Faculty of Technology – Course work Specification 2015/16

Module name:	**Mobile Robots**		
Module code:	**IMAT5121**		
Title of the Assignment:	**Coursework**		
This coursework item is: (delete as appropriate)	Summative		
This summative coursework will be marked anonymously	~~Yes~~	No	
The learning outcomes that are assessed by this coursework are: 1. Understanding the subject specific issues relating to programming mobile robots 2. Understanding and being able to program using the basic architectures to control robots 3. Understanding and being able to program to execute navigation, sensor data analysis and actuator control for mobile robots.			
This coursework is: (delete as appropriate)	Individual		
This coursework constitutes 50 % **to the overall module mark.**			
Date Set:	**18th Nov 2016**		
Date & Time Due:	**16th Jan 2017**		
Your marked coursework and feedback will be available to you on: If for any reason this is not forthcoming by the due date your module leader will let you know why and when it can be expected. The Head of Studies (headofstudies-tec@dmu.ac.uk) should be informed of any issues relating to the return of marked coursework and feedback. Note that you should normally receive feedback on your coursework by **no later than four working weeks after the formal hand-in date,** provided that you met the submission deadline.	**3rd Feb 2016**		
When completed you are required to submit your coursework to: 1. The Coursework Submission link on BlackBoard under assessments by 4.00pm on the 16th of January 2017			
Late submission of coursework policy: Late submissions will be processed in accordance with current University regulations which state: *"the time period during which a student may submit a piece of work late without authorisation and have the work capped at 40% [50% at PG level] if passed is **14 calendar days**. Work submitted unauthorised more than 14 calendar days after the original submission date will receive a mark of 0%. These regulations apply to a student's first attempt at coursework. Work submitted late without authorisation which constitutes reassessment of a previously failed piece of coursework will always receive a mark of 0%."*			
Academic Offences and Bad Academic Practices: These include plagiarism, cheating, collusion, copying work and reuse of your own work, poor referencing or the passing off of somebody else's ideas as your own. If you are in any doubt about what constitutes an academic offence or bad academic practice you must check with your tutor. Further information and details of how DSU can support you, if needed, is available at: http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/academic-offences.aspx and http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/bad-academic-practice.aspx			
Tasks to be undertaken: To write a program in Matlab using the iRobot Create toolbox to achieve the tasks detailed in the handout (file cwHandout_iRobot.pdf)			

Deliverables to be submitted for assessment:
A report of no more than ten sides of A4 including the following:
* Architecture design
* Behaviour design
* Experimental design (to test performance of the task execution)
* Results
* Conclusion
A file containing the Matlab code that implements the tasks

How the work will be marked:

75%-100% - An excellent, well-written report that is well structured and presents good conclusions and a critical analysis of your work and your program's performance. As well as dealing with points B,C and D, the report presents a good development and testing methodology for the achievement of the requirements. You should provide your own critical comments about the strengths and weaknesses of your solution and what could have been made differently.

60%-74% - A well-written report that is well structured and presents good conclusions. As well as doing requirements C and D, you should provide a detailed test of the performance in relation to the requirements. You should provide some comments about the strengths and weaknesses of your approach. Detailed source code documentation.

50%-59% - A reasonable report that presents a good summary of the approach taken to tackle the problem. You have a good understanding the basics of Robot programming. You have included Conclusions, which present what you have learned while solving the problem.The report includes basic tests of the performance of the requirements as listed in the handout (see summary list of requirements at the end of this section). Good source code documentation.

30%-49% - A report that shows reasonable understanding of programming robots. You have attempted to tackle the problem and produced a program that executes part of the task. Basic source code documentation.

1%-29% - A report that shows little or no understanding of robot programming.

0% - No report submitted.

Take note of the requirements for which you need to test the performance of your solution, as detailed in the coursework handout document:
* The robot finds the middle of the room
* The robot exits/enters the room without bumping
* The robot bumps the beacon's wall perpendicular to it
* The robot returns and stops in the middle of the room

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