

STUDENT HANDBOOK EE200

BACKGROUND OF THE FACULTY

Universiti Teknologi MARA is an institution of higher learning that offers professional programmes which integrate science, industry and technology. During its early establishment in 1968, Faculty of Electrical Engineering was one of the departments in the School of Engineering. The department started off with offering Advanced Diploma in Electrical Engineering and followed by the Diploma in 1976.

In August 1996, Department of Electrical Engineering was upgraded to the Faculty of Electrical Engineering and the advanced diploma programme was renamed as the Bachelor of Engineering with Honours (Electrical). When the University obtained its university status in October 1996 (the university was formally known as Institut Teknologi MARA), the faculty started to offer the post graduate programmes namely Master of Science in Electrical Engineering by research and Doctor of Philosophy in Electrical Engineering.

VISION AND MISSION OF UiTM

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| Vision | : | To establish UiTM as a Globally Renowned University of Science, Technology, Humanities and Entrepreneurship |
| Mission | : | To lead the development of agile, professional bumiputeras through state-of-the-art curricula and impactful research |

VISION AND MISSION OF FKEPP

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| Vision | : | To be a renowned faculty based on academic excellence towards leading and realizing the vision of the nation in becoming dynamic, progressive and global in the field of electrical engineering through the world class Programme offered in order to produce electrical engineers who are competitive, global and ethical. |
| Mission | : | To uphold and enhance the intellectual level of the nation in electrical engineering profession that assimilate between spiritual and noble values through the transfer of knowledge, research work, and community service based on moral values and professional ethics of an engineer. |

FUNCTIONS OF THE FACULTY

The main functions of the faculty in upholding the government policy towards establishing Universiti Teknologi MARA as a premier university are as follow:

- a) Teaching and Learning – to produce professional workforce in the area of electrical engineering.
- b) Research and Consultancy – to foster a strong relationship with the industry in order to enhance the knowledge and expertise in the current technology through research and consultancy.
- c) Publication – to transfer and contribute to the pool of knowledge through the publications.
- d) Community Services – to serve the community, aligned with the social obligation of the university towards the nation.

DEPARTMENTS IN THE FACULTY

There are five departments in the faculty:

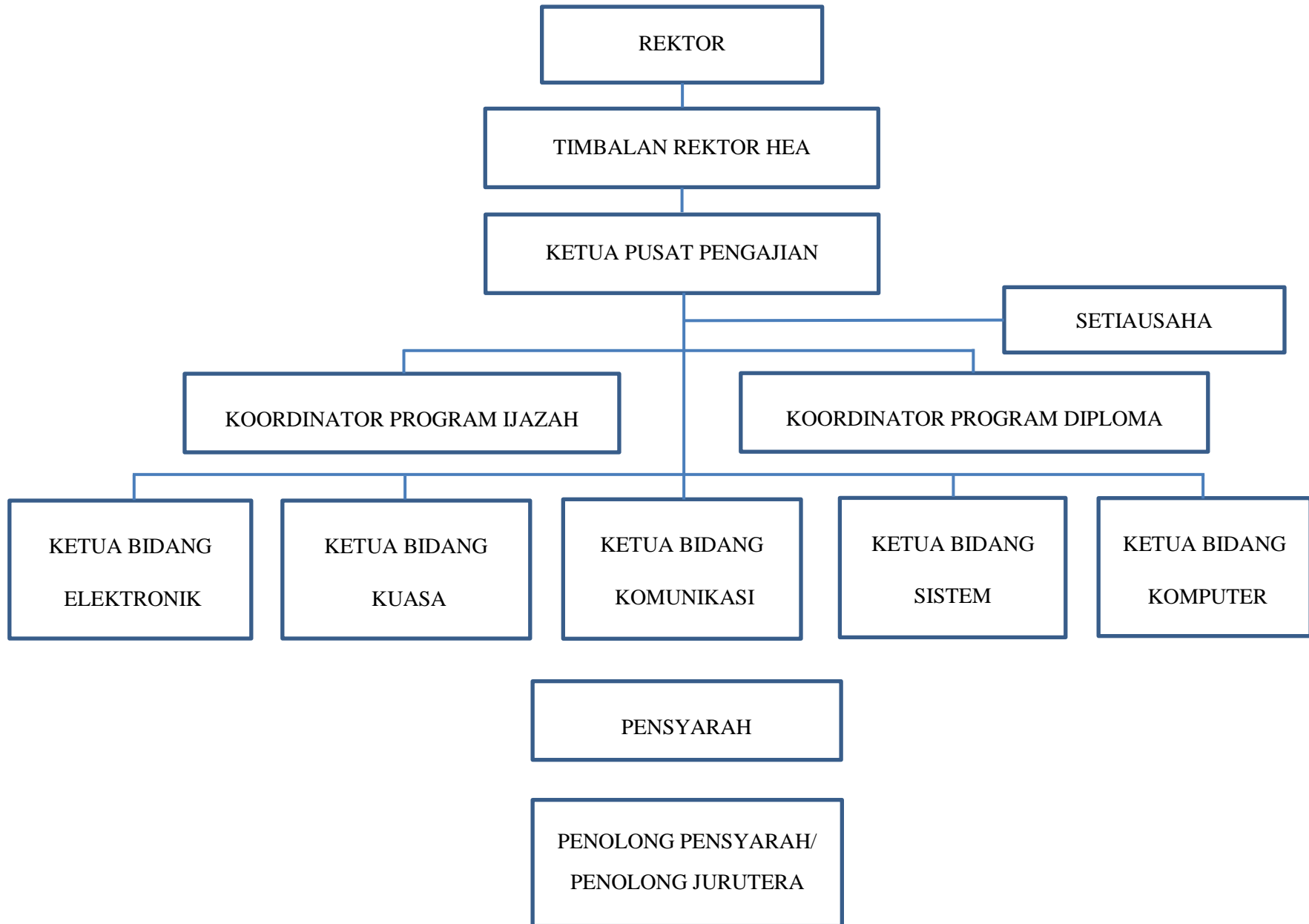
- a) Electronic Engineering
- b) Power Engineering
- c) Systems Engineering
- d) Communications Engineering
- e) Computer Engineering

PROGRAMMES OFFERED

The faculty offered the following programmes:

- a) Bachelor of Engineering (Hons.) Electrical and Electronic Engineering (EE200)
- b) Diploma in Electrical Engineering (Electronics) (EE111)
- c) Diploma in Electrical Engineering (Power) (EE112)

**ORGANIZATION STRUCTURE
FACULTY OF ELECTRICAL ENGINEERING**



FACULTY OF ELECTRICAL ENGINEERING

BACHELOR OF ENGINEERING (HONS.) ELECTRICAL AND ELECTRONIC ENGINEERING (EE200)

