Informatics and Computer Science	**22CASI04H** **Assignment 2** **2022-2023**
Module Title **AI Planning for Robot Systems**	
Module Leader **Professor Gerard McKee**	Semester **One**
Assessment Weight **20% of the total course mark**	Due Date **Week 12, Saturday 10 Dec**

Instructions to students:

1. This is an Individual assignment.

2. Submission: The submission will be via E-Learning.

3. Assessment: Assessment will be based on the code and report submitted to E-Learning, a demonstration of the code and a discussion.

4. Feedback: Feedback will be provided on the E-Learning module site two weeks after the submission.

5. Along with the submitted assignment, you need to submit: a fully completed and signed *Coursework submission form* *and* a *Statement of Academic Honesty Form*. You can only submit your own work. Any student suspected of plagiarism will be subject to the procedures set out in the GAR.

Learning Outcomes

The aim of this assignment is to give you theoretical and practical experience in the analysis, visualisation, design and reporting concerning a planning scenario. The assignment addresses all of the learning outcomes for the module with significant emphasis on the **practical** element of the **Subject-specific Practical skills**.

Assignment 2:

In this assignment you will convert the study you have completed for Assignment 1 into a software planner that carries out the planning process for the scenario described in Assignment 1. In addition to addressing the challenge posed in Assignment 1, you will also be required to explore the generalisation of your planner to other scenarios. The implementation language is of your own choice, but discuss your choice with the Module Leader first to make sure it is acceptable.

You are required to deliver the following:

a) Planner source code.

[design: 8 marks, data structures: 6 marks, algorithms: 6 marks]

[Total part a): 20 marks]

b) Demonstration of the Planner, including successes and failures.

[GUI: 8 marks, successes: 6 marks, failures: 6 marks]

[Total part b): 20 marks]

c) A report describing a) and b) as well as the scope of the system for generalisation to wider scenarios.

[organisation: 8 marks, presentation: 8 marks, references: 4 marks, generalisation: 10 marks, scenarios: 10 marks]

[Total part c): 40 marks]

d) Discussion: The discussion will take place over three consecutive labs at the end of the semester, normally weeks 10, 11 and 12. **These labs are compulsory – i.e., non-attendance means marks of zero**. Your engagement with the activities in these labs will be assessed as follows:

Lab	Task	Discussion marks
Week 10	Finalise on representation, operations, planning algorithm	6
Week 11	Show progress on the implementation	6
Week 12	Demonstrate final submission code	8
	Total:	20

[Total part d): 20 marks]

[Assignment 2 Total: 100 marks]