

COURSE INFORMATION

Department/ Faculty:	Control and Mechatronics Engineering/ Electrical Engineering	Page:	1 of 4
Course code:	SKEM 3742	Academic Session/Semester:	201718/2
Course name:	SPECIALISED 3RD YEAR LAB	Pre/co requisite (course name and code, if applicable):	
Credit hours:	2		

Course synopsis	3rd Year Laboratory is a required course for third year students in Bachelor of Engineering degree program. This course requires students to conduct four experiments in four different laboratories (i.e. Mechatronics Lab, Robotics Lab, Instrumentation Lab and Applied Control Lab). This laboratory is conducted as a Project Based approach. The students are grouped into 3-4 students, and they will be given problems to solve that require them to conduct experiments in-lab and out-of-lab within three weeks. The students are required to solve the given project as a team, design suitable experimental procedures and conduct the experiments, present the problem solutions and submit a report following the IEEE standard journal format.			
Course coordinator (if applicable)	Dr. Shaharin Fadzli Bin Abd Rahman			
Course lecturer(s)	Name	Office	Contact no.	E-mail

Mapping of the Course Learning Outcomes (CLO) to the Programme Learning Outcomes (PLO), Teaching & Learning (T&L) methods and Assessment methods:

No.	CLO	PLO (ICGPA CODE)	Weight (%)	*Taxonomies and **generic skills*	T&L methods	***Assessment methods
CLO1	Use appropriate techniques, skills, and modern engineering tools, instrumentation, software and hardware necessary for solving complex engineering problem with understanding of their limitations.	PLO4 (SCMT)	17	C3, P3, A2	Project	Inlab Activities (Proficiency Score) & Group Demo (Flow)
CLO2	Conduct experiments, perform analysis and interpret data for complex engineering problem.	PLO2 (THI)	24	C4, P3, A2	Project	Inlab Activities (Analytical & Technical Scores)

Prepared by:	Certified by:
Name: Dr. Shaharin Fadzli Abd Rahman	Name:
Signature:	Signature:
Date: 11 Feb 2018	Date:

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CLO3	Articulate ideas; communicate effectively, in writing and verbally, on complex engineering problem	PLO6 (CS)	25	CS3	Project	Technical Reports (Individual and Group)
CLO4	Function effectively as an individual, and as a member or leader in diverse team	PLO7 (TW)	13	P4, TS	Project	InLab (Team Work Score), Peer Review
CLO5	Execute responsibility professionally and ethically	PLO11 (GCE)	6		Project	InLab (Discipline)
CLO6	Demonstrate knowledge and understanding of engineering and management principles to manage projects in multidisciplinary environments	PLO12 (ES)	15		Project	Group Proposal & Group Demo (Project Outcome)

Refer *Taxonomies of Learning and **UTM's Graduate Attributes, where applicable for measurement of outcomes achievement

***T – Test; Q – Quiz; HW – Homework; PR – Project; Pr – Presentation; F – Final Exam etc.

Details on Innovative T&L practices:

No.	Type	Implementation
1	Problem-based learning	Students will be given problems to solve that require them to conduct experiments in-lab and out-of-lab within three weeks. The students are required to solve the given project as a team, design suitable experimental procedures and conduct the experiments, present the problem solutions and submit a report following the IEEE standard journal format

Weekly Schedule:

Week 1	Registration, briefing and grouping
Week 2	Project 1 (Mechatronics Lab) Group discussion / Proposal / Interview
Week 3	Experiment / Data Collection / Interview
Week 4	Data Analysis / Demonstration / Interview
Week 5	Project 2 (Robotics Lab) Group discussion / Proposal / Interview
Week 6	Experiment / Data Collection / Interview
Week 7	Data Analysis / Demonstration / Interview
Week 8	Mid-Semester Break

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Week 9	Project 3 (Instrumentation Lab) Group discussion / Proposal / Interview
Week 10	Experiment / Data Collection / Interview
Week 11	Data Analysis / Demonstration / Interview
Week 12	Project 4 (Applied Control Lab) Group discussion / Proposal / Interview
Week 13	Experiment / Data Collection / Interview
Week 14	Data Analysis / Demonstration / Interview
Week 15	Slot for lab replacement

Transferable skills (generic skills learned in course of study which can be useful and utilised in other settings):

Communication skill (written and verbal)
Team working
Analytical and problem solving skill

Student learning time (SLT) details:

Distribution of student Learning Time (SLT) Course content outline					Teaching and Learning Activities		TOTAL SLT
	Guided Learning (Face to Face)				Guided Learning Non-Face to Face	Independent Learning Non-Face to face	
CLO	L	T	P	O			
CLO1	-	-	-	8h	2h	5h	15h
CLO2				8h	2h	5h	15h
CLO3					4h	10h	14h
CLO4				8h	-	3h	11h
CLO5				8h	-	3h	11h
CLO6				4h	3h	7h	14h
Total SLT				36h	11h	33h	80h

	Continuous Assessment	PLO	Percentage	Total SLT
1	Group Proposal	ES	10	As in CLO6
2	Individual in-lab evaluation	SCMT, THI, TW, GCE	50	As in CLO1, CLO2, CLO4, CLO5
3	Individual report	CS	10	As in CLO3
4	Group Demonstration	ES	10	As in CLO6
5	Group Report	CS	15	As in CLO3
6	Peer Review	TW	5	As in CLO4

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Final Assessment		Percentage	Total SLT
-	-	0	0
Grand Total		100	80

L: Lecture, T: Tutorial, P: Practical, O: Others

Special requirement to deliver the course (e.g: software, nursery, computer lab, simulation room):

Laboratories to conduct experiment

Learning resources:

<p>Text book (if applicable) -</p> <p>Main references - Journals/books related to the given problems.</p> <p>Additional references -</p> <p>Online http://3yearlab.fke.utm.my/</p>
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Academic honesty and plagiarism:

As Assignments are individual tasks and NOT group activities (UNLESS EXPLICITLY INDICATED AS GROUP ACTIVITIES) Copying of work (texts, simulation results etc.) from other students/groups or from other sources is not allowed. Brief quotations are allowed and then only if indicated as such. Existing texts should be reformulated with your own words used to explain what you have read. It is not acceptable to retype existing texts and just acknowledge the source as a reference. Be warned: students who submit copied work will obtain a mark of zero for the assignment and disciplinary steps may be taken by the Faculty. It is also unacceptable to do somebody else's work, to lend your work to them or to make your work available to them to copy.

Other additional information (Course policy, any specific instruction etc.):

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Disclaimer:

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