Course Outline

Term 2 2020

MTRN3020

MODELLING AND CONTROL OF MECHATRONIC SYSTEMS

Contents

1. Staff contact details

Contact details and consultation times for course convenor

Name: Associate Professor Jay Katupitiya
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Moodle: https://moodle.telt.unsw.edu.au/login/index.php
Microsoft Teams Video Chat Hours: Tuesdays and Thursdays 2 3 pm

Contact hours

	Day	**Time**	**Delivery Mode**
Lectures	Tuesdays	12 pm 2 pm	Microsoft Teams Classroom
(Web stream)	Any	Any	Moodle
Tutorials			
(Weeks 1 - 10)	Thursday	1 pm 2 pm	Microsoft Teams Classroom
Labs/Quizzes			
(Weeks 4, 8, 10, 11 only)	Mondays	12 pm 2 pm	Moodle/Microsoft Teams

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**
1.	Develop an understanding of the purpose of control systems and their use.	PE1.1
2.	Be able to understand that a plant is given and a control system is to be designed to satisfy performance specifications.	PE1.1
3.	Be thoroughly conversant with the available design methodologies and have the ability to choose the appropriate design methods to design a control system.	PE2.2
4.	Have a thorough understanding of the control system application environment and be able to implement the designed control systems.	PE2.3

4. Teaching strategies

Teaching of this course is through Microsoft Team Classrooms. The majority of the lecture content is available as pre-recorded videos. The students are expected to watch these pre-recorded videos and complete minor quizzes before the lecture time. The minor quizzes will award marks. During the lecture time a brief explanation of the weekly content is given and then students get an opportunity work out sample problems. Tutorial classes will also take place in Microsoft Teams classrooms. Laboratory exercises will be explained and data sets

5.

Week	Topic	Location	Suggested Readings
1	Introduction and How Control Systems Work	Microsoft Team	

Assignments

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