025**
Final Word Count	
If you agree to let the university use your work anonymously for teaching and learning purposes, please type **"yes"** here.	

I certify that I have read and understood the University's Policy for dealing with Plagiarism, Collusion and the Fabrication of Data (available on Learning Mall Online). With reference to this policy I certify that:

- My work does not contain any instances of plagiarism and/or collusion.
  My work does not contain any fabricated data.

By uploading my assignment onto Learning Mall Online, I formally declare that all of the above information is true to the best of my knowledge and belief.

Scoring – For Tutor Use	
Student ID	

Stage of Marking	**Marker Code**	**Learning Outcomes Achieved (F/P/M/D) (please modify as appropriate)**			**Final Score**
		A	**B**	**C**	
1st Marker – red pen					
Moderation – green pen	**IM Initials**	The original mark has been accepted by the moderator (please circle as appropriate):			Y / N
		Data entry and score calculation have been checked by another tutor (please circle):			Y
2nd Marker if needed – green pen					

For Academic Office Use			**Possible Academic Infringement (please tick as appropriate)**	
Date Received	**Days late**	**Late Penalty**	☐ **Category A**	Total Academic Infringement Penalty (A,B, C, D, E, Please modify where necessary) _____
			☐ **Category B**	
			☐ **Category C**	
			☐ **Category D**	
			☐ **Category E**	

DTS307TC Reinforcement Learning

Coursework - Individual Lab Report

Due: 23:59, Friday, May 9, 2025
Weight: 40%
Maximum score: 40 marks

Overview

The purpose of this assignment is to gain experience in Python programming and the design of reinforcement leaning algorithms. You are expected to implement an RL algorithm that solves a specific environment and provide an explanation of the algorithm's methodology. You are expected to analyse your results, including challenges and your solutions.

Learning Outcomes Assessed

A: Systematically understand the fundamental concepts and principles of reinforcement learning

B: Critically analyse real-life problem situations and expertly map them as reinforcement learning tasks.

C: Mastery of Monte Carlo Methods and Temporal Difference Learning

D: Proficiency in Deep Reinforcement Learning algorithms

Late policy

5% of the total marks available for the assessment shall be deducted from the assessment mark for each working day after the submission date, up to a maximum of **five** working days

Avoid Plagiarism

- Do ***not*** submit work from other students.
- Do ***not*** share code/work with other students
- Do ***not*** use open-source code as it is or without proper reference.

Risks

- Please read the coursework instructions and requirements carefully. Not following these instructions and requirements may result in a loss of marks.
- The assignment must be submitted via Learning Mall. Only electronic submission is accepted and no hard copy submission.
- All students must download their file and check that it is viewable after submission. Documents may become corrupted during the uploading process (e.g. due to slow internet connections). However, students are responsible for submitting a functional and correct file for assessments.
- Academic Integrity Policy is strictly followed.

Lab Report (40 marks)

The lab reports must include two labs (lab3 and lab4), incorporating your source code, analysis, and supporting evidence. Ensure that screenshots of the outputs and activities are included. Detailed instructions for each lab can be found in the respective lab manuals, and it is crucial that your report strictly follows these guidelines:

- Do **NOT** use Stable-baselines libraries or any other reinforcement learning specific libraries in your code.
- Do **NOT** exceed the word count limit of **3000** words for each report, reference and appendix excluded.
- Although you are allowed to use any generative AI tools to assist your work, please keep in mind that you should be using them **responsibly**. (Good use: Improve your report after writing it and always review its output to ensure that it is correct. Bad use: Copy-pasting an entire report from AI without any effort of your own.)

The distribution of marks is as follows:

- The report for Lab3: A2C [20 marks]
- The report for Lab4: PPO [20 marks]

Submission Requirements

Please prepare and submit the following documents:

- A cover page featuring your student ID.
- A zip file containing all the source codes, which should be named using your full name and student ID in the following format: CW1_Name_ID.zip
- Two PDF files that include all your responses for the 2 labs, your reports, and documentation of your lab work. The files should be named in the following format: CW1_Lab3_ID.pdf and CW1_Lab4_ID.pdf

Note that the quality of the code, the clarity of your writing, and the format/style of your report will be taken into consideration during the evaluation. The detailed rubric is outlined below.

Rubric

Lab3/Lab4 (20 marks)	criteria	marks
Code Performance (3 marks)	Code runs without errors and performs tasks as specified.	2-3
	Code fails to run/have errors	0-1
Code Quality (3 marks)	Code is well-organized, includes meaningful comments, and uses appropriate variable names.	2-3
	Code is poorly-organized, fail to include meaningful comments.	0-1
methodology (3 mark)	Comprehensive coverage of topics with detailed explanations of approaches and methodologies.	2-3
Result analysis (3 marks)	Insightful analysis of results, including challenges faced and solutions applied.	2-3
	analysis of results shows no or little insight	0-1
Report Quality (3 Mark)	Report is well-structured, formatted, and free of grammatical errors.	2-3
Evidence of Lab Work (2 Marks)	All required elements (e.g., screenshots, outputs) are included and correct.	1-2
	Fail to include all required elements	0-1
Lab Work Quality (3 marks)	Clear documentation and captions for included evidence, explaining relevance and importance.	2-3
	Fail to correctly document the evidence.	0-1