

Preparatory course for Fundamentals of Engineering Examination (Electical) Schedule 2022

JULY 2022

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4	5	6	7	8	9
Prof Wang Youyi EE 101/201 6.30pm - 10.30pm	Prof Wang Youyi EE 101/201 6.30pm - 10.30pm	Prof Wang Youyi EE 101/201 6.30pm - 8.30pm	Prof Wang Peng EE 201 6.30pm - 10.30pm	Prof Wang Peng EE 201 6.30pm - 10.30pm	Hari Raya Haji
11	12	13	14	15	16
Dr So Ping Lam EE 101 6.30pm - 9.30pm	Dr So Ping Lam EE 101 6.30pm - 9.30pm	Dr So Ping Lam EE 101 6.30pm - 9.30pm	Dr So Ping Lam EE 101 6.30pm - 9.30pm		

AUGUST 2022

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
15	16	17	18	19	20
					Prof Ali Iftekhar Maswood EE 101 9.00am - 1.00pm

Date	Module	Topics	Topics Detail	Hrs
4 & 5 July 6.30pm - 10.30pm 6 July 6.30pm - 8.30pm	EE 101 Principles of Power Engineering	Fundamental of Power System	Energy sources. Per unit system. Power system components and representation: synchronous generators, transmission lines and cables. Load representations. Power transfer.	2.0
		Power Flow Modelling	System components modelling. Formulation of power flow equations. Methods of power flow solution. Case studies.	2.0
		Active Power and Frequency Control	Governor control systems. Area control errors and load frequency control. Energy offers. Transmission losses, penalty factors and loss coefficients. Economic dispatch. Automatic generation control. Electricity market environment. Active power control devices.	2.0
	EE 201 Power System Analysis and Utilizations	Reactive Power and Voltage Control	Production and absorption of reactive power. Methods of voltage control. Reactive power and voltage control devices. Application to transmission and distribution systems.	2.0
		Analysis of Unsymmetrical Faults	Three-phase faults and fault level calculations. Symmetrical components. Sequence impedances and sequence networks. Unsymmetrical faults.	2.0
Date	Module	Topics	Topics Detail	Hrs
7 - 8 July 630pm - 1030pm	EE 201 Power System Analysis and Utilizations	Electric Power Distribution Systems	Distribution system configurations. Primary and secondary distribution. Ring, radial and inter-connected systems. Distribution substation layout. Planning criteria and network design. Fault diagnosis and restoration of supply. Expert system applications.	2.0
		Building Services Engineering	Estimation of power demand. LV cables and busway systems. Conductor sizing factors. Circuit protective conductor. Earth leakage and touch voltage. Inspection and testing. Lightning protection.	2.0
		General Protection Principles	Basic protection principles Instrument transformers. Coordination of overcurrent and earth protection for distribution systems. Pilot-wire differential protection of feeders.	2.0
		Applications of High-voltage Engineering	Acceptance and routine tests on apparatus. Fault locating methods. Condition monitoring and aging assessment. Case studies.	2.0
Date	Module	Topics	Topics Detail	Hrs
11 - 14 July 6.30pm - 9.30pm	EE 101 Principles of Power Engineering	Three-phase Circuits and Systems	Review of single-phase circuits. Three-phase voltage generation. Phasor diagrams. Wye and delta connections. Balanced three-phase loads. Active, reactive and apparent power. Power measurements. Power factor correction.	3.0
		Magnetism and Magnetic Circuits	Magnetic fields. Magnetic materials and magnetization curves. Magnetic equivalent circuits. Electromagnetic induction. Sinusoidal excitation. Magnetic losses.	3.0
		Transformers	Ideal transformer. Equivalent circuits. Phasor diagrams. Determination of parameters. Performance evaluation. Autotransformers. Three-phase transformers.	3.0
			continue from previous topic	3.0
Date	Module	Topics	Topics Detail	Hrs
20 Aug 9.00am - 1.00pm	EE 101 Principles of Power Engineering	AC and DC Machines	DC Machines: operating principle, voltage and torque equations, classification, torque-speed characteristics, losses and efficiency. Three-phase induction motors: operating principle, equivalent circuit, torque-speed characteristics, losses and efficiency.	2.0
		Power Electronics and Drives	Introduction to power conversion. Harmonics. AC to DC conversion. DC to DC conversion. DC to AC conversion. DC servo motor drive systems. AC variable-speed induction motor drive systems. Permanent magnet and stepping motor drive systems.	2.0