Informatics and Computer Science	**22CASI04H** **Assignment 1** **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 6 (Wed 2 Nov. 2022)**

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 report and animation submitted to E-Learning, and 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 **theoretical** element of the **Subject-specific Practical skills**.

Assignment 1:

In this assignment you will be presented with a scenario that requires a plan to be developed for a robot system to complete a task. You are required to explore and document the following:

a) Ways in which the problem can be solved and the corresponding plans, involving a robot system, to solve the problem.

[approaches: 10 marks, plans: 10 marks]

[Total marks for a): 20 marks]

b) How the problem can be represented in a computer system.

[notation: 8 marks, completeness: 4 marks, examples: 8 marks]

[Total marks for b): 20 marks]

c) What planning strategies might be used to solve the problem.

[strategies: 10 marks, suitability: 10 marks]

[Total marks for c): 20 marks]

You are to deliver for Assignment 1:

d) A report, including text, diagrams, and notations, that provides your thoughts on items a) to c) above.

[organisation: 8 marks, presentation: 8 marks, references: 4 marks]

[Total marks for d): 20 marks]

e) A computer animation illustrating solutions of the problem and challenges (i.e. things that can go wrong). You should be able to provide these animations using PowerPoint's animation tools, or another tool of your choice.

[visual quality of animation(s): 10 marks, clarity: 10 marks]

[Total marks for e): 20 marks]

[Assignment 1 Total: 100 marks]

Discussion: A discussion will be held to ensure that the work you present is the result of your own efforts. A **provisional mark, out of 100,** will be assigned to the submitted work. The results of the discussion will be used to provide a factor (a multiplicator) to decide your final mark. Work suspected to be plagiarised will be reported to the Academic Misconduct Committee.