



Mechanical and Manufacturing Engineering

Course Outline

Term 2 2019

MTRN4110

ROBOT DESIGN

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3. Course details

Credit points

This is a 6 unit-of-credit (UoC) course and involves 5 hours per week (h/w) of face-to-face contact.

The normal workload expectations of a student are approximately 25 hours per term for each UOC, including class contact hours, other learning activities, preparation and time spent on all assessable work.

You should aim to spend about 12.5 h/w on this course. The additional time should be spent in making sure that you understand the lecture material, completing the set assignments, further reading, and revising for any examinations.

Contact hours

	Day	Time	Location
Lectures	Tuesday	1pm - 3pm	Webster Theatre B (K-G15-290)

6. Assessment

Assessment overview

Assessment	Group Project? (# Students per group)	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
Quiz (4)	No	10 multiple choice	40%	1 and 2	Lecture material from weeks 1-7	During week 2, 3, 6, and 8	N/A	One week after assessment
Individual assignment ¹	No	Demonstration	40%	1, 2, and 3	Refer to assignment specifications provided via Moodle for exact details	Meeting with a demonstrator, week 4 and 7	1 week later	One week after assessment
Group assignment ²	Yes (4)	Competition	20%	1, 2, 3, and 4	Refer to assignment specifications provided via Moodle for exact details	Meeting with a demonstrator, week 10	Week 10	Upon release of final results

1. The main assignment of this course is a project on developing a maze-solving robot. The students will form in groups of 4 to complete the project. Students will be assessed both individually and in a group. The separate assessment will be based on the performance of each student on completing their individual tasks.
2. In week 10, the students will present their project results by participating in a maze-solving competition. The assessment will be based on the completion and ranking in the competition.

Appendix A: Engineers Australia (EA) Competencies

Stage 1 Competencies for Professional Engineers

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals
	PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing
	PE1.3 In-depth understanding of specialist bodies of knowledge
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice
	PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice
PE2: Engineering Application Ability	PE2.1 Application of established engineering methods to complex problem solving
	PE2.2 Fluent application of engineering techniques, tools and resources
	PE2.3 Application of systematic engineering synthesis and design processes
	PE2.4 Application of systematic approaches to the conduct and management of engineering projects
PE3: Professional and Personal Attributes	PE3.1 Ethical conduct and professional accountability