

Electrical and Electronic Measurements

Basic Course Information			
Course Number	01005101	Subject Category	Compulsory IM
Class Format	Lecture	Credit Type and Number of Credits	1
Department	Mechatronics	Student Category	Year 3
Period of Study	Semester 2	Classes per Week	2
Required Materials			
Instructor	Sant Teawchim	Thasaddi Tanthong	

Course Objective
 This course provides students with introduction and basic knowledge of electrical and electronic measurements including basis of digital measurement, system of measurement and its standard.

Evaluation/Rubric	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
Signal Paths from Analog to Digital	Demonstrate very good knowledge of Signal Paths from Analog to Digital	Demonstrate good knowledge of Signal Paths from Analog to Digital	Lacks the appropriate knowledge of Signal Paths from Analog to Digital
Signal Paths from Digital to Analog	Demonstrate very good knowledge of Signal Paths from Digital to Analog	Demonstrate good knowledge of Signal Paths from Digital to Analog	Lacks the appropriate knowledge of Signal Paths from Digital to Analog
Sensor	Demonstrate very good knowledge of Sensor	Demonstrate good knowledge of Sensor	Lacks the appropriate knowledge of Sensor
Analog-to-Digital and Digital-to-Analog Conversions	Demonstrate very good knowledge of Analog-to-Digital and Digital-to-Analog Conversions	Demonstrate good knowledge of Analog-to-Digital and Digital-to-Analog Conversions	Lacks the appropriate knowledge of Analog-to-Digital and Digital-to-Analog Conversions

Relationship with Learning Outcomes
M2) Ability to design, propose and develop electrical and electronic systems for robotics/ mechatronic systems
 Please change
 Please change

Teaching Method
 Outline: Repeat of Explanation/Drill
 Class Format: Lecture and Drill
 Please Note: Students are required to ask any questions after sufficient self-learning

Course Plan	Semester 2	Contents and Method of Course	Goals	Related MCC
1st week		What is digital measurement	Explaining What is digital measurement	V-C 6 85 V-C 6 85
2nd week		Basic digital instruments	Explaining Basic digital instruments	V-C 6 85 V-C 6 85
3rd week		ADC in Arduino	Explaining ADC in Arduino	V-C 6 85
4th week		Signal paths from analog to digital (1)	Explaining Signal paths from analog to digital (1)	V-C 6 85
5th week		Signal paths from analog to digital (2)	Explaining Signal paths from analog to digital (2)	V-C 6 85
6th week		Signal paths from digital to analog (1)	Explaining Signal paths from digital to analog (1)	V-C 6 85
7th week		Signal paths from digital to analog (2)	Explaining Signal paths from digital to analog (2)	V-C 6 85
8th week		Review before the midterm examination	Explaining the past work	
9th week		Midterm Examination	For week 1 - 8	
10th week		Return Exam Papers and Feedback	Review and summarize learning	
11th week		Sensor (1)	Explaining Sensor (1)	V-C 6 85
12th week		Sensor (2)	Explaining Sensor (2)	V-C 6 85
13th week		Relay Module	Explaining Relay Module	V-C 6 85
14th week		Signal Condition	Explaining Signal Condition	V-C 6 85
15th week		Digital-to-Analog conversions (1)	Explaining Digital-to-Analog conversions (1)	V-C 6 85
16th week		Digital-to-Analog conversions (2)	Explaining Digital-to-Analog conversions (2)	V-C 6 85
17th week		Analog-to-Digital conversions	Explaining Analog-to-Digital conversions	V-C 6 85
18th week		Review before the final examination	Explaining the past work	
19th week		Final Examination	For week 11 - 18	
20th week		Return Exam Papers and Feedback	Review and summarize learning	

Do not

	Examination	Assessment	Midst Evaluation between students	Report	Inhibitor	Other
Basic Ability	0					
Technical Ability	0					
Disciplinary Ability	0					