

ASSIGNMENT BRIEFING FRONT SHEET (2012/13 Academic Year)

Assignment Title	Robot Control	Date submitted	
Module Title	Principles of AI and ALife	Module Code	1COM0048
Tutor	Neil Davey	GROUP or INDIVIDUAL Assignment	Should be done in pairs

FOR INDIVIDUAL ASSIGNMENTS – STUDENT TO COMPLETE

(Comments on this assignment by students can be made on the back of the assignment briefing sheet).
By completing **BOX A** below, I certify that the submitted work is entirely mine and that any material derived or quoted from the published or unpublished work of other persons has been duly acknowledged. [ref. UPR AS/C/6.1, section 7 and UPR AS/C/5 (Appendix III)].
Please print your forename and surname in capitals, provide your; - ID number, the study year code (e.g. CS1, ASE1), actual time spent on the assignment and your signature.

BOX A

Student Forename (in CAPS please)	Student Surname (in CAPS please)	Student ID Number	Year Code	Actual Time Spent by the Student (hours)	Signature of Student

FOR GROUP ASSIGNMENTS - STUDENTS TO COMPLETE

Group Name/Number (if allocated by module team)

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(Student comments on this assignment can be made on the back of the assignment briefing sheet)
By completing **BOX B** below, we certify that the submission is entirely ours and that any material derived or quoted from the published or unpublished work of other persons has been duly acknowledged. [ref. UPR AS/C/6.1, section 7 and UPR AS/C/5 (Appendix III)].
Please print your forenames and surnames in capitals, provide your; - ID numbers, the study year code (e.g. CS1, ASE1), actual time spent on the assignment and your signatures. By signing the submission you certify that this work represents equal contributions from all team members. If this is not the case, the module leader must be informed before submission.

BOX B

<div>Student Forename (in CAPS please)</div>	<div>S</div> (in CAPS please)	<div>S</div>	<div>A</div>	<div>Signature of Student</div>

**This sheet must be submitted with the assignment, signed and either BOX A or B filled in.
LATE SUBMISSION WILL ATTRACT A STANDARD LATENESS PENALTY.**

UNIVERSITY OF HERTFORDSHIRE
Faculty of Engineering and Information Sciences
ASSIGNMENT BRIEFING SHEET

ASSIGNMENT AIMS

Assess the learning outcomes as described in the DMD.

MODULE LEARNING OUTCOMES ASSESSED (from Definitive Module Document, DMD):
All

SUBMISSION REQUIREMENTS

See attached sheet

MARKS AWARDED FOR:

See attached sheet

This assignment is worth % of the overall assessment for this module.

Date work
handed out

Date to be
handed in

Internal moderator
approval (signature)

Time (hrs) typically required of the student

Actual time (hrs) spent by the student

(Student comments on this assignment can be made on the back of this sheet)

I certify that the work submitted is my own and that any material derived or quoted from the published or unpublished work of other persons has been duly acknowledged.

(ref. UPR AS/C/6.1, section 7 and UPR AS/C/5, section 3.6)

Signed:

MARKER'S COMMENTS (continued on the back of this sheet, if necessary)

Handed back on:

This sheet must be submitted with
the assignment, signed and with
double-lined boxes filled in.

MARK (%) AWARDED

Lateness Penalty

STUDENT COMMENTS ON THE ASSIGNMENT (optional)

MARKER'S COMMENTS (continued)

Principles of AI and ALife CW 2

Assignment 2

This coursework extends the behavior of the edging robot. The basic robot model is available on Studynet from *TeachingResources/NetlogoSimulations/coursework-robot*, and you should modify this program so that the robot will do the following:

1. The robot is placed in a square walled area and should follow the walls in a clockwise fashion. Program the robot to do this. It should try and stay within the edging zone (the yellow corridor) at all times. You will need to modify what the robot does when it bumps into the wall. [4 marks]
2. Create a new breed of robot that will move around the walled area in an anti-clockwise manner, with the nearest wall on its right. [6 marks]
3. Program the robot to avoid obstacles in the edging zone. Obstacles should be rectangular and red. To draw an obstacle use the commented out code in the *setup* procedure. [4 marks]

Advanced Tasks

4. Program the robot(s) so that two, or more, robots can be in the room at the same time, one moving clockwise and the other anticlockwise. They should avoid each other when they meet. [4 marks]
5. Try and program the robot to do general wall following and obstacle avoidance, so that it uses ultrasound sensors on both sides and can follow a wall on either side. [2 bonus marks]

Notes:

1. Your robot should be able to tolerate some noise in its sensors and motors
2. You must do this coursework in pairs: submit one piece of coursework but with both names.
3. You will be expected to give a short demonstration of your robot in the practical session on the 26th of March. The demo is worth 8 marks, 2 marks for each part.
4. Zip up any files you want to have assessed and submit through studynet.