Programme Educational Outcomes (PEO)	
PEO1	Electrical and Electronic engineers who apply knowledge, understanding and technical skills of electrical and electronics engineering in providing services to the industries. (PO1, PO5)
PEO2	Electrical and Electronic engineers who integrate values, attitudes, professionalism and social responsibilities in engineering practices. (PO6, PO7, PO8)
PEO3	Electrical and Electronic engineers who alternately adopt the role as leaders and team members and effectively communicate issues and scientific solutions in solving complex engineering problems. (PO2, PO3, PO4, PO9, PO10)
PEO4	Electrical and Electronic engineers who proactively acquire new knowledge and skills for career advancement and innovatively manage information and resources. (PO11, PO12)

Programme Outcomes (PO)	
PO1	Apply knowledge of mathematics, science and engineering fundamentals to the solution of complex electrical/electronic engineering problems.
PO2	Identify, formulate, research literature and analyse complex electrical/electronic engineering problems reaching substantiated conclusions.
PO3	Ability to design solutions for complex electrical/electronic engineering problems with appropriate consideration for public health and safety, culture, society, and environment.
PO4	Ability to conduct investigation into complex electrical/electronic problems using research based knowledge and research methods.
PO5	Ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, involving complex electrical engineering activities.
PO6	Ability to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.
PO7	Identify the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
PO8	Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
PO9	Ability to communicate effectively on complex electrical/electronic engineering activities and write effective reports including design documentation and presentations.
PO10	Function effectively as an individual, and as member or leader in diverse teams and in multidisciplinary settings.
PO11	Recognise the need for, and have the preparation and ability to engage in independent and life-long learning.
PO12	Demonstrate knowledge and understanding of engineering and management principles, and work as a member and leader in a team to manage projects and in multidisciplinary environments.

B. Eng. (Hons.) Electrical and Electronic Engineering (EE200) Programme Structure

COURSE COMPONENT	SEMESTER 1			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
UNIVERSITY	HBU111	Co-Curriculum 1	1	2	0	0	2
FACULTY	MAT435	Calculus for Engineers	3	3	1	0	4
	EEE411	Circuit Theory	3	3	1	0	4
	ESE411	Signals and Systems	3	3	1	0	4
	ECM413	Basic Communication Engineering	3	3	1	0	4
	ECE411	Computer Programming	3	2	0	2	4
	TOTAL		16	16	4	2	22
COURSE COMPONENT	SEMESTER 2			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
UNIVERSITY	HBU121	Co-Curriculum 2	1	2	0	0	2
	CTU552	Philosophy and Current Issues	2	2	0	0	2
FACULTY	ELE414	Electronics	3	3	1	0	4
	EPO414	Basic Power Engineering	3	3	1	0	4
	ESE414	Basic Instrumentation and Control	3	3	1	0	4
	ECE414	Digital Systems 1	3	3	1	0	4
	EEE415	Electrical Engineering Laboratory 1	1	0	0	3	3
	TOTAL		16	16	4	3	23
COURSE COMPONENT	SEMESTER 3			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
UNIVERSITY	ELC590	English for Oral Presentations	2	2	0	0	2
	CTU554	Values and Civilization II	2	2	0	0	2
FACULTY	MAT455	Further Calculus for Engineers	3	3	1	0	4
	ELE511	Material and Semiconductors Devices	3	3	1	0	4
	ECE513	Multimedia Systems and Applications	3	2	0	2	4
	EPO514	Power Electronics	3	3	1	0	4
	TOTAL		16	15	3	2	20

COURSE COMPONENT	SEMESTER 4			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
FACULTY	MAT575	Introduction To Numerical Analysis	3	3	1	0	4
	ECM515	Electromagnetic Theory	3	3	1	0	4
	ECE515	Microprocessor Systems	3	2	0	2	4
	EPO554	Electrical Machines and Drives	3	3	1	0	4
	ELE557	Electronic Circuit Analysis and Design	3	3	1	0	4
	EEE515	Electrical Engineering Laboratory 2	1	0	0	3	3
	TOTAL		16	14	4	5	23
COURSE COMPONENT	SEMESTER 5			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
UNIVERSITY	HBU131	Co-Curriculum 3	1	2	0	0	2
	EWC661	English for Report Writing	2	2	0	0	2
FACULTY	STA408	Statistics for Engineering	3	3	1	0	4
	ECM551	Communication Systems Engineering	3	3	1	0	4
	ESE551	Control Systems	3	3	1	0	4
	EPO555	Electrical Power Utilisation	3	3	1	0	4
	EEE525	Electrical Engineering Laboratory 3	1	0	0	3	3
	TOTAL		16	16	4	3	23
COURSE COMPONENT	SEMESTER 6			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
UNIVERSITY	TAC401	Third Language (Level 1)	2	2	0	0	2
FACULTY	ESE553	Digital Signal Processing	3	3	1	0	4
	ELE558	Digital Design and Computer Architecture	3	3	1	0	4
	EPO552	Power System Analysis	3	3	0	1	4
	EEE535	Electrical Engineering Laboratory 4	1	0	0	3	3
ELECTIVE		Electives 1	3	3	1	0	4
	TOTAL		15	14	3	4	21
COURSE COMPONENT	SEMESTER 7			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
UNIVERSITY	TAC451	Third Language (Level 2)	2	2	0	0	2
FACULTY	EEE600	Final Year Project 1	2	0	0	4	4
	EEE611	Integrated System Design	3	1	0	4	5
	EPO616	High Voltage Engineering	3	3	1	0	4
ELECTIVE		Electives 2	3	3	1	0	4
		Electives 3	3	3	1	0	4
	TOTAL		16	12	3	8	23
FACULTY	EEE651	Industrial Training	4	0	0	0	0

COURSE COMPONENT	SEMESTER 8			HOUR			
	CODE	COURSE	CREDIT HOUR	L	T	LAB	CONTACT HOUR
UNIVERSITY	TAC501	Third Language (Level 3)	2	2	0	0	2
	ENT600	Technology Entrepreneurship	3	3	1	0	4
FACULTY	EEE650	Final Year Project 2	4	0	0	8	8
	EEE653	Electrical Engineer in Society	3	3	1	0	4
ELECTIVE		Elective 4	3	3	1	0	4
	TOTAL		19	11	3	8	20

List of Elective Courses According to Areas of Specialisation

Areas	Code	Elective Courses	Semester
Communication	ECM552	Digital Communication System	6
	ECM643	Mobile Radio Communications	7
	ECM645	Radio Frequency Design	7
	ECM644	Satellite Communication Systems	7
	ECM646	Special Topic in Communication Engineering	7
	ECM642	Antenna Design and Analysis	8
Computer	ECE553	Embedded Systems	6
	ECE640	Mobile and Sensor Computing	7
	ECE646	Computational Intelligence	7
	ECE645	Digital Image Processing	7
	ECE650	Special Topic in Computer Engineering	7
	ECE644	Data Communication and Computer Network	8
Electronic	ELE556	Integrated Circuit Design	6
	ELE614	VLSI System Design	7
	ELE615	Semiconductor Fabrication Technology	7
	ELE616	Special Topic in Electronic Engineering	7
	ELE613	Nanotechnology	8
Power	EPO553	Power System Operation and Control	6
	EPO614	Power Electronics Application	7
	EPO618	Electrical Energy Economics and Planning	7
	EPO619	Special Topic in Power Engineering	7
	EPO651	Power Quality	7
	EPO612	Renewable Energy	8
System	ESE554	Industrial Instrumentation	6
	ESE611	Process Control	7
	ESE613	Modern Control Systems and Design	7
	ESE616	Industrial Automation and Robotics	7
	ESE615	Special Topic in System Engineering	7
	ESE614	Intelligent Control Systems	8
Biomedical	EBM552	Biomedical Modelling and Simulation	6
	EBM612	Medical Instrumentation	7
	EBM613	Rehabilitation Engineering	7
	EBM614	Special Topic in Biomedical Engineering	7
	EBM611	Medical Imaging	8

COURSE DESCRIPTION

SEMESTER 1

1. EEE411-Circuit Theory

The course covers the basic network theory. It deals with direct current (DC) and alternating current (AC), basic theorem and electrical quantities relationship in circuit network, both in direct and alternating current and DC transient.

2. ESE411-Signals and Systems

The course introduces basic concepts of linear system. The emphasis will be on continuous-time signals and systems, Fourier series and Laplace transform. The above concepts are used in solving typical engineering problems.

3. ECM413- Basic Communication Engineering

This course provides students with a comprehensive treatment of the basic communications engineering to be covered through lectures, class discussions, tutorials and quizzes. These will be intensified through audio visual aids, samples and models wherever required.

4. ECE411- Computer Programming

This course provides an introduction to programming and its applications in solving general engineering numerical problems.

SEMESTER 2

1. ELE414- Electronics

This course introduces solid state and some basic electronic devices made from it followed by the operating concepts of the electronic devices, their characteristics and applications in simple electronic circuits.

2. EPO414- Basic Power Engineering

This course introduces the basis of electric power engineering. Aspects of power engineering included are characteristics of common electric machines, power system structure and apparatus, basic system modelling and basic load studies.

3. ESE414- Basic Instrumentation and Control

This subject covers measurement standard, transducers and signal conditioning. Second part of the subject will be focused on the aspect of control systems theory which includes mathematical modeling, stability and time domain analysis.

4. ECE414- Digital Systems

This course introduces the basic building blocks of practical digital systems. It includes techniques necessary for the design of simple digital circuits and the analysis of sequential circuits.

5. EEE415- Electrical Engineering Laboratory 1

This course provides the laboratory works for the courses such as Basic Instrumentation and Control, Digital System, Basic Communication Engineering, Basic Power Engineering, Electronics and Circuit Theory.

SEMESTER 3

1. ELE 511- Material and Semiconductor Devices

This course provides introduction to engineering material and basic understanding of the semiconductor physics leading to the operation of junction and field-effect devices. Device operation, physical behaviour and electrical properties of solid-state devices are covered.

2. ECE 513- Multimedia Systems and Applications

This course provides students with the essential knowledge on multimedia systems and applications. To develop knowledge and understanding of the underlying hardware and software developments which enable multimedia technology development.

3. EPO 514-Power Electronics

This course introduces the basis key aspects of power electronics, components and switching. Aspects of power electronics covered are power semiconductor devices, its operating characteristics and gate drive requirements; power conversion systems including rectifiers, inverters, DC choppers and AC regulator.

SEMESTER 4

1. ECM 515- Electromagnetic Theory

The course introduces basic electromagnetic theory through development of concepts and formulation of general laws and their application to specific problems.

2. ECE515- Microprocessor Systems

This course provides students with the essential knowledge on microprocessor systems and program design. The main topics provide guidelines on the operations of a microprocessor.

3. EPO 554- Electrical Machine and Drives

This course covers the basic of electrical machine and drives principle inclusive the starting method, braking method and speed control for DC motors and Induction motor.

4. ELE 557-Electronic Circuit Analysis and Design

The subject provides the concept of electronic circuit analysis and design that consists of multistage amplifiers, differential amplifiers, frequency response of op-amp, negative feedback amplifiers and operational amplifier integrated circuit design.

5. EEE 515-Electrical Engineering Laboratory 2

This laboratory course provides students with practical hands on experience with the concepts presented in class for courses such as Power Electronic and Drives and Electronics Circuit Analysis.

SEMESTER 5

1. ECM 551- Communication Systems Engineering

This course provides students with the principles of transmission lines, antenna and wave propagation. It also discusses mobile, satellite and optical communication concepts.

2. ESE 551- Control Systems

This course introduces students to the analytical methods in frequency and time domain. For the design of linear feedback system, it concentrates on root locus and frequency response techniques. The course of state variable and state equations are introduced so as to give an exposure to both the classical and modern control methods.

3. EPO 555-Electrical Power Utilisation

This course covers the distribution system, electrical installation practice, earthing system, illumination, heating and air conditioning. This course also used AutoCAD as a tool for electrical engineering drawing.

4. EEE 525- Electrical Engineering Lab 3

This laboratory course provides students with practical hands on experience with the concepts presented in class for courses such as Electrical Power Generation and Utilisation, Communication Systems Engineering, and Control Systems.

SEMESTER 6

1. ESE 553- Digital Signal Processing

This subject introduces the principles of digital signal processing. The students will be exposed to MATLAB mathematical software to generate computer implementations of the techniques for signals and systems analysis and design.

2. ELE 558- Digital Design and Computer Architecture

This course is to provide the student with the concept and skills necessary to design a digital system and computer architecture. The course covers on combinational logic circuits design, sequential logic circuits design, arithmetic building blocks design and memory arrays. It also discusses on computer architecture and micro-architectures. It introduces hardware description language (HDLs) by using commercial EDA tools to model the digital system design..

3. EPO 552- Power Systems Analysis

This course aims to provide a solid foundation for the study of power system modelling and its analysis. Fundamentals of fault analysis and system protection are also covered.

4. EEE 535-Electrical Engineering Laboratory 4

This laboratory course provides students with practical hands on experience with the concepts presented in Electronic Circuit Design, Power System Analysis, Digital Signal Processing, Electronic Circuit Design, and Power System Analysis class.

