



PROGRAMME SPECIFICATIONS

Programme	Bachelor in Electronic Engineering (Computer Engineering) with Honours	
Award	Bachelor in Electronic Engineering (Computer Engineering) with Honours	
Duration	Minimum	Maximum
	8 semester	12 semester

ADMISSION REQUIREMENT

1. STPM Holder

General University Requirements:

- i. Pass in SPM with good grades.
- ii. Pass with credit in Bahasa Melayu/Bahasa Malaysia or in Bahasa Melayu/Bahasa Malaysia July Paper at SPM level or its equivalent.
- iii. Pass STPM with at least a CPA of 2.00 and at least Grade C (GPA 2.00) in General Paper and Grade C (GPA 2.00) in other two (2) subjects.
- iv. A pass in English and obtained at least Band 1 in the “Malaysian University English Test” (MUET) or its equivalent.

Special Requirements for University Program:

- i. Obtained at least Grade C (GPA 2.00) at STPM level in these subjects:
 - a. T Mathematics / Advanced T Mathematics
 - b. Physics
 - c. Chemistry
- ii. A pass in English at SPM level
- iii. Clear Sight / Colour Blindness
- iv. No physical handicap which can disrupt practical training.

2. KPM Matriculation Certificate Holder

General University Requirements:

- i. Pass in SPM with good grades.
- ii. Pass with credit in Bahasa Melayu/Bahasa Malaysia or in Bahasa Melayu/Bahasa Malaysia July Paper at SPM level or its equivalent.
- iii. Pass KPM Matriculation / UM Science Foundation / UiTM Foundation with at least a CGPA of 2.00
- iv. A pass in English and obtained at least Band 1 in the “Malaysian University English Test” (MUET) or its equivalent.

Special Requirements for University Program:

- i. Obtained at least Grade C (GPA 2.00) at Matriculation / Foundation level in these subjects:
 - (a) Mathematics / Additional Mathematics
 - (b) Chemistry / Engineering Chemistry
 - (c) Physics / Engineering Physics or Biology with credit in physics at SPM level
- ii. At least a pass in English at SPM level.
- iii. Clear sight / Colour blindness.
- iv. No physical handicap which can disrupt practical training.



PROGRAMME SPECIFICATIONS

3. Diploma Holder or equivalents

University General Requirements:

- i. Pass in SPM with good grades.
- ii. Pass with credit in Bahasa Melayu/Bahasa Malaysia or in Bahasa Melayu/Bahasa Malaysia July Paper at SPM level or its equivalent.
- iii. A diploma holder or other equivalents which is accredited by Malaysian government and University Senate; or pass Matriculation examination for the year of 2006 or before with at least a CGPA of 2.00
- iv. A pass in English and obtained at least Band 1 in the “Malaysian University English Test” (MUET) or its equivalent.

Special Requirements for University Program:

- i. A Diploma holder in related Engineering fields from other Higher Learning Institutions (IPTA) or its equivalent which is accredited by Malaysian government and approved by the University Senate with at least a CGPA of 2.70
- ii. Candidates who do not fulfill the CGPA requirement as stated in (i) but obtained at least a CGPA of 2.50 and have 2 years working experiences will be considered.
Candidates who fulfill the entry requirements but do not obtained at least Band 2 can apply and if succeed, must obtain at least Band 2 in “Malaysian University English Test” (MUET)
- iii. A pass in English at SPM level.
- iv. Clear sight / Colour blindness
- v. No physical handicap which can disrupt practical training.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

The objectives of this programme are to produce engineers who are:

1. competent in the field of electronic and computer engineering to fulfill the needs of industry at the national and international level
2. able to deliver, enhance and develop their ability and experience on a continuous basis as professional engineers.
3. able to practice and implement ethics and social responsibility to the global community.



PROGRAMME SPECIFICATIONS

PROGRAMME LEARNING OUTCOME (PLO)

Upon graduation, a graduate should acquire the followings :

- | | | |
|----|---|--|
| 1 | acquire and apply knowledge of mathematics and sciences and engineering fundamentals in electronic and comp | knowledge |
| 2 | use of techniques, skills, and modern engineering tools necessary for electronic and computer engineering practice in industry. | knowledge and practical |
| 3 | communicate effectively both in written and spoken forms with engineers, and other professionals and community at large. | communication skills |
| 4 | identify, formulate, and solve electronic and computer engineering problems by means of creativity and innovation. | problem solving |
| 5 | function effectively individually or in teams with the capacity to be a leader. | teamworking |
| 6 | recognize the need for, and to engage in, life-long learning and able to manage information professionally. | life-long learning |
| 7 | be self-motivated and develop enterpreneurship skills for active and continuous career development. | enterpreneurship |
| 8 | understand and commit professional, ethical and humanity responsibility according to engineer's code of conduct. | professionalisme, ethics and humanity |
| 9 | appreciate and demonstrate effective leadership responsibility. | leadership |
| 10 | design, conduct experiments, analyze and interpret data for the development of | design |
| 11 | apply the principles of design in electronic and computer engineering for sustainable development. | sustainable development |



PROGRAMME SPECIFICATIONS

PROGRAM STRUCTURE

CODE	COURSES	CREDIT	L	T	P	SLT
UWA10302	Islamic and Asian Civilisation	2	2	0	0	2
UWB10101	English For Academic Purposes **	1	1	1	0	2
UWB20302	Technical Writing	2	2	1	0	3
UWS10202	Ethnic Relations	2	2	0	0	2
UWB11202	**Malay Language					
UWB10202	Effective Communication	2	2	1	0	3
UQ*1**01	Co-Curriculum I	1	0	0	3	3
UWA10102	Islamic Studies/	2	2	0	0	2
UWA10202	Moral Studiesl					
BEE31202	Creativity and Innovation	2	2	1	0	3
UQ*1**01	Co-Curriculum II	1	0	0	3	3
UWS10103	Nationhood and Current Development of Malaysia	3	3	0	0	3
UWS 10303	**Malaysian Studies and Culture					
UWB10*02	Foreign Language	2	2	1	0	3
BWM10103	Engineering Mathematics I	3	3	1	0	4
BWM10303	Engineering Mathematics IIE	3	3	1	0	4
BWM20403	Engineering Mathematics III	3	3	1	0	4
BWM30602	Engineering Mathematics IV	2	2	1	0	3
BWM20502	Engineering Statistics	2	2	1	0	3
BEC10102	Computer Programming	2	1	1	3	5
BPK20802	Entrepreneurship	2	2	1	0	3
BPK30902	Engineering Economy	2	2	1	0	3
BEE30103	Engineering Management	3	3	1	0	4
BEE10202	Engineer and Society	2	2	1	0	3
BEE30304	Industrial Training	4	0	0	0	8 weeks
BEL10103	Electric Circuits	3	2	1	3	6
BEL10203	Analog Electronics	3	3	1	0	4

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PROGRAMME SPECIFICATIONS

BEE10403	Electrical Technology	3	3	1	0	4
BEE10501	Engineering Practices	1	0	0	3	3
BEL20303	Digital Electronics	3	3	1	0	4
BEF25503	Power Systems	3	3	1	0	4
BEE20801	Electronics Engineering Laboratory I	1	0	0	3	3
BEH22003	Instrumentation and Control Systems	3	3	1	0	4
BEB20303	Electromagnetic Fields and Waves	3	3	1	0	4
BEE20901	Electronics Engineering Laboratory II	1	0	0	3	3
BEB31803	Electronic Communication Systems	3	3	1	0	4
BEL30403	Electronics Circuit Analysis and Design	3	3	1	0	4
BEC30503	Digital System Design	3	2	1	3	6
BEE31002	Electronics Engineering Laboratory III	2	0	0	6	6
BEB30603	Digital Signal Processing	3	3	1	0	4
BEC30303	Computer Architecture and Organisation	3	3	1	0	4
BEC30403	Microprocessor and Microcontroller	3	3	1	0	4
BEE31002	Electronics Engineering Laboratory IV	2	0	0	6	6
BEE40602	Final Year Project I	2	0	0	6	6
BEE40704	Final Year Project II	4	0	0	12	12
BEC20602	Data Structures and Algorithms	2	1	1	3	5
BEC20702	Object Oriented Programming	2	1	1	3	5
BEC30803	Database Systems	3	2	1	3	6
BEC40903	ASIC Design	3	2	1	3	6
BEC41003	Computer Networks	3	3	1	0	4
BEC41103	Advanced Microcontroller	3	3	1	0	4
BEC41201	Networks & Adv. Microcontroller Laboratory	2	0	0	6	6
BEC41302	Operating Systems	2	2	1	0	3
BEC41403	Multimedia Engineering	3	2	1	3	6
BEC4**03	Specialization Elective I	3	3	1	0	4
BEC4**03	Specialization Elective II	3	3	1	0	4
BEC4**03	Specialization Elective III	3	3	1	0	4
TOTAL		132	103	39	75	217



PROGRAMME SPECIFICATIONS

ELECTIVES COURSES

CODE	COURSES	CREDIT	L	T	P	SLT
BEC41503	Artificial Intelligence	3	3	1	0	4
BEC41603	Computer System Engineering	3	3	1	0	4
BEC41703	Embedded System Design	3	3	1	0	4
BEC41803	Software Engineering	3	3	1	0	4
BEC41903	Computer Security	3	3	1	0	4
BEC42003	VLSI System Design	3	2	1	3	6
BEB30603	Applied Electromagnetics	3	3	1	0	4

Nota: * Exempted if MUET results more than or equal to band 3

** International student only

MATRIX OF COURSE vs LEARNING OUTCOME

Matrix of Course vs Learning Outcome				LEARNING OUTCOME										
NO	CODE	COURSE	CREDIT	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
Domain				C	C	P	C	P	A	P	A	A	P	A
GENERIC SKILLS						CS	CTPS	TS	LL	KK	EM	LS		
1	UWA10302	Islamic and Asian Civilisation	2	x		x					x			
2	UWB10101	English For Academic Purposes **	1	x		x			x					
3	UWB20302	Technical Writing	2	x		x			x					
4	UWS10202	Ethnic Relations	2	x				x			x			
	UWB11202	**Malay Language	2											
5	UWB10202	Effective Communication	2	x				x	x					
6	UQ*1**01	Co-Curriculum I	1		x			x	x					
7	UWA10102	Islamic Studies/	2	x		x					x			
	UWA10202	Moral StudiesI		x		x					x			
8	BEE31202	Creativity and Innovation	2	x				x				x		
9	UQ*1**01	Co-Curriculum II	1		x			x	x					
10	UWS10103	Nationhood and Current Development of Malaysia	3	x							x	x		
	UWS10303	Malaysian Studies and Culture **	3											
11	UWB10*02	Foreign Language	2	x					x		x			
12	BWM10103	Engineering Mathematics I	3	x			x		x					
13	BWM10303	Engineering Mathemaitcs IIE	3	x			x		x					
14	BWM20403	Engineering Mathematics III	3	x			x		x					
15	BMW30602	Engineering Mathematics IV	2	x			x		x					
16	BWM20502	Engineering Statistics	2	x			x		x					
17	BEC10102	Computer Programming	2	x				x	x					
18	BPK20802	Entrepreneurship	2				x			x		x		

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19	BPK30902	Engineering Economy	2				x			x		x		
20	BEE30103	Engineering Management	3	x		x						x		
21	BEE10202	Engineer and Society	2	x				x			x			
22	BEE30304	Industrial Training	4		x	x					x			
23	BEL10103	Electric Circuits	3		x			x	x					
24	BEL10203	Analog Electronics	3		x	x								x
25	BEE10403	Electrical Technology	3		x			x						x
26	BEE10501	Engineering Practices	1		x			x				x		
27	BEL20303	Digital Electronics	3					x					x	x
28	BEF25503	Power Systems	3	x					x				x	
29	BEE20801	Electronics Engineering Laboratory I	1		x			x				x		
30	BEH22003	Instrumentation and Control Systems	3			x	x							x
31	BEB20303	Electromagnetic Fields and Waves	3				x	x			x			
32	BEE20901	Electronics Engineering Laboratory II	1		x			x				x		
33	BEB31803	Electronic Communication Systems	3		x	x					x			
34	BEL30403	Electronics Circuit Analysis and Design	3				x						x	x
35	BEC30503	Digital System Design	3		x							x	x	
36	BEE31002	Electronics Engineering Laboratory III	2		x			x				x		
37	BEB30603	Digital Signal Processing	3			x	x				x			
38	BEC30303	Computer Architecture and Organisation	3		x	x								x
39	BEC30403	Microprocessor and Microcontroller	3				x						x	x
40	BEE31002	Electronics Engineering Laboratory IV	2		x			x				x		
41	BEE40602	Final Year Project I	2		x	x			x					
42	BEE40704	Final Year Project II	4				x			x	x			
43	BEC20602	Data Structures and Algorithms	2	x		x						x		
44	BEC20702	Object Oriented Programming	2	x		x						x		
45	BEC30803	Database Systems	3	x						x			x	
46	BEC40903	ASIC Design	3		x				x				x	
47	BEC41003	Computer Networks	3				x						x	x
48	BEC41103	Advanced Microcontroller	3				x		x				x	
49	BEC41201	Networks and Adv. Microcontroller Laboratory	2		x			x				x		
50	BEC41302	Operating Systems	2	x									x	x
51	BEC41403	Multimedia Engineering	3		x					x			x	
52	BEC41503	Artificial Intelligence	3		x				x				x	
53	BEC41603	Computer Systems Engineering	3		x								x	x
54	BEC41703	Embedded Systems Design	3				x						x	x
55	BEC41803	Software Engineering	3			x	x			x				
56	BEC41903	Computer Security	3				x						x	x
57	BEC42003	VLSI Systems Design	3				x					x	x	
58	BEH30603	Applied Electromagnetics	3		x						x		x	
Jumlah Keseluruhan			132	23	21	16	20	16	18	6	13	15	17	12



PROGRAMME SPECIFICATIONS

DELIVERY METHOD

This program is disseminated by various delivery methods to fulfill the subject learning outcomes and in general, to prepare a centralized learning opportunities. Those methods are:

1. Lectures and Tutorials
2. Practical and Application session-oriented: Laboratory work, workshop, site visit / site work, demonstration or simulation.
3. Seminar and industrial visit.
4. Case-based Learning (Project-Oriented Problem-based Learning)
5. Project
6. E-Learning

EVALUATION METHOD

Formative and Summative evaluations which comprise of:

1. Written Examinations
2. Test / Quiz
3. Assignment
4. Presentation
5. Laboratory Report
6. Skill Inspection
7. Log book
8. Industrial Evaluation

TERMS AND CONDITIONS FOR THE AWARD OF THE PROGRAM:

1. Student should apply for the award and the application is granted by the Faculty.
2. Pass all compulsory subjects as required by the program.
3. Obtained a total KREDIT DAPAT as required and obtained KEDUDUKAN BAIK.
4. A pass in Bahasa Melayu at SPM level.
5. Obtained at least Band 3 in “Malaysian University English Test” (MUET)
6. Application must be made by using Bachelor’s Degree Award Application Form or Diploma within the stipulated time imposed by the University.
7. Obtained approval and award certification from the Senate.

CAREER OPPORTUNITY

Graduates will have a vast career opportunity in computer and electronic engineering field within the country itself or abroad as computer or electronic engineers. However, graduates are qualified to become an engineer in various industries such as computer industry, factory sectors and manufacturing, health industry, information technology and other engineering fields. Graduates who have passion in research can work as a researcher in any institutions that offer applied research area. Other than that, graduates are qualified to further their study in any postgraduates courses



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at any universities within the country itself or abroad subject to excellent academic results. In addition, graduates can become an academician at any local universities and other higher learning institutions, polytechnics, community colleges or schools.

RELATED INFORMATION

(Lecturers/Fasilitators/Project/Target Group/Fees/etc)

1. Academicians:

- i. Lecturers teaching university compulsory subjects and basic subjects comprise of academic staffs at Centre for Science Studies (PPS), Centre for Humanities and Communication Studies (PPKK) and Centre of Co-Curricular, Sports and Culture (PKSK). Lecturers who teach core and elective subject of the programs comprise of academic staffs in Faculty of Electrical and Electronic Engineering.
- ii. Instructors teaching Engineering Skills comprise of academic staffs who possess industrial experiences.

2. Learning Concept

The learning concept of this program is practice-oriented and Outcome-Based Education (OBE) in which the students will be exposed to theoretical and practical training exercises in the university for 8 semesters and in the industry for 12 weeks.

3. Fees

The fee rates for this program are RM520.00 (Fee paid once during the whole program duration) and RM1,436.50 (Fee for every semester)

4. Faculty PROFORMA can be obtained from the University websites, www.uthm.edu.my

Prepared by:

Approved by:

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SHAMSUL BIN MOHAMAD
Head of Computer Engineering Department
Faculty of Electrical and Electronic Engineering
Universiti Tun Hussein Onn Malaysia
Tel: 07-4537552
Date: 24 June 2010

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Prof. Hj Ayob bin Hj Johari
Dean
Faculty of Electrical and Electronic Engineering
Universiti Tun Hussein Onn Malaysia
Tel: 07-4537500
Date:

Note : Information is true in printing time and may be eliminated change at anytime