

# MANUFACTURING ENGINEERING

is a branch of engineering that requires knowledge and experience in order to fully grasp, exploit and control all the engineering techniques in manufacturing process and methods of producing products. It also requires aptitude to plan for manufacturing methods, research and develop tools, process and machines as well as the ability to combine facilities and systems in the intention of producing cost-effective products in a more feasible way. The Manufacturing Engineering Program in UTeM is developed to instill a strong engineering basics and core, so that graduates of this program are proficient in solving manufacturing engineering problems. Theoretical aspects learnt are equipped with practical sessions, analogous with the engineering education approach of application oriented. This will ensure graduates of manufacturing engineering are able to function effectively in their career.



<http://pps.utem.edu.my/>

<http://fkp.utem.edu.my/>

## Programmes

### By Research

- ▶ Doctor of Philosophy in Manufacturing Engineering
- ▶ Doctor of Engineering in Manufacturing Engineering
- ▶ Master of Science in Manufacturing Engineering

### By Taught Course

- ▶ Manufacturing System Engineering
  - ▶ Industrial Engineering
  - ▶ Quality System Engineering
- ▶ Advanced Materials and Processing
- ▶ Advanced Automation Technology

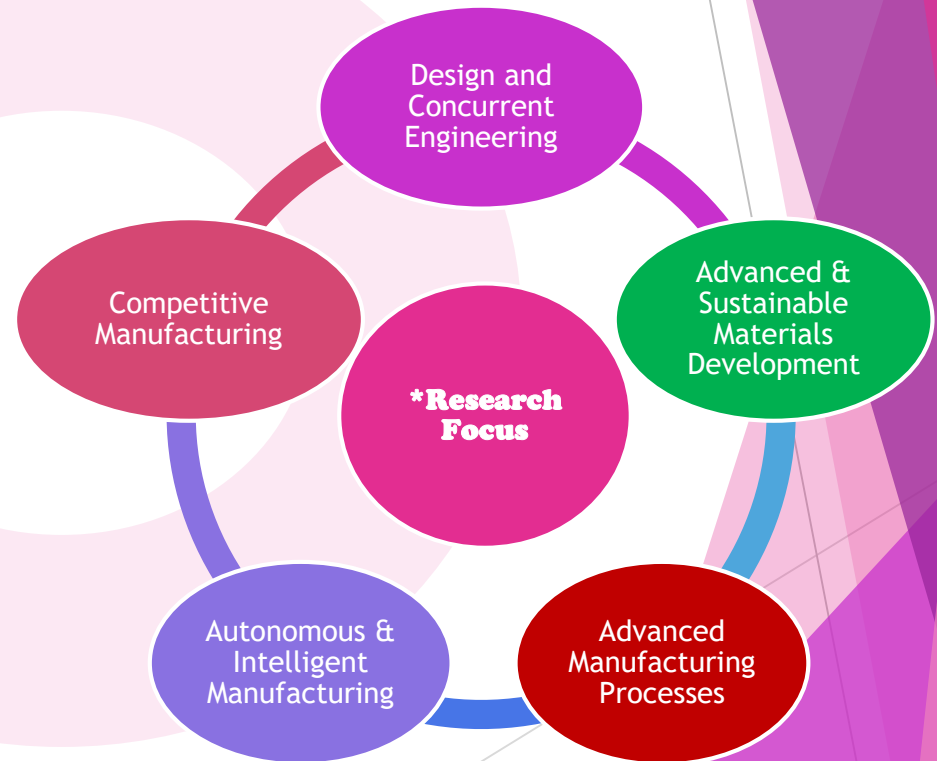
GRADUATE STUDIES

# DOCTOR OF PHILOSOPHY (PhD)

The Doctoral candidate by research is supervised by an academic staff (or a panel of supervisors) from the faculty. The directed research work will focus on a particular subject that introduces candidate to the processes by which new knowledge is developed or/and applied accordingly. The specific topic of investigation will be agreed upon by the supervisor (or panel of supervisors) and the candidate. The academic progress of a candidate is assessed through a research. Progress report is submitted at the end of each semester. The degree is awarded based on an oral examination (viva-voce) of the thesis submitted by the candidate on completion of the study. Candidates intending to study by research may submit their application for admission throughout the year.

Mode of Registration	Full Time	Part Time
Duration (years)	3-8	3-8

	Courses	Credit Hours
Compulsory Course	Research Methodology	3
University Elective Courses (Choose One)	Entrepreneurship	3
	Engineering & Technology Management	3
	Project Management	3
	Quality Systems Management	3
Thesis		84
Total Credit hours		90



\*Doctor of Philosophy and Master of Science (Research Mode)

# DOCTOR OF ENGINEERING (DEng)

The Doctor of Engineering (DEng) is a 4 years doctoral level programme combining academic research and scholarship with industrial problem-solving and project management. The programme incorporates the industrial relevant research, team leadership and unique university-industry partnership. The academic degree awarded on the basis of advanced study and research in engineering is equivalent to a PhD degree in engineering/ applied sciences. The innovative research output from the programme is expected to be immediately useful to the participating company.

The DEng programme offers an opportunity for outstanding engineers to enhance their qualification through a mix of broadly based technical and professional training while completing an industry based research project. Successful researchers after completing the programme not only graduate with a title Doctor of Engineering, but also with the important mix of professional skills, technical knowledge and research experience that will enable them to progress to senior positions within industry at an acceleration rate.