SEMESTER 7

1. EEE600- Final Year Project 1

The course is intended for students to take an individual project, which will be supervised by a member of the faculty with relevant expertise. The selected project will be a technical topic in electrical and electronics engineering. This course also introduces the students to the principles and techniques of scientific research. Students are required to conduct a library search and literature review for a project selected. In addition, students are expected to do project planning and preliminary experimental, computer simulation and theoretical investigation of the project. At the end of the course the students are expected to prepare a project proposal under the guidance of supervisor to be evaluated.

2. EEE 611- Integrated System Design

This course implements the Integrated Design Project which involve collaborative design project with end user or customer. Students are required to identify, translate and solve the engineering problems using suitable engineering system. Students also required communicating these solutions in oral presentations and written reports. It is aims to provide a comprehensive

design experience for students in a team-oriented format and to expose students to various economic, ethical and social effects related to their design project.

3. EBM612- Medical Instrumentation

The course introduces the principles of operation of various types of instrument involved in medical world. The discussion begins with the origin of bioelectric signal from human body. This is then followed by electrodes principles and the importance of amplifier in medical equipment.

4. EBM 613- Rehabilitation Engineering

This course introduces students to the rehabilitation engineering and clinical rehabilitation. The principles and terminology of rehabilitation engineering are introduced that covers the clinical rehabilitation practitioner and disability terminology. Emphasis is on the biomedical devices and interface, tool of neurerehabilitation, prosthetics and orthotics approaches and technologies.

5. EBM 614- Special Topic in Biomedical Engineering

This course will study a selected advanced topic and techniques of current interest in biomedical engineering. Teaching and learning will focus on concepts not included in the existing course syllabus and includes recent development and progress in the subject area.

6. ECM 643- Mobile Radio Communications

Mobile radio systems are used to provide a wireless link among mobile users. This course covers the cellular concept and radio wave propagation. It also provides knowledge in multiple access techniques and GSM architecture and standards.

7. ECM 645- Radio Frequency Design

The course introduces design methods for RF and microwave frequencies which is essential for communication engineering. The emphasis will be more on design work rather than theory.

8. ECM 644- Satellite Communication Systems

This course introduces an overview of satellite communications which includes satellite launching, satellite communication system concept, satellite link design, modulation technique, and multiple access technique and satellite services.

9. ECM 646- Special Topic in Communication Engineering

This course will study a selected advanced topic and techniques of current interest in communication engineering. Teaching and learning will focus on concepts not included in the existing course syllabus and includes recent development and progress in the subject area.

10. ECE 640- Mobile and Sensor Computing

This course covers the fundamental concepts, techniques and algorithms in designing mobile sensing applications for Internet of Things. The topics are overview of mobile sensing and computing, mobile sensing, sensor data analysis, multimodal recognition and mobile sensing applications

11. ECE 646- Computational Intelligence

The course introduces the principles, theories and implementations of computational intelligence techniques. Two commonly used computational intelligence tools artificial neural network and genetic algorithm will be described and used to design and analyze to solve specific engineering problem. This is to develop a foundation that can be used as the basis for further study and research.

12. ECE645- Digital Image Processing

The purpose of this course is to introduce the concepts and methodologies for digital image processing and to develop a foundation that can be used as the basis for further study and research.

13. ECE 650- Special Topic in Computer Engineering

This course will study a selected advanced topic and techniques of current interest in computer engineering. Teaching and learning will focus on concepts not included in the existing course syllabus and includes recent development and progress in the subject area.

14. ELE 615- Semiconductor Fabrication Technology

The subject serves as an introduction to semiconductor manufacturing technology. It covers fundamental IC fabrication process steps and the integration of the steps for different microelectronic device technology. Technology CAD simulation is implemented to aid learning of basic concepts. Technology trend in the semiconductor industry is introduced.

15. ELE 616- Special Topic in Electronic Engineering

This course will study a selected advanced topic and techniques of current interest in computer engineering. Teaching and learning will focus on concepts not included in the existing course syllabus and includes recent development and progress in the subject area.

16. ELE 614- VLSI System Design

The course focuses on the design of complex digital systems with an emphasis on hands-on chip design. It will cover both the bottom-up design approach and top down approach. It will cover the system level design for VLSI. This includes the circuits and performance estimations, combinational and sequential logic circuits design, system design methodology, data path subsystems, array subsystems and special purpose subsystems. The course will use hardware description language (HDL) and electronic design automation (EDA) tools in designing digital systems such as simple microprocessor.

17. EPO 618- Electrical Energy Economics and Planning

This subject introduces the economics aspects in power system in terms of its market requirement, effects of security and transmission to the electricity pricing and discusses the issues of investments in power generation and transmission equipment.

18. EPO 651- Power Quality

This subject deals with definitions and standards of power quality, kinds of power quality problems, sources of sags and transient overvoltages, harmonic distortion, principles for controlling harmonics, devices for filtering harmonics, time and frequency domain methods of analysis, Fourier, Walsh, and Hartley transforms, power quality monitoring and improvement.

19. EPO 614- Power Electronics Application

The power electronics course covers power conversion circuits which include rectifiers, AC voltage controllers, DC choppers, switched-mode inverters, harmonics, semiconductor devices and switching circuits.

20. EPO 619- Special Topic in Power Engineering

This course will study a selected advanced topic and techniques of current interest in power engineering. Teaching and learning will focus on concepts not included in the existing course syllabus and includes recent development and progress in the subject area.

21. ESE 613-Modern Control Systems and Design

This course introduces students to the analytical methods of control system design and analysis using state space techniques involving both SISO/MIMO linear and nonlinear systems. The course provides the student with standard undergraduate background in control theory and basic knowledge of stability concepts. Optimal and adaptive control techniques are introduced for the control system design.

22. ESE616-Industrial Automation and Robotics

This course introduces the principles and operational concepts of industrial automation and robotics that includes various types of sensors, actuators and controllers. The topics related to automation and robot system, movement, kinematics, dynamics and control will be discussed. The students will learn the practical aspects in designing and constructing industrial automation and robotics systems using appropriate tool and components.

23. ESE611- Process Control

The course is to expose the students on the plant process control schemes and strategies. The topic covers the process and instrumentation diagram, process system dynamics, controller tuning, system analysis and design strategy of control systems involves in industrial process control system. Computer simulation on operation of process control and industrial project design will also be included.

24. ESE615- Special Topic in System Engineering

This course will expose the students to the theoretical concept and practice of control technology in industry. The technology explained including PLC and automation, SCADA, distributed control system and computer controlled system.

SEMESTER 8

1. EEE 653- Electrical Engineer in Society

This course has been designed to accommodate the “engineer in Society” syllabus of the Institution of Engineers (IEM), Malaysia and Board of Engineers (BEM), Malaysia. Pre-selected engineering management topics from the original IEM/BEM syllabus have been omitted and other relevant topics are covered in the syllabus. Topics includes a wide range of management theories, concepts, Rules and Regulations, Acts, By-laws, Code of Practices, Local and International Standards and other related inter-relationships between the current role of the practicing consultants and supervising engineers, the society and environment at large and current engineering issues faced by engineers, society and environment related to engineering progress and development.

2. EEE 650- Final Year Project II

This subject is intended to enable student to design, construct and testing of project investigated in Project I. Student will submit a formal project report that will be based on work done during Project I and Project II.

3. EEE 652- Selected Industrial Topics

This course provides an exposure to current technologies available in Malaysian industries. Every student will choose three different topics on subjects related to his/her discipline. The period for each topic is 18 hours. Each topic will be conducted by lecturer from industry and who is very experienced in his/her own field. Some examples of the coverage for each topic include theoretical applications in industries, case studies, practical experiences, usage of high end equipment, etc.

4. EBM 611- Medical Imaging

The course introduces the basic principles and design of medical diagnostic imaging equipment. A few medical imaging technologies are covered such as X-rays, gamma rays, and computed tomography, fluoroscopy, mammography, projection radiography, magnetic resonance imaging, ultrasound, biomagnetic diagnostics, laser and optoelectronics.

5. ECM642- Antenna Design and Analysis

This subject aims to furnish a detailed treatment of microwave sub-systems and antennas, which form the backbone of transmission systems. The emphasis will be more towards design rather than analysis.

6. ECE 644- Data Communication and Computer Network

The purpose of this course is to introduce the concepts and methodologies for data communication and networking system, and to develop a foundation that can be used as the basis for further study and research.

7. ELE 613- Nanotechnology

The course is an introduction to nanotechnology covering nanofabrication, nanomaterials and its application.

8. EPO 612- Renewable Energy

This subject introduces renewable energy sources, its basic concept, underlying sciences and processes. The content relates to the local and global energy scenario, motivations, policies, practices and economic analysis in managing energy demand and addressing the environmental impact pertaining of renewable energy source.

9. ESE 614- Intelligent Control Systems

The course introduces the basic concepts, principles and theories of intelligent control system. Two commonly used intelligent control technique tools, fuzzy logic control and artificial neural network control will be describe. The techniques are used to design and analyse the specific engineering problem.

ACADEMIC REGULATION

(Should also refer to the booklet *Peraturan Akademik Diploma dan Sarjana Muda UiTM, pindaan 2017*)

- 1) Course registration
 - I. Registration must be done online through Student Information Gateway (*i-Student Portal*) by following the procedures prescribed by the University.
 - II. Total credit hours for student of Diploma and Degree must be **between 17-23 credit units** except for the semester of industrial training / final year students who will be graduating.
 - III. Undergraduate students in their final semester with status of Pass are allowed to take maximum of 24 credit units with the approval of Faculty Dean/Campus Rector for graduation.
 - IV. Diploma student with 'P' status is not allowed to register for more than twelve (12) credit units in specific semester
 - V. Undergraduate student with 'P' status is not allowed to register for more than fifth teen (15) credit units in specific semester.
- a. Add/Drop Course
 - i. Add Course

Students who have already registered for a course can apply to add course through online by following the procedures prescribed by the University.
 - ii. Drop Course

Student who has already registered for a course can apply to drop the respective course through online by following the procedures prescribed by the University.
- b. Course Validation
 - i. Students are required to validate the registered courses through online and print a copy of the registration within fourteen (14) days after the deadline of add/drop course. If students do not make the validation, the registration is automatically considered as valid and final.
- c. Attendance
 - i. Students are required to attend lectures and other learning activities such as workshops/tutorials/laboratories/studios/fields/practical training/practicum and clinics as stated in curriculum.
 - ii. Students who do not achieve 80% attendances of total contact hours for each course without any written permission from faculty/academic centre/ state UiTM /branch UiTM are not allowed to sit for the final examination of the course.
 - iii. For the course with no final examination, the course works will not be assessed.
 - iv. The students in (ii) and (iii) will be given Grade F or Fail with *ZZ* status and **must pay the process fee of RM100.00.**
- d. Examination
 - i. Students have to check *Penyata Kelayakan Menduduki Peperiksaan (Temporary)* displayed in the UiTM web site (*i-Student Portal*). Any amendments must have the consent from the Program Head/Academic Advisor within fourteen (14) days after the deadline of add/drop course.

- ii. Students must validate *Penyata Kelayakan Menduduki Peperiksaan (Temporary)* through i-Student Portal. If students do not make the validation, the script is automatically considered as valid and final.
- iii. The official print of *Penyata Kelayakan Menduduki Peperiksaan* must be printed by the students through UiTM Website (i-Student Portal) after the process of registration and validation the *Penyata Kelayakan Menduduki Peperiksaan (Temporary)* are done. Any amendments are NOT allowed.
- iv. Student who fails to bring the *Penyata Kelayakan Menduduki Peperiksaan* for the courses which have final examination assessment will not be allowed to sit for the respective examination.
- v. Application for exemption from sitting the final exam for certain course should be addressed to the Dean/Rector with the related documents before the date of final examination of the respective course.
- vi. Application for exemption from sitting the ongoing examination should be addressed to the Dean/Rector within twenty four (24) hours after the respective examination ends, accompanied with Medical certificate from *Pusat Kesihatan UiTM/ Klinik Kerajaan/ Pusat Kesihatan Kerajaan/ Hospital Kerajaan/ Pegawai Perubatan dari panel perubatan majikan*.
- vii. Application can be made in written or using form of *HEA/RP/TMP-01 [Kebenaran Tidak Menduduki Peperiksaan Akhir]*.
- viii. If the application is approved, student will be given **XX** status for the respective course
- v. If the application is disapproved, the student will be given **YY** status in which the course work marks of the respective course will not be considered. **Students must pay the process fee of RM100.00.**

GRADING/ASSESSMENT POLICY

(Should also refer to the booklet *Peraturan Akademik Diploma dan Sarjana Muda UiTM, pindaan 2017*)

- 1) Examination Results and course evaluation is given in term of grade and grade value (refer table 5.1)

Table 5.1: Grading Evaluation Table

GRADE	GRADE VALUE	ACHIVEMENT
A+	4.00	Excellence
A	4.00	Excellence
A-	3.67	Excellence
B+	3.33	Credit
B	3.00	Credit
B-	2.67	Credit
C+	2.33	Pass
C	2.00	Pass
C-	1.67	Fail
D+	1.33	Fail
D	1.00	Fail
E	0.67	Fail
F	0.00	Fail

2) The status for each course is given as follows:

LU :	Pass
F1 :	Fail a course on first attempt
F2 :	Fail a course on second attempt
F3 :	Fail a course on third attempt
PD :	Credit Transfer
PC :	Credit Exemption
TL :	Incomplete
UD:	Audit
FD :	Disciplinary Action
XX:	Absent from final examination with permission
YY:	Absent from final examination without permission
ZZ :	Barred from taking final examination for courses with final examination; or not given the assessment marks for courses without the final examination

Note: The grade value for YY and ZZ is 0.00 and process fees of RM100.00 will be given

3) Incomplete Status (TL)

- A TL status is for courses such as project exercise/practical training which is not completed within a specific term.
- A TL status cannot be more than one (1) consecutive semester. If the student does not complete the assigned exercise/practical training within the specific time frame given, he/she is entitled to an F Grade or Fail.
- Any student with a TL status is required to register as student by paying study fees and registering for the course.

4) Examination Results Status

- Based on the CGPA achievement, students will be given the examination results status as follows:

ANC	: Completed with Vice Chancellor's Award
TS	: Completed with Dean's List Award
TM	: Completed
LNT	: Pass Upgrade
AD	: Dean's List Award
LU	: Pass
P	: Probation (Unsatisfactory)
D	: Fail and Terminated

- Status of Completed with Vice Chancellor's Award (ANC) , Completed with Dean's List Award (TS) and Dean's List Award (AD) are awarded to excellent students
- Status of passed (LU) and Completed (TM) are awarded to students with satisfactory performance.
- Status of probation (P) is awarded to students with unsatisfactory performance and it is divided into two categories:

- i. P1: First Probation – acquired CGPA of 1.80 to 1.99 in a semester.
- ii. P2: Second Probation – acquired CGPA of less than 2.00 after obtaining a P1 probation in the previous final semester.

e) Unsatisfactory performance for the Fail and Termination status (D):

D1:	CGPA less than 1.80
D2:	CGPA less than 1.80 after the P1 status
D3:	CGPA less than 2.00 after the P2 status
D4:	Fail in a certain course for the third time
D5:	CGPA of less than 2.00 at the end of maximum period of study period and have courses which are still not completed.
D6:	Passed the entire courses required by the programme and fulfilled all of the programme's requirements but acquired CGPA of less than 2.00.
D7:	Did not sit for the examination of all registered courses without approval of the University.

5) Examination Result Slip

- i. The examination slip that has been endorsed by the Senate will be released through online student information portal (*i-Student Portal*) and printed by student for own record. The self-printed Examination Result Slip is certified as official print where no signature required.
- ii. The University reserves the right to retain the Examination Result Slip if students fail to observe the rules and regulations of the University.

6) Breach of conduct regarding Examination and Evaluation

- i. Students who are found guilty under Article 3 (j), 3 (k) and Article 5, Academic Institution Articles (Student Conduct) 1976, will be penalised based on decision of the University Disciplinary Board.
- ii. Students who are found guilty of an offence by the University Disciplinary Board will be given an F Grade or fail, or an FD status by the Senate.
- iii. Students who have been proven to commit plagiarism in their academic project/assignment will be given an F Grade or fail with an FD status by the Senate.

7) Re-administration of Examination

The University reserves the right to re-administer an examination as it deems fit the following situations:

- i. A leak in the final examination question.
- ii. A candidate is not able to sit for the final examination because of natural disaster.
- iii. The Vice Chancellor's directive.

INDUSTRIAL TRAINING

(Should refer to Industrial Training Handbook)

As part of the Bachelor of Engineering (Honours) Electrical course requirement, all seventh semester students have to complete three months of compulsory practical attachment in either government or private sector organizations. The Malaysian Engineering Accreditation Council (EAC) has stated that an undergraduate has to undergo at least eight weeks of industrial training as part of their course.

It provides an opportunity for the students to experience real working environment first hand whilst at the same time benefit them in terms of their personal and professional development. Furthermore feedbacks gathered from the participating organizations help the students as well as the faculty in improving the character and professional skills of the graduate.

The training will start immediately upon completion of the final examination in semester 7. In semester 7 the students should have passed their compulsory elective modules so that they are more prepared and have acquired necessary information/knowledge to do the training. In the event of failure to secure a placement the students are allowed to do the training upon completion of the final examinations in semester 8.

The students who have had working experiences in the related areas are allowed to apply for an exemption subjected to approval from the Head of the Undergraduate Programme.

1) Objectives

- a) Acquaint with the structure of an organization and its management system.
- b) Acquaint with the various equipments used in working environment.
- c) Understanding of the organization work ethical in terms of interpersonal interaction, discipline, rules/regulations and methods of performing assigned tasks.
- d) Promote symbiotic environment that will encourage interaction.
- e) Improve self-confidence through acquired hard skill and soft skill.

2) Student Role

- a) Learn from the observation, experience gained and supervision.
- b) Corporate with the organization and work colleagues.
- c) Form good interaction between all parties including work colleagues, management and visiting lecturers involved.
- d) Be prepared to contribute in any way deemed necessary.
- e) Abide by and adhered to any terms and regulations set upon by the organization.

3) Contribution by the Participating Organization

- a) Prepare a suitable training programme for the students in accordance with the objectives outlined above.
- b) Provide a suitable training staff to supervise and assist in giving a proper guidance as well as assessing the progress of the trainees.
- c) Encourage the trainees to be involved in tasks that require responsibility.
- d) Guide the trainees as to the health and safety issues.

4) Placement Duration

- a) Minimum requirement set forth by the Malaysian Engineering Accreditation Council (EAC) is eight (8) weeks.
- b) Once within the duration of the study preferably during the semester break between the seventh (7th) semester and eight (8th) semesters.

FINAL YEAR PROJECT

(Should refer to Final Year Project Handbook)

The Final Year Project is a major component of the undergraduate degree course in Electrical Engineering. The main objective is to develop problem solving, analysis, synthesis and evaluation skills in the field of Electrical Engineering. While working on the project, the students would also be able to develop personal and social skills such as time management, self-confidence and interaction. The evaluation of the Final Year Degree Project indirectly provides the students with training in technical and communication skills.

The Final Year Degree Project is implemented in two semesters, that is, semester 7 (2 credit hours) and semester 8 (4 credit hours) of the study period. Students should prepare their work schedule and adhere to it so that the project would be completed within the two semesters. Students must keep a logbook to record their progress and the supervisor should initial the logbook. Students and supervisor should meet regularly so that the progress of the project could be monitored. Supervisors are advised to ascertain the standard and quality of projects carried out. For the degree level, a good project should include a fair amount of design and synthesis, some form of hardware or software implementation, followed by measurement and data acquisition.

The work progress for both semester 7 and 8 will be assessed by the project supervisor. The project work starts by students handling in their project proposals to the Project Coordinators at the beginning of semester 7. At the end of semester 7, students are required to submit a preliminary report to the supervisors for evaluation.

Upon completion of the project at the end semester 8, students will demonstrate their projects to their project supervisors and there will be a question and answer session during the demonstration. Students are also required to produce a technical paper based on the project. The technical paper and presentation will be evaluated by a panel of evaluators from members of the Faculty. Students are also required to produce a complete report on the project conducted. The length of the report should be between 50 to 100 pages. The report will be evaluated by the supervisor and a panel of evaluators

FACILITIES

The faculty is equipped with sufficient resources, facilities with experienced laboratory assistances catering for the current needs in the curriculum of Electrical Engineering.

List of laboratories at Fakulti Kejututeraan Elektrik			
No.	Lab No.	Electronics Laboratories	Quantity
1	0.51	Printed Circuit Board (PCB) Workshop	1
2	1.28	Surface Mount Technology (SMT) Workshop	1
3	1.44	Soldering, Drilling and Testing (SDT) Workshop	1
4	1.47	Basic Electronics Laboratory	1
5	1.49	Intermediate Electronics Laboratory	1
6	1.50	Advanced Electronics Laboratory 2	1
7	1.56	Digital Electronics Laboratory	1
8	2.10	IC Design Laboratory	1
9	2.12	Applied Electronics Laboratory	1
10	2.13	Electronics System Design Laboratory	1
No.	Lab No.	Power Laboratories	Quantity
11	0.41	Electrical Machines Laboratory 1	1
12	0.45	Power Electronics Laboratory	1
13	0.46	Electrical Energy Utilization Laboratory	1
14	0.47	Power System Laboratory	1
15	0.48	High Voltage Engineering Laboratory	1
16	0.52	Power Quality Analysis Laboratory	1
17	0.53	Electrical Installation Laboratory	1
No.	Lab No.	System Laboratories	Quantity
18	0.40	Pneumatic and Hydraulic Laboratory	1
19	0.43	Robotics Workshop	1
20	1.41	Microcontroller Laboratory	1
21	1.46	Industrial Automation Laboratory	1
22	2.49	Automatic Controls Laboratory	1
23	2.59	Instrumentation and Measurement Laboratory	1
24	3.43	Robotics and Automation Laboratory	1
25	3.44	Biomedical Laboratory	1
No.	Lab No.	Communication Laboratories	Quantity
26	2.05	Microwave Laboratory	1
27	2.06	Mobile Radio Laboratory	1
28	2.09	Optical Fiber Laboratory	1
29	2.60	Digital Communication Laboratory	1
30	2.62	Telecommunication Laboratory	1
31	9.23	RF Shield Laboratory	1

No.	Lab No.	Computer Laboratories	Quantity
32	1.45	Embedded System Design Laboratory	1
33	1.55	Microprocessor Laboratory	1
34	2.14	Software Engineering Laboratory	1
35	2.15	Computing and Simulation Laboratory	1
36	3.40	CISCO Academy	1
No.	Lab No.	Research Laboratories	Quantity
37	3.42a	Electrical Engineering Postgraduate Research Laboratory	1
38	3.42b	Advance Control System and Computing Research Group	1
		TOTAL	38

APPENDIX A.**LIST OF LECTURERS****Department of Electronic Engineering**

NO.	LECTURER NAME	POSITION	TEL.	ROOM NO.
1	Dr. Rosfariza Radzali	SENIOR LECTURER	2569	3.1(BA)
2	Dr. Mohd Hanapiah Abdullah	SENIOR LECTURER	2634	3.24(BA)
3	Dr. Mohammad Nizam Ibrahim	SENIOR LECTURER	2534	4.34 (BA)
4	Ts. Linda Mohd Kasim	SENIOR LECTURER	3364	4.38
5	Ir. Dr. Irni Hamiza Hamzah	SENIOR LECTURER	2564	3.20(BA)
6	Dr. Lyly Nyl Ismail	SENIOR LECTURER	3356	4.28
7	Ir. Dr. Alhan Farhanah Abd Rahim	SENIOR LECTURER	2565	3.2(BA)
8	Ts. Nazirah Mohamat Kasim	SENIOR LECTURER	2627	2.23 (BA)
9	Pn. Norsabrina Sihab	SENIOR LECTURER	3355	4.27
10	Dr. Nor Shahanim Mohamad Hadis	SENIOR LECTURER	2788	7.30
11	Dr. Yusnita Mohd Ali	SENIOR LECTURER	2631	2.16(BA)
12	Ir. Dr. -Ing Emilia Noorsal	SENIOR LECTURER	2549	4.49(BA)
13	Ir. Dr. Samsul Setumin	SENIOR LECTURER	-	-
14	Ts. Asmalia Zanal	SENIOR LECTURER	3356	4.28
15	Pn. Nor Fadzilah Mokhtar	SENIOR LECTURER	3363	4.37
16	Pn. Aida Zulia Zulhanip	SENIOR LECTURER	3358	4.30
17	En. Mohaiyedin Idris	SENIOR LECTURER	3427	5.14
18	Ts. Mohd Hussaini Abbas	SENIOR LECTURER	3401	4.92
19	Ts. Ir. Musa Mohamed Zahidi	SENIOR LECTURER (Study Leave)	-	-
21	Pn. Shahilah Nordin	SENIOR LECTURER	3384	4.67
20	Ts. Anith Nuraini Abd Rashid (C.Eng)	LECTURER (Study Leave)	-	-
22	Pn. Sharifah Saliha Syed Bahrom	LECTURER	3405	4.98
23	Pn. Siti Zubaidah Md Saad	LECTURER	2512	4.12(BA)
24	Pn. Nur Sa'adah Muhammad Sauki	LECTURER	3340	4.12

Department of Power Engineering

NO.	LECTURER NAME	POSITION	TEL.	ROOM NO.
1	Ts. Nurul Huda Ishak	SENIOR LECTURER	2708	5.31
2	Dr. Anuar Mohamad @ Ahmad	SENIOR LECTURER	2831	7.28
3	Ts. Dr. Kamarulazhar Daud	SENIOR LECTURER	2640	2.11(BA)
4	Ts. Mohd Affandi Shafie	SENIOR LECTURER	2618	1.18(BA)
5	Ts. Dr. Mohd Najib Mohd Hussain	SENIOR LECTURER	2576	3.9(BA)
6	Ts. Noor Azila Ismail	SENIOR LECTURER	3365	4.39
7	Dr. Ahmad Asri Abd Samat	SENIOR LECTURER	3309/2832	7.29
8	Ts. Mohamad Adha Mohamad Idin	SENIOR LECTURER	3401	4.92
9	Pn. Nor Adni Mat Leh	SENIOR LECTURER	2510	4.10(BA)
10	Dr. Saodah Omar	SENIOR LECTURER	3352	4.05
11	Cik Nurlida Ismail	SENIOR LECTURER	3359	4.83
13	Pn. Siti Solehah Md Ramli	SENIOR LECTURER	3358	4.42
14	Pn. Nur Atharah Kamarzaman	SENIOR LECTURER (Study Leave)	-	-
15	Ir. Aimi Idzwan Tajudin	SENIOR LECTURER	3309	0.44
17	Pn. Nur Fadhilah Jamaludin	SENIOR LECTURER	3362	4.36
19	Ts. Ir. Abdul Malek Saidina Omar	SENIOR LECTURER	3411	4.104
21	En. Saiful Firdaus Abdul Shukor	LECTURER	2512	4.12(BA)
18	Pn. Siti Sarah Mat Isa	LECTURER	3339	4.11
12	Pn. Siti Salwa Mat Isa	LECTURER	3384	4.67
20	Cik Nur Darina Ahmad	LECTURER	3388	4.70
22	Pn. Wan Salha Saidon	LECTURER	3358	4.30
23	En. Mohd Hafeez bin Abu Hassan	ASSISTANT LECTURER	2921	1.53

Department of Systems Engineering

NO.	LECTURER NAME	POSITION	TEL.	ROOM NO.
1	Ir. Dr Zakaria Hussain	ASSOC. PROFESSOR	3336	4.08
2	Ts. Ir. Dr. Siti Noraini Sulaiman	ASSOC. PROFESSOR	2628	2.24 (BA)
3	Dr. Rozan Boudville	SENIOR LECTURER	3412	4.105
4	Dr. Muhammad Khusairi Osman (C.Eng)	SENIOR LECTURER	3337	4.09
5	Ir. Dr. Nor Salwa Damanhuri	SENIOR LECTURER	2551	4.51(BA)
6	Dr. Nor Azlan Othman	SENIOR LECTURER	2830	7.27
7	Dr. Saiful Zaimy Yahaya	SENIOR LECTURER	2537	4.37(BA)
8	Dr. Afaf Rozan Mohd Radzol	SENIOR LECTURER	2789	7.31
9	Dr. Mohamad Faizal Abd Rahman	SENIOR LECTURER	3335	4.07
10	Dr. Zuraida Muhammad	SENIOR LECTURER	2647	2.14(BA)
11	Ts. Ir. Dr. Norhazimi Hamzah	SENIOR LECTURER	3359	4.83
12	Ts. Ir. Khairul Azman Ahmad	SENIOR LECTURER	3352	4.05
13	Dr. Belinda Chong Chiew Meng	SENIOR LECTURER	2542	4.42(BA)
14	Ir. Dr. Iza Sazanita Isa	SENIOR LECTURER	3352	4.05
15	Ts. Dr. Mohd Suhaimi Sulaiman	SENIOR LECTURER	3391	4.75
16	En. Zuraidi Saad	SENIOR LECTURER	2531	4.31(BA)
17	En. Mohd Firdaus Abdullah	SENIOR LECTURER	2825	7.17
18	Ts. Adi Izhar Bin Che Ani	SENIOR LECTURER	3342	4.87
19	Cik Anis Diyana Rosli	SENIOR LECTURER	3363	4.37
20	En. Rizal Mat Jusoh	SENIOR LECTURER	3391	4.75
21	Ts. Rohaiza Baharudin	SENIOR LECTURER	3348	4.88
23	Pn. Sarah Addyani Shamsuddin	LECTURER	3360	4.34
23	Pn. Siti Saffura Sharipuddin	ASSISTANT LECTURER	3409	4.102

Department of Communications Engineering

NO.	LECTURER NAME	POSITION	TEL.	ROOM NO.
1	Ir. Dr. Ahmad Rashidy Razali	ASSOC. PROFESSOR	2630	2.22 (BA)
2	Dr. Ali Othman	SENIOR LECTURER	2579	3.22(BA)
3	Pn. Dayang Suhaida Awang Damit	SENIOR LECTURER	3339	4.11
4	Ir. Dr. Aslina Abu Bakar	SENIOR LECTURER	2568	3.3 (BA)
5	Ts. Norhayati Mohamad Noor	SENIOR LECTURER	3374	4.51
6	Ts. Juliana Md.Sharif	SENIOR LECTURER	2824	7.14
7	Dr. Samihah Abdullah	SENIOR LECTURER	2542	4.42(BA)
8	Ts. Ida Rahayu Mohamed Nordin	SENIOR LECTURER	3348	4.88
9	Pn. Normasni Ad Fauzi	SENIOR LECTURER	3369	4.43
10	Pn. Azwati Azmin	SENIOR LECTURER	2705	5.33
11	Pn. Zafirah Binti Faiza	SENIOR LECTURER	2708	5.31
12	Dr. Hj. Hasnain Abdullah@Idris	LECTURER	3422	5.09
13	Pn. Najwa Mohd Faudzi	LECTURER	2553	4.53 (BA)
14	Pn. Aiza Mahyuni Mozi	LECTURER	2629	2.6(BA)
15	En. Roslan Seman	LECTURER	2533	4.33(BA)
16	En. Amirudin Ibrahim	LECTURER	3342	4.87
17	Pn. Zafirah Binti Faiza	LECTURER	2708	5.31
18	En. Mohd Khairill Nizam Mohd Fazil	ASSISTANT LECTURER	2921	1.53

Department of Computer Engineering

NO.	LECTURER NAME	POSITION	TEL.	ROOM NO.
1	Pn. Nur Athiqah Haron	SENIOR LECTURER	2517	4.17(BA)
2	Ts. Dr. Zainal Hisham Che Soh (C. Eng)	SENIOR LECTURER	2532	4.32(BA)
3	Dr. Ahmad Puad Ismail	SENIOR LECTURER	2636	2.7(BA)
4	Dr. Fadzil Dato' Ahmad	SENIOR LECTURER	2567	3.4 (BA)
5	Dr. Intan Rahayu Ibrahim	SENIOR LECTURER	2509	4.9(BA)
6	Tn Hj Mohd Daud bin Alang Hassan	SENIOR LECTURER	2654	3.10(BA)
7	Pn. Aini Hafizah Mohd Saod	SENIOR LECTURER	2517	4.17(BA)
8	Pn. Azizah Ahmad	SENIOR LECTURER	3360	4.34
9	Cik Faridah Abdul Razak	SENIOR LECTURER	3340	4.12
10	Dr. Shabinar Abd Hamid	SENIOR LECTURER	2487	2.14(BA)
11	Ir. Muhammad Farris Khyasudeen	SENIOR LECTURER (Study Leave)		
12	Ts. Siti Azura Ramlan	LECTURER	2513	4.13(BA)
13	En. Mohd Ikmal Fitri Marzuki	LECTURER		0.43
15	En. Saiful Fadzli Salian	LECTURER	2830	7.27
16	Tn Hj. Abdul Rahim Ahmad	LECTURER	3411	4.104
17	Pn. Mahizan Ab.Manan	ASSISTANT LECTURER DM 29	3409	4.102

