



## Year 1 Semester 1

### Course: EEE3243 Circuit Theory I

#### Synopsis:

Topics to be covered include fundamental concepts of electricity, network theorems, poly-phase circuits, electrostatics, electromagnetism, simple RC and RL circuits and introduction to alternating voltage and current.

### Course: EEE3213 Introduction to Electronics

#### Synopsis:

The module encompasses analogue electronics and fundamental theory of semiconductors, diodes, transistors and operational amplifiers with their applications.

### Course: EEC3683 Mathematics I

#### Synopsis:

This is a pre-calculus algebra subject designed to prepare engineering students to advance calculus and engineering mathematics. The module encompasses arithmetic and algebra, polynomials evaluation and factorisation, linear and simultaneous linear equations, partial fractions, number system, complex numbers, matrices and trigonometry.

### Course: EEE3643 Engineering Science

#### Synopsis:

The topics that will be covered in this subject are fundamental concepts for the principles of mass and energy balance, engineering thermodynamics, fluid mechanics and heat transfer.

### Course: UCS3112 Communication in the Workplace

#### Synopsis:

This course comprises of basic knowledge and skills in workplace communication, providing a fundamental exposure and guide to the various forms of communication in the workplace covering both verbal communications and written communication. These include practice in conveying ideas and opinions, writing proposals and business letters, preparing reports, oral communication and presentation.

### Course: MPU3113 Hubungan Etnik

#### Synopsis:

This course focuses on concepts of culture and ethnic relations, specially emphasises on the latest development in Malaysia. It includes the concepts of ethnic relations, insights of ethnic relations in Malaysia in the aspects of economics, politics, constitutions and religions in Malaysia. It also discuss about the challenges for the enhancement of the ethnic relation and the roles of the government and the society.

### Course: MPU3412 Co-curriculum

#### Synopsis:

Students participate in clubs to gain opportunity of training and learning of specific techniques and skills related to the themes of the clubs. Students are also encouraged to manage the clubs and organise events for the clubs. This allows students to practice effective communication skills, both verbally or written, polish managerial skills while becoming leaders and managing events in the clubs, and cultivate awareness on lifelong learning while exposing to well-diversity of knowledge, skills and techniques.



## PROGRAMME SYNOPSIS

### Year 1 Semester 2

#### **Course: EEE3253 Circuit Theory II**

**Synopsis:**

Topics to be covered include analysis of steady state AC circuit, 3 phase circuits, Laplace transform, frequency response and 2-port circuits.

#### **Course: EEC3223 Field Theory**

**Synopsis:**

The module encompasses the fundamental theory of electromagnetism which will finally culminate in the introduction of Maxwell's Equations.

#### **Course: EEE3613 Engineering Mechanics**

**Synopsis:**

The module encompasses fundamental theory of dynamics and statics with their applications to solve mechanical problems.

#### **Course: EEC3653 Mathematics II**

**Synopsis:**

This subject will build on the knowledge gained in Mathematics I. It is designed to provide the students with the knowledge of mathematical sequences and series, vector, lines and planes, basic differentiation and integration that are applicable to civil engineering practices. Topics include Vector, Series, Geometry, Numerical Methods, Statistics, Differentiation and Integration.

#### **Course: EEE3542 EE Engineering Laboratory I**

**Synopsis:**

This course encompasses laboratory experiments and demonstration of fundamental principles and theories of basic electricity theorems, electronic devices, circuits and network, and field theory.

#### **Course: MPU3123 TITAS**

**Synopsis:**

This course focuses on concepts of culture and ethnic relations, specially emphasises on the latest development in Malaysia. It includes the concepts of ethnic relations, insights of ethnic relations in Malaysia in the aspects of economics, politics, constitutions and religions in Malaysia. It also discuss about the challenges for the enhancement of the ethnic relation and the roles of the government and the society.

#### **Course: UCS3122 Professional English: Essential Communication Skills**

**Synopsis:**

This course provides a comprehensive reference guide on technical communication principles, skills and practice in workplace. It explains the principles of effective communication, both written and oral, and provides solid advice and practical guidelines on how to strengthen communication skills and produce good technical and business writing. It introduces the theory, specimen documents, suggested layouts and explanations that develop skills and understanding.



## PROGRAMME SYNOPSIS

### Year 2 Semester 1

#### **Course: EEE3313 Signals & Systems**

##### **Synopsis:**

The module encompasses fundamental theory and analytical methods of signals and systems, and the use of various transform methods for engineering solutions.

#### **Course: EEE3513 Measurement & Instrumentation**

##### **Synopsis:**

This module encompasses fundamental theory and application of sensors/devices and their instrumentation for measurements problems in engineering and science. This also emphasizes on the practical aspects of preparing and presenting experimental results in report.

#### **Course: EEE3233 Analog Electronics**

##### **Synopsis:**

The module encompasses fundamental theory and technique of electronic communications and the principle of various communication systems and their applications.

#### **Course: EEE3413 Digital Electronics**

##### **Synopsis:**

The module encompasses fundamental theory of digital electronics systems, number systems, combinational circuit, flip flops and counter design.

#### **Course: EEC3663 Mathematics III**

##### **Synopsis:**

This course will build on the knowledge gained in Mathematics II. Topics include Series, Differentiation, Integration, Statistics, First Order Differential Equations and Laplace Transform.

#### **Course: EEC3632 Engineering Programming**

##### **Synopsis:**

The students will be given an introductory subject to basic computer software and computer Programming to solve simple engineering problems. Topics include: Introduction to Microsoft Words and Preparation of Report, formal letter etc, Introduction to Computer Programming – Excel Spreadsheet and Problem Solving, Microsoft Project and Project Scheduling.



## PROGRAMME SYNOPSIS

### Year 2 Semester 2

#### **Course: EEE3522 Control System Analysis**

##### **Synopsis:**

This module covers the role of control system and its applications as widely used in industries. It gives the main types of control analysis and design to relate to the real world engineering problems using Engineering Software package. This includes the introduction to Mathematical Model, System Response and System Stability, Performance Specification of first and second order systems, Frequency plots and Root Locus analysis, Modern control technique and application. It also provides the basis for further study in more specialist areas of modern control systems.

#### **Course: EEE3123 Power Electronics**

##### **Synopsis:**

This module will provide the knowledge and understanding of power electronics so that the students are able to recognize the importance of power electronics devices in electrical system by studying their characteristics, operations and applications. The contents of the module also include the power electronic systems operation and application for efficiency design.

#### **Course: EEE3133 Electrical Machines**

##### **Synopsis:**

The module encompasses fundamental theory electromagnetism and the principle of various types of electric machines, drives and their applications.

#### **Course: EEC3423 Microprocessor System**

##### **Synopsis:**

The module encompasses fundamental concept of microcomputer and microprocessor system, interconnection within the system and IOs.

#### **Course: EEC3972 Engineering Graphics**

##### **Synopsis:**

This course provides training to students to produce technical detailing drawings using AutoCAD. The applications, tools, commands and functions in the CAD software are introduced. Demonstrations are given to show the approaches that different CAD tasks are carried out, and exercises are provided to allow students to practice the usage of the software.

#### **Course: EEC3672 Engineering Statistics**

##### **Synopsis:**

The module encompasses fundamental of statistics, elements of probability theory, random variable, probability distribution, sampling theory, point and interval estimations, hypothesis testing, regression and correlation.

#### **Course: EEE3962 EE Engineering Laboratory II**

##### **Synopsis:**

This course encompasses laboratory experiments and demonstration of fundamental principles and theories of basic electricity theorems, electronic devices, circuits and network, and field theory.



## PROGRAMME SYNOPSIS

### Year 3 Semester 1

#### **Course: EEE3113 Power Systems**

##### **Synopsis:**

This module contains the elements that can develop student's understanding in the operation of complex electrical power systems. The topics are generation, transmission of the electrical energy, method of fault analysis and method of the load flow analysis in the power systems.

#### **Course: EEE3143 Electrical Drives**

##### **Synopsis:**

Electrical Drives is to introduce to the students on the application of modern electrical drives. It contains the elements that can develop student's understanding in the operation of power electronics converters, DC motor drives and ac induction motor drives by modeling and simulation technique using Matlab/SIMULINK.

#### **Course: EEE3193 Industrial Automation**

##### **Synopsis:**

This module covers the basic theories, programming languages and possible applications of PLCs to the field of industrial automation.

#### **Course: EEE3433 Microcontroller & Interfacing**

##### **Synopsis:**

The module encompasses fundamental theory and design stages of the embedded systems and applications.

#### **Course: MPU3212 Malaysian Economy**

##### **Synopsis:**

This course provides the student with an overview of the Malaysian economy, the role of the government and its economic interaction with other countries. Various topics will be discussed, including: the government economic policies and activities (primary, secondary and tertiary), Collin Clark's hypothesis of economic development, key growth engines of Malaysian economy towards high income economy (Iskandar, NCER, ECER, SCORE, and SDC), and Economic Transformation Programme (ETP).

#### **Course: ETE3722 Industrial Safety & Health**

##### **Synopsis:**

The module covers basic practical safety such as electrical, fire, environment safety as well as occupational safety and health.

#### **Course: EEC3712 Basic Accounting & Finance**

##### **Synopsis:**

This course introduces students to the basic concept in accounting and financial management within a firm. Emphasis will be on the general theories and practices in accounting as well as analysis and interpretation of the financial statements.



## PROGRAMME SYNOPSIS

### Year 3 Semester 2

#### **Course: EEE3153 High Voltage Engineering**

##### **Synopsis:**

This module develops the ability to describe mathematically for electromagnetic waves, as well as to balance out the student's technical skills and soft skills.

#### **Course: EEE3323 Communication Systems**

##### **Synopsis:**

The module encompasses fundamental theory and technique of electronic communications and the principle of various communication systems and their applications.

#### **Course: EEE3183 Power System Transient**

##### **Synopsis:**

The module encompasses over voltages or surges, these surges on the equipment and their impact on the power supply grid.

#### **Course: MPU3312 Entrepreneurship Skills**

##### **Synopsis:**

This course also provides an understanding of an individual as entrepreneur and the process of creating and growing a new venture. The topics include theory of entrepreneurship, types of entrepreneurship, the importance of entrepreneurship and factors affecting entrepreneurship, entrepreneurship develop in Malaysia, entrepreneurial creativity and innovation, opportunity identification, business plan, business support system and form of business entities and relate legal requirements.

#### **Course: UCS3132 Green Technology**

##### **Synopsis:**

This subject explores the green technology with basic knowledge and fundamental green principles in recycling, green home living, green daily life, green buildings, alternative energy, green transportation, green business and green economics.

#### **Course: EEE3972 EE Engineering Laboratory III**

##### **Synopsis:**

This course encompasses laboratory experiments and demonstration of fundamental principles and theories of basic electricity theorems, electronic devices, circuits and network, and field theory.

### Year 3 Semester 3

#### **Course: EEE3935 Industrial Training**

##### **Synopsis:**

Ten weeks on job training at (any of the following) material suppliers, consulting or construction firms, development firms, government department and statutory bodies related to mechanical engineering practices. Nature of works encompasses site supervisions, measurements, contract administrative works etc. Work experience is recorded in work diary, training report and presentation upon completion.



## PROGRAMME SYNOPSIS

### Year 4 Semester 1

#### Course: EEE3912 Engineering Final Year Project I

##### Synopsis:

This course will determine student ability to apply and practice the knowledge and skills learned. Student will be required to propose a project with an appropriate planning, costing and its rationalization in order to implement the project in the following semester. Student will have to present and defend their project proposal for approval.

#### Course: EEE3163 Power System Control & Analysis

##### Synopsis:

The module encompasses the day to day operation of the power system and the control actions to be implemented on the system in order to meet the minute-to-minute variation of system load demand.

#### Course: EEC3552 Project Management

##### Synopsis:

Overview of management theories, Inception Stage, Feasibility Stage, Strategy Stage, Pre-Construction Stage, Construction Stage, Engineering Services Commissioning Stage, Completion, Handover and Occupation Stage, Post-Completion and Review, Project Close Out Stage.

#### Course: EEE3942 Engineers in Society

##### Synopsis:

This course will cover topics on link between Engineers and Society, Ethical and Moral Standards demanded in Society, Health and Safety Issues, Professional Practice, Legal Issues, Communication Skills and Management.

#### Course: UCS3412 Bahasa Kebangsaan

##### Synopsis:

Kursus ini membolehkan pelajar mempertingkatkan kecekapan berbahasa sesuai dengan intelek pelajar untuk berkomunikasi secara lisan dan tulisan dalam konteks rasmi, kreatif dan bukan kreatif. Mata pelajaran ini disediakan untuk mempertingkat kecekapan berbahasa sesuai dengan intelek pelajar untuk berkomunikasi dengan lisan dan tulisan dalam konteks rasmi, kreatif dan bukan kreatif.

### Year 4 Semester 2

#### Course: EEE3924 Engineering Final Year Project II

##### Synopsis:

This course is the continuation of Engineering Final Year Project 1 and will be focusing on the execution of the approved project proposal. At the end of the semester, student will have to present and defend their project supported with relevant data and theories.

#### Course: EEE3173 Power System Protection

##### Synopsis:

This unit is designed to instill a strong understanding of basic wiring, important factors in managing or designing electrical systems in buildings and the occupational safety systems to ensure public protection in the use of the



### **PROGRAMME SYNOPSIS**

facilities provided. . Subjects given topic focused on the act and the regulations have been established and standardized by national and international standards. Students are also exposed to the calculation of the appropriate protection of circuit breakers, cables, earthing and other related electrical systems in buildings.

#### **Course: UCS3212 Creativity and Innovation**

##### **Synopsis:**

This subject explores the creativity and innovation of thinking skills with an exposure of principles of thinking, methods of generating ideas, creativity in problem solving techniques, creativity in writing as well as giving the experience of producing creative and innovative product through project given.