## Programme Structure

Components	Particular
Taught Course	Modules are designed to enhance candidates' knowledge in the related Engineering and Business Management subjects
Research	Based on real industrial problems

University Compulsory Courses (*2 Subjects)	Faculty Courses (*4 Subjects)	Research
Research Methodology Entrepreneurship Engineering and Technology Management Quality Systems Management Project Management	4 master level subjects	<ul style="list-style-type: none"> <li>Based on real industrial problems</li> <li>Research will be carried out in the industry</li> <li>Submit research thesis at the end of study</li> </ul>

## Taught Course

Candidates in this programme are expected to undertake 18 credit hours of subjects. The following is the proposed schedule of the taught component

Components	Year 1		Year 2		Year 3	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Course Work	3 credits	3 credits	3 credits	3 credits	3 credits	3 credits
Research	←—————→					

## Course Work Courses

Mode of Registration	Full Time
Duration (years)	3-8

## Research

The candidate will normally be advised by one academic supervisor and one industrial supervisor. The topic for the research will be jointly decided by the faculty and the participating company. It can be a single project, or a series of projects, firmly based on a real industrial problem and having significant challenging and innovative engineering content. The candidate will spend majority of his/her time (about 80%) with the collaborating company.

# MASTER OF SCIENCE

The Master of Science candidate is supervised by an academic staff (or a panel of supervisors) from the faculty. The directed research work will focus on a particular subject that introduces candidates to the processes by which new knowledge is developed or/and applied accordingly. The specific topic of investigation will be agreed upon by the supervisor (or panel of supervisors) and the candidate. The academic progress of a candidate is assessed through a research. Progress Report submitted at the end of each semester. The degree is awarded based on an oral examination (viva-voce) of the thesis submitted by the candidate on completion of the study. Candidates intending to study by research may submit their application for admission throughout the year.

Mode of Registration	Full Time	Part Time
Duration (years)	2-5	2-5

## Programme Structure

Module	Subject	Credit
Compulsory Subject	Research Methodology	3
University Elective Subjects (Choose One)	Entrepreneurship	3
	Engineering & Technology Management	3
	Project Management	3
	Quality Systems Management	3
	Thesis	30
Total Credit hours		36

# MASTER PROGRAMME BY TAUGHT COURSE

The Master programme by Taught Course (or coursework) is designed to extend the knowledge and skills gained from the first degree and to develop new professional skills of the graduates in the particular area of study. The programme involves lectures, seminars and project work. A minimum of 40 credit hours of taught subjects and a research report and a final Cumulative Grade Point Average (CGPA) of at least 3.0 are required for the award of the Master degree.

The credit hour which comply with the Malaysia Qualification Agency (MQA), of study comprise a combination of compulsory subjects, electives and a Master's Project. Assessments are made through take home assignments, tests and final semester examinations. Students' progress and performance in the Master project is assessed through oral presentations and a written report.

**5 niche Programmes**

**Manufacturing System Engineering  
Industrial Engineering  
Quality System Engineering  
Advanced Materials and Processing  
Advanced Automation Technology**

## Programme Core Courses

Courses	Credit Hours
Sustainable Product Design and Manufacturing	3
Advanced Manufacturing Process	3
Engineering Economy	3
Engineering Optimization	3
Master Project 1	4
Master Project 2	6
Seminar on Manufacturing Engineering	*HW

\*HW=Compulsory Attendance

## MANUFACTURING SYSTEM ENGINEERING

Courses	Credit Hours
Intelligent Manufacturing	3
Design of Manufacturing	3
Lean Manufacturing	3
Robotics & Automation	3

## QUALITY SYSTEM ENGINEERING

Courses	Credit Hours
Design for Quality	3
Total Quality Management	3
Reliability Engineering	3
Statistical Quality Control and Six Sigma	3

## INDUSTRIAL ENGINEERING

Courses	Credit Hours
Production Planning And Control Systems	3
Supply Chain Management	3
Facilities Planning	3
Industrial And Work System Design	3

## ADVANCED MATERIALS & PROCESSING

Courses	Credit Hours
Advanced Technique for Materials Characterization	3
Surface Science and Engineering	3
Energy Materials & Devices	3
Advanced Composites Materials	3
Materials Design & Selection	3
Forensic Engineering Materials	3

## ADVANCED AUTOMATION TECHNOLOGY

Courses	Credit Hours
Advanced Metrology	3
Micromachining Technology	3
Computer Aided Engineering (CAE)	3
Precision Engineering	3
Quality and Reliability	3



# ADMISSION

## Doctoral Programmes

- ▶ A relevant Master degree from UTeM or any other accredited institutions of higher learning; OR
- ▶ Any other qualifications that are recognised as equivalent to a Master degree or other relevant qualifications and experience that are recognised by the Malaysian Government & Senate; OR
- ▶ Candidates with Bachelor's degree (honours) with good grades (minimum of 2.75 or equivalent) and minimum work experience of ten (10) years in the relevant field of interest will be considered together with Accredited Prior Experiential Learning (APEL).
- ▶ For Industrial PhD programme, candidate must have at least 3 years of working experience & currently an employee as professionals, executives, engineers, researchers or equivalent, in the industry or Malaysian company operating overseas. Candidate obtained the approval from employer to accommodate the research project in the workplace
- ▶ Application for Doctoral degree must be accompanied by an initial research proposal.

## Master Programmes

- ▶ A relevant Bachelor's degree (honours) with good grades (minimum CGPA of 2.5 or equivalent) from UTeM or any other institutions of higher learning recognised by the Senate; OR
- ▶ Any other qualification that is recognised as equivalent to a Bachelor's degree (honours) or other relevant qualification and experience that are recognised by the Senate; OR
- ▶ For candidate with Bachelor's degree whose CGPA is between 2.00 and 2.49, relevant work experience in the related fields will be considered. One (1) year relevant experience will be considered as equivalent to 0.1 CGPA; OR
- ▶ Candidates with diploma qualification and minimum work experience of ten (10) years in the relevant field of interest will be considered together with Accredited Prior Experