EE5111/EE5060/EE5061

Selected Topics in Industrial Control & Instrumentation

EE5111

Selected Topics in Industrial Control & Instrumentation

EE5060

Sensors and Instrumentation for Automation

EE5061

Industrial Control and Programming

WEEK 1 to WEEK 6	EE5060 Sensors and Instrumentation for Automation	EE5111
RECESS WEEK		
WEEK 7 to WEEK 13	EE5061 Industrial Control and Programming	

EE5111/EE5060/EE5061

Target students:	**MSc, Meng/PhD**
Pre-Requisite:	**Background in feedback control systems or relevant experience**
Preclusions:	**EE5060, EE5061 (for EE5111)** **EE5111 (for EE5060 & EE5061)**

Module Description

- The module offers students timely and updated coverage of a wide range of topics relevant to common industrial practice and control, smart sensor and instrumentation tapping on the latest and diverse range of developments in the repertoire of the control group and collaborating companies and institution
- The nature of the module allows the flexibility for recent topics, problems and solutions to be shared with the students

Lecturers

- **Jiang Rui, Dr** elejiangrui@nus.edu.sg
  - Adjunct Lecturer, NUS
- **Murali Krishnan Thiagarajan, Mr** elemkt@nus.edu.sg
  - Adjunct Senior Lecturer, NUS
- **Huang Sunan, Dr** tslhs@nus.edu.sg
  - Senior Research Scientist, Temasek Laboratories@NUS
- **Liang Wenyu, Dr** liangwenyu@nus.edu.sg
  - Adjunct Assistant Professor, NUS

Lab Officer

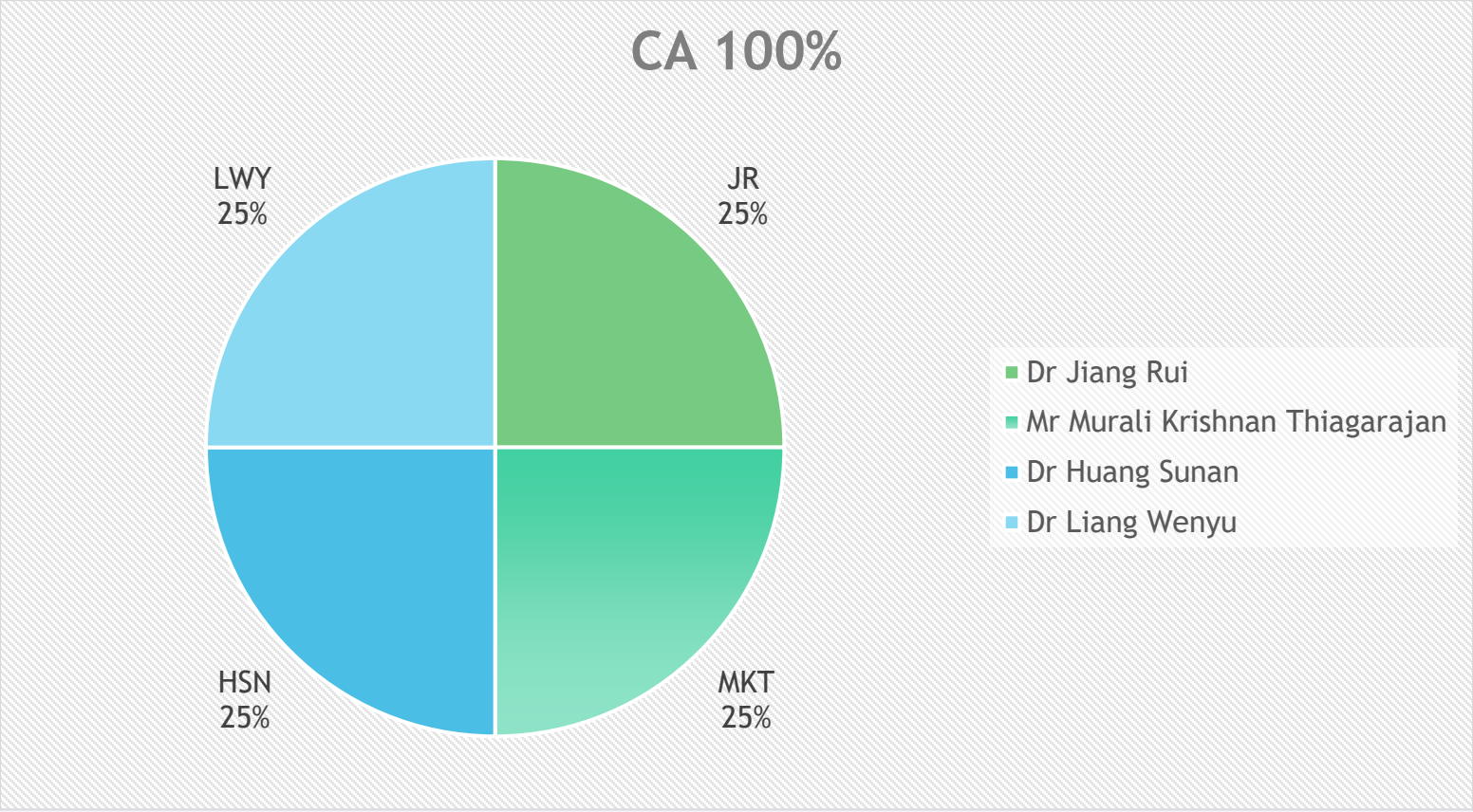
- **Tan Chee Siong, Mr** cheesiong@nus.edu.sg

