FACULTY OF MECHANICAL AND MANUFACTURING ENGINEERING
UNIVERSITI TUN HUSSEIN ONN MALAYSIA

PROGRAMME SPECIFICATION

Programme	**Degree of Mechanical Engineering**	
Award	**Bachelor in Mechanical Engineering With Honours**	
Programme duration	Minimum	Maximum
	8 semesters	**12 semesters**

Admission Requirement

Applicants must fulfill the minimum requirement for admission to this programme, as follows:

1. **Sijil Tinggi Persekolahan Malaysia (STPM) holder**

Fulfill the university general requirement and the programme special requirement:

a) University General Requirement

Passed Sijil Pelajaran Malaysia (SPM)/equivalent with a credit in Bahasa Melayu/**Bahasa Malaysia** or a credit in Bahasa Melayu/**Bahasa Malaysia** July Paper;

and

Passed Sijil Tinggi Persekolahan Malaysia (STPM) with a CGPA of at least 2.00 .

Obtained at least Grade C (CGPA 2.00) in these following subjects:

- General Paper
- 2 other subjects

and

Obtained at least Band 1 in Malaysian University English Test (MUET). However candidates are required to achieve at least Band 3 upon graduation

b) Programme Special Requirement

Obtained at least Grade C (CGPA 2.00) at STPM level in these following subjects :

- **Mathematics / Further Mathematics ;**
- **Physics; and**
- **Chemistry**

and

Passed the SPM English Language.

and

Should have no impaired vision and any physical disabilities that will interfere with practical works.

Note: Students must obtain at least MUET Band 3 before graduation.

2. Candidates with Diploma / Diploma Equivalent

Applicants must fullfill the university general requirement and the programme special requirement

a) University General Requirement

Passed Sijil Pelajaran Malaysia (SPM)/equivalent with a credit in Bahasa Melayu/**Bahasa Malaysia** or a credit in Bahasa Melayu/**Bahasa Malaysia** July Paper;

and

Obtained a diploma or equivalent qualifications in the relevant fields recognized by the Malaysian Government and certified by the University's Senate.

and

Obtained at least Band 1 in Malaysian University English Test (MUET).

b) Programme Special Requirement

Obtained a diploma or equivalent qualifications in the relevant fields of engineering and technology with CGPA of 2.70; **or** 2 years working experience in the relevant fields for candidates with CGPA of 2.50

and

Obtained at least Band 1 for MUET. However candidatse are required to achieve at least Band 3 upon graduation.

and

Passed the SPM English Language

and

Should have no impaired vision and any physical disabilities that will interfere with practical works.

Note: Diploma holders are eligible for credit exemption based on the grades of subjects and fields taken.

3. Candidates from MOE Matriculation

Applicants must fullfill the university general requirement and the programme special requirement:

a) University General Requirement

Passed Sijil Pelajaran Malaysia (SPM)/equivalent with a credit in Bahasa Melayu/**Bahasa Malaysia** or a credit in Bahasa Melayu/**Bahasa Malaysia** July Paper;

and

Passed in MOE Matriculation with a CGPA of at least 2.00;

and

Obtained at least Band 1 in Malaysian University English Test (MUET). However candidates are required to achieve at least Band 2 upon graduation.

b) Programme Special Requirement

Obtained at least Grade C (2.00) at Matriculation/ Foundation level in these following subjects:

- **Mathematics / Engineering Mathematics ;**
- **Physics / Engineering Physics; and**
- **Chemistry / Engineering Chemistry**

and

Obtained at least a pass in SPM English Language.

and

Should have no impaired vision and any physical disabilities that interfere with practical works.

Note: Students must obtain at least MUET Band 3 before graduation.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

The Faculty has underlined the following long-term objectives for all its programs to produce:

1. Graduates with the necessary professional practice and acumen necessary for the success in the engineering profession and/or graduate level study
2. Graduates with the ability to practice mechanical engineering in the global marketplace and develop specialised interest in related areas.
3. Graduates with the competence to formulate and solve engineering problems through analytical and innovative approaches.
4. Graduates with the ability to communicate effectively, to lead and to appreciate entrepreneurship while being aware of environmental and ethical responsibilities.
5. Graduates with strong commitment for self learning and continuous professional development

PROGRAMME LEARNING OUTCOMES (PLO)

Upon completion of the course the student should be able to:

1. Apply knowledge of mathematics, science, and engineering
2. Acquire in-depth knowledge and technical competency in mechanical systems and its related discipline.
3. Communicate effectively using a variety of appropriate mediums.

