MTRN4230

Robotics

1. Staff contact d

Contact details and consultation times for course convenor

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Consultation concerning this course should in the first instance be made with your demonstrators, then using the Moodle discussion forums and as a last resort by email to the course coordinator.

Contact details and consultation times for additional lecturers/demonstrators/lab staff

Details will be provided on Moodle.

Credit Points

This is a 6 unit-of-credit (UoC) course, and involves 6

Be able to learn and then use the programming environment of a robot to perform a particular task.
Be able to learn and then use high-level robot simulation software integrating the results with a real robot.
Enable you to work in groups to improve problem-solving skills using computation.

Student learning outcomes

This course is designed to address the learning outcomes below and the corresponding Engineers Australia Stage 1 Competency Standards for Professional Engineers as shown. The full list of Stage 1 Competency Standards may be found in Appendix A.

After successfully completing this course, you should be able to:

Learning Outcome	EA Stage 1 Competencies

This course will be delivered both in the classroom and online. Full participation in the class means that you will participate fully in both arenas. That is, you will be held accountable for all content, instructions, information, etc. that is delivered either in class or online.

Online: The online forum for participation in this class is the Moodle Platform, specifically the Robotics course at http://moodle.telt.unsw.edu.au/course/view.php?id=23106. All official online interactions will take place or be linked from this site.

All details of assessment tasks will be found on Moodle (link below). Team evaluation (such as WebPA) will be used to evaluate the contributions of peers to the two group projects. The remaining assessments are to be completed individually.

Assignments

Further details of individual assessment tasks will be provided on Moodle, including submission procedures and the criteria by which grades will be assigned.

Presentation

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work. Presenting them clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect.

Submission

Late submissions are **not permitted** in this course. An extension may only be granted in exceptional circumstances. Where an assessment task is worth less than 20% of the total course mark and you have a compelling reason for being unable to submit your work on time, you must seek approval for an extension from the course convenor ***before the due date***. Special consideration for assessment tasks of 20% or greater must be processed through student.unsw.edu.au/special-consideration.

Examinations

There is no final examination for this course, but the final assignment is due during the exam period as specified above.

Special consideration and supplementary assessment

For details of applying for special consideration and conditions for the award of supplementary assessment, see the School intranet Special Consideration page.

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The prescribed textbook for the course presents a very wide range of background material in an accessible manner with extensive Matlab examples:

Corke, P., **Robotics, Vision and Control: Fundamental Algorithms in Matlab**, 2013, Springer. This book is available in the UNSW Bookshop.
The full book is also available online for download through the UNSW library:
http://link.springer.com.wwwproxy0.library.unsw.edu.au/book/10.1007%2F978-3-642-20144-8

Lecture slides and supporting course notes will be available on Moodle.

Additional References:

Spong M., Hutchinson S. and Vidyasagar M., Robot Modeling and Control, 2006, John Wiley & Sons.
This text is a classic in robotics, and contains well-presented derivations of the theoretical concepts covered in the course.

Spong M. and Vidyasagar M., Robot Dynamics and Control, 1989, John Wiley & Sons.

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism: student.unsw.edu.au/plagiarism The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.