Schedule

WEEK 1	Basics of Sensors and Instrumentation (Dr Jiang Rui)	Aug. 11, 2020
WEEK 2	Vision and Localization in Robotics and Autonomous Systems (Dr Jiang Rui)	Aug. 18, 2020
WEEK 3	Sensor Fusion (Dr Jiang Rui)	Aug. 25, 2020
WEEK 4	Fieldbus, Networking and Web Server (Mr Murali Krishnan Thiagarajan)	Sep. 01 2020
WEEK 5	Sensors, Wireless and IIoT (Mr Murali Krishnan Thiagarajan)	Sep. 8, 2020
WEEK 6	Force Sensing (Dr Liang Wenyu)	Sep. 15, 2020
RECESS WEEK		
WEEK 7	Advanced PID Control and Tuning (Dr Liang Wenyu)	Sep. 29, 2020
WEEK 8	Precision Motion Systems (Dr Liang Wenyu)	Oct. 06, 2020
WEEK 9	Fault Diagnosis and Fault Tolerance Control I (Dr Huang Sunan)	Oct. 13, 2020
WEEK 10	Fault Diagnosis and Fault Tolerance Control II (Dr Huang Sunan)	Oct. 20, 2020
WEEK 11	Fault Diagnosis and Fault Tolerance Control III (Dr Huang Sunan)	Oct. 27, 2020
WEEK 12	Industrial Application (Mr Murali Krishnan Thiagarajan)	Nov. 03, 2020
~~WEEK 13~~	~~**Lab Session: Introduction to ROS** (Dr Liang Wenyu)~~	optional

Assessment

- **100% CA**
  - mainly from assignments, or project reports



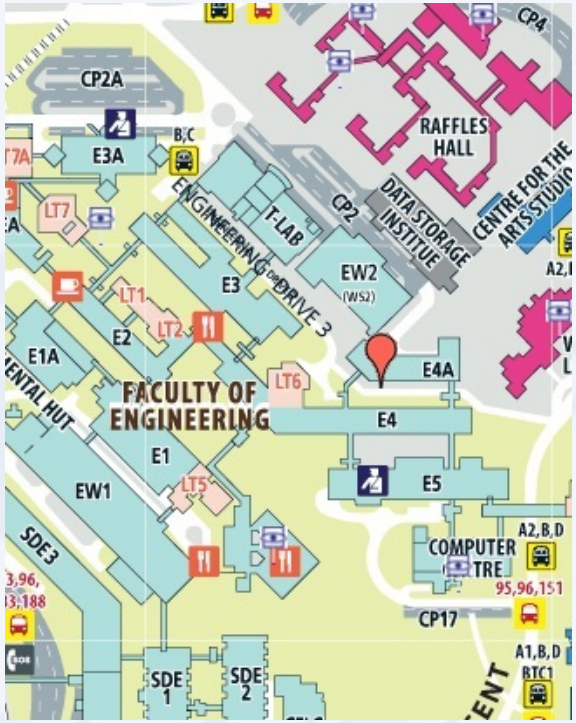
Assessment

WEEK			2021 Sem 1	% of CA Marks
1	EE5111 (EE5060)	Basics of Sensors and Instrumentation	Dr Jiang Rui	25% (CA1)
2		Vision and Localization in Robotics and Autonomous Systems	Dr Jiang Rui	
3		Sensor Fusion	Dr Jiang Rui	
4		Fieldbus, Networking and Web Server	Mr Murali Krishnan Thiagarajan	20% (CA2)
5		Sensors, Wireless and IIoT	Mr Murali Krishnan Thiagarajan	
6		Force Sensing	Dr Liang Wenyu	5% (CA3a)
Recess				
7	EE5111 (EE5061)	Advanced PID Control and Tuning	Dr Liang Wenyu	20% (CA3b)
8		Precision Motion Systems	Dr Liang Wenyu	
9		Fault Diagnosis and Fault Tolerance Control I	Dr Huang Sunan	25% (CA4)
10		Fault Diagnosis and Fault Tolerance Control II	Dr Huang Sunan	
11		Fault Diagnosis and Fault Tolerance Control III	Dr Huang Sunan	
12		Industrial Application	Mr Murali Krishnan Thiagarajan	5% (CA5)

Other Information

- **Lab Location: Mecahtronics & Automation Lab**

  BLK E4A, Level 3, 3 Engineering Drive 3,
  Singapore 117582
  http://ece.nus.edu.sg/mal/



- **LumiNUS**

  https://luminus.nus.edu.sg/

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