4. Adapt and use techniques, skills, and appropriate engineering tools necessary for engineering research and practices
5. Identify problems, create solutions, innovate and improve current practices in mechanical systems and its components.
6. Appreciate aesthetic values through applications of technical judgement and creativity.
7. Demonstrate professional and ethical responsibility with commitment to the community for the benefit of mankind.
8. Work effectively in groups in ways that contribute to effective working relationships and the achievement of goals both as a leader as well as effective team players
9. Comprehend global perspective on social culture and environmental responsibilities of a professional engineer in sustaining development
10. Recognise the need to engage in life-long learning
11. Recognise the importance of entrepreneurship in mechanical engineering and its related discipline.

Programme Structure

CODE	COURSES	Meeting Hours / Week			SLT	CREDIT HOURS
		CLASS	TUTORIAL	LAB		
UWS 10103	M'sian Nationhood & Current Develop't /	3	0	0	3	3
UWS 10303	Malaysia Studies and Culture					
UWB 10101	English for Academic Purposes	1	1	0	2	1
BDA 10602	Creativity & Innovation	2	1	0	3	2
UQ* 1**01	Co-Curriculum I	0	0	3	3	1
BWM 10103	Engineering Mathematics I	3	1	0	4	3
BDA 10102	Engineering Drawing	1	0	3	4	2
BDA 10203	Statics	3	1	0	4	3
BDA 18001	Mechanical Engineering Practice I	0	0	3	3	1
UWA 10302	Islam Civilisation and Asian Civilisation	2	0	0	2	2
UWB 10202	Effective Communication	2	1	0	3	2
BWM 10203	Engineering Mathematics II	3	1	0	4	3
BDA 10302	Material Science	2	1	0	3	2
BDA 10402	Solid Mechanics I	2	1	0	3	2
BDA 10502	Fluid Mechanics	2	1	0	3	2
BDA 17001	Engineering Laboratory I	0	0	3	3	1
BDA 18101	Mechanical Engineering Practice II	0	0	3	3	1
BEX 17003	Electric and Electronic Technology	3	1	0	4	3
UWA 10102	Islamic Studies /	2	0	0	2	2
UWA 10202	Moral Studies					
UWB 20302	Technical Writing	2	1	0	3	2
UWB 1*'02	Foreign Language	2	1	0	3	2
BWM 20403	Engineering Mathematics III	3	1	0	4	3

BTI 10202	Computer Programming	1	0	3	4	2
BDA 20103	Dynamics	3	1	0	4	3
BDA 20202	Thermodynamics I	2	1	0	3	2
BDA 27001	Engineering Laboratory II	0	0	3	3	1
UWS 10202	Ethnic Relationship /	2	0	0	2	2
UWB 11202	Malay Language					
UQ` 1**01	Co-Curriculum II	0	0	3	3	1
BWM 20502	Engineering Statistics	2	1	0	3	2
BDA 20303	Mechanics of Machine	3	1	0	4	3
BDA 20402	Engineering Materials Selection	2	1	0	3	2
BDA 20502	Computer Aided Design	1	0	3	4	2
BDA 27101	Engineering Laboratory III	0	0	3	3	1
BDA 27201	Engineering Laboratory IV	0	0	3	3	1
BDA 28001	Mechanical Engineering Practice III	0	0	3	3	1
BWM 30603	Engineering Mathematics IV	3	1	0	4	3
BPK 20802	Entrepreneurship	2	0	3	5	2
BPK 30902	Engineering Economy	2	1	0	3	2
BDA 30203	Fluid Mechanics II	3	1	0	4	3
BDA 30303	Solid Mechanics II	3	1	0	4	3
BDA 30403	Thermodynamics II	3	1	0	4	3
BDA 37001	Engineering Laboratory V	0	0	3	3	1
BDA 28101	Mechanical Engineering Practice IV	0	0	3	3	1
BDA 30502	Manufacturing Technology	2	1	0	3	2
BDA 30603	Heat Transfer	3	1	0	4	3
BDA 30703	Control Engineering	3	1	0	4	3
BDA 30803	Mechanical Engineering Design	2	0	3	5	3
BDA 37101	Engineering Laboratory VI	0	0	3	3	1
BDA 38004	Industrial Training	0	0	12	12	4
	(3 months / 10 weeks)					
BDA 40102	Industrial Engineering	2	1	0	3	2
BDA 40203	Engineering Design	2	0	3	5	3
BDA 40303	Finite Element Method	2	0	3	5	3
BDA 40603	Noise and Vibration	2	0	3	5	3
BDA 49002	Bachelor Degree Project I	0	0	6	6	2
BD* 4**03	Elective I	2	0	3	5	3
BDA 40402	Management and Professional Ethics	2	1	0	3	2
BDA 40502	Engineers & Society	2	1	0	3	2
BDA 49104	Bachelor Degree Project II	0	0	12	12	4
BD* 4**03	Elective II	2	0	3	5	3
BD* 4**03	Elective III	2	0	3	5	3
	TOTAL	**98**	**29**	**99**	**226**	**130**

Matrix of Programme Learning Outcome - Subjects

	No.	Code	Course	Emphasis To The PLO								
				LO-1	LO-2	LO-3	LO-4	LO-5	LO-6	LO-7	LO-8	LO-9
University Courses	1	UWB 1*'02	Foreign Language	x	-	x	-	-	-	-	x	-
	2	UWA 10302	Islam Civilisation and Asian Civilisation	x	-	x	-	-	-	-	x	-
	3	UWA 10102	Islamic Studies /	x	-	x	-	-	-	-	x	-
		UWA 10202	Moral Studies									
	4	UWS 10202	Ethnic Relationship /	x	-	-	-	x	-	-	x	-
		UWB 11202	Malay Language									
	5	UWB 10101	English for Academic Purposes	x	-	x	-	-	x	-	-	-
	6	UWB 20302	Technical Writing	x	-	x	-	-	x	-	-	-
	7	UWB 10202	Effective Communication	x	-	-	-	x	x	-	-	-
	8	BDA 10602	Creativity & Innovation	x	-	-	-	x	-	-	-	x
	9	UWS 10103	M'sian Nationhood & Current Develop't /	x	-	-	-	-	-	-	x	x
		UWS 10303	Malaysia Studies and Culture									
	10	UQ* 1**01	Co-Curriculum I	-	x	-	-	x	x	-	-	-
	11	UQ` 1**01	Co-Curriculum II	-	x	-	-	x	x	-	-	-
Math. Courses	12	BWM 10103	Engineering Mathematics I	x	-	-	x	-	x	-	-	-
	13	BWM 10203	Engineering Mathematics II	x	-	-	x	-	x	-	-	-
	14	BWM 20403	Engineering Mathematics III	x	-	-	x	-	x	-	-	-
	15	BWM 20502	Engineering Statistics	x	-	-	x	-	x	-	-	-
	16	BWM 30603	Engineering Mathematics IV	x	-	-	x	-	x	-	-	-
Support	17	BPK 30902	Engineering Economy	x	x	-	-	-	-	x	-	-
	18	BPK 20802	Entrepreneurship	x	x	-	-	-	-	x	x	-
	19	BDA 40402	Management and Professional Ethics	x	-	-	-	-	-	-	x	x
	20	BDA 40502	Engineers & Society	x	-	-	-	-	-	-	x	x
	21	BTI 10202	Computer Programming	x	x	-	-	-	x	-	-	-
Engineering Courses	22	BDA 10102	Engineering Drawing	x	x	-	-	-	x	-	-	-
	23	BDA 10203	Statics	x	-	-	x	x	-	-	-	-
	24	BDA 10302	Material Science	x	x	x	-	-	-	-	-	-
	25	BDA 10402	Solid Mechanics I	x	-	-	x	x	-	-	-	-
	26	BDA 10502	Fluid Mechanics	x	-	-	x	x	-	-	-	-

	27	BDA 17001	Engineering Laboratory I	-	x	-	x	x	-	-	-	-
	28	BDA 18001	Mechanical Engineering Practice I	x	x	-	x	-	-	x	-	-
	29	BDA 18101	Mechanical Engineering Practice II	x	x	-	x	-	-	x	-	-
	30	BDA 20103	Dynamics	x	-	x	-	x	-	-	-	-
	31	BDA 20202	Thermodynamics I	x	x	-	-	x	-	-	-	-
	32	BDA 20303	Mechanics of Machine	x	-	x	-	x	-	-	-	-
	33	BDA 20402	Engineering Materials Selection	x	x	x	-	-	-	-	-	-
	34	BDA 20502	Computer Aided Design	x	x	-	-	-	-	-	-	x
	35	BDA 27001	Engineering Laboratory II	-	x	x	x	-	-	-	-	-
	36	BDA 27101	Engineering Laboratory III	-	x	x	x	-	-	-	-	-
	37	BDA 27201	Engineering Laboratory IV	-	x	x	-	x	-	-	-	-
	38	BDA 28001	Mechanical Engineering Practice III	x	x	-	x	-	-	x	-	-
	39	BDA 28101	Mechanical Engineering Practice IV	x	x	-	x	-	-	x	-	-
	40	BDA 30203	Fluid Mechanics II	x	x	-	-	x	-	-	-	-
	41	BDA 30303	Solid Mechanics II	x	-	-	x	x	-	-	-	-
	42	BDA 30403	Thermodynamics II	x	x	-	-	x	-	-	-	-
	43	BDA 30502	Manufacturing Technology	x	x	x	-	-	-	-	-	-
	44	BDA 30603	Heat Transfer	x	x	-	x	-	-	-	-	-
	45	BDA 30703	Control Engineering	x	x	x	-	-	-	-	-	-
	46	BDA 30803	Mechanical Engineering Design	x	x	-	-	-	x	-	-	-
	47	BDA 37001	Engineering Laboratory V	-	x	x	-	x	-	-	-	-
	48	BDA 37101	Engineering Laboratory VI	-	x	x	-	x	-	-	-	-
	49	BDA 38004	Industrial Training	x	x	-	x	-	-	-	x	-
	50	BDA 40102	Industrial Engineering	x	-	x	x	-	-	-	-	-
	51	BDA 40203	Engineering Design	x	x	-	-	-	x	-	-	-
	52	BDA 40303	Finite Element Method	x	x	x	-	-	-	-	-	-
	53	BDA 49002	Bachelor Degree Project I	x	x	x	-	-	-	-	-	-
	54	BDA 49104	Bachelor Degree Project II	x	x	x	x	-	-	-	-	-
	55	BDA 40603	Noise and Vibration	x	x	-	-	x	-	-	-	-
	56	BD* 4**03	Elective I	x	x	x	-	-	-	-	-	-
	57	BD* 4**03	Elective II	x	x	x	-	-	-	-	-	-
	58	BD* 4**03	Elective III	x	x	x	-	-	-	-	-	-
	59	BEX 17003	Electric and Electronic Technology	x	x	-	x	-	-	-	-	-

Graduation requirement

Requisite for graduation;

1. Application for graduation is done by the student and must be certified by faculty.
2. Passed all required subjects according to the program needs.
3. Accumulate the required credit and acquire the "KB (kedudukan baik)" status.
4. Achieve at least a distinction in Malay Language at the SPM level.
5. Application for graduation must be made by filling out the relevant forms within the specified period.
6. Must be approved and verified by Senate.

Employment Opportunities

Employment opportunities for graduates as a mechanical engineer are very wide, either locally or internationally. The industrial training that graduates had gone through will put them in a strong position to contribute greatly in their chosen field. Generic skills inculcated throughout the duration of the programme also makes graduates more rounded in their outlook. Those interested in research, have the opportunity to contribute in the various research institution throughout the world. Apart from that, post graduates studies are also available to graduates, locally or internatinally, if they acquire excellent academic achievements.

Related information

(Lectures / Facilitators / Projects /Target group / Fees / etc.)

1. Academic Staff
   i. Lecturers for university's compulsary subjects are from the Faculty of Science, Arts and Heritage (FSSW), and Centre of Co-Curricular, Sports and Culture (PKSK). Meanwhile, lecturers for core subjects of this programme are from the faculty itself.

   ii. Engineering Practice subjects will be taught by instructors/facilitators with wide working experience in the industries.

2. Concept of Education
   This programme is a practice-oriented programme with Outc*ome Base Education* (OBE) concept, where students will undergo the theoretical and practical training of 8 semesters in university and 12 weeks of industrial training.

3. Fees
   The fees for this programme are RM 520.00 (one time fee) and RM 1445.50 (recurring fee for every semester)

4. The faculty's PROFORMA is available in www.uthm.edu.my

Prepared by	Verified by
……..	……..
Assoc Prof Dr Hj. Badrul bin Omar	Prof. Dr. Sulaiman bin Hj. Hasan
Deputy Dean (Academic and Internationalization)	Dean
Faculty of Mechanical and Manufacturing Engineering	Faculty of Mechanical and Manufacturing Engineering
Universiti Tun Hussein Onn Malaysia	Universiti Tun Hussein Onn Malaysia
Tel: 07-4537710	Tel: 07-4537700
Date July 2010	Date: July 2010

Note: Information is valid at printing date and subject to change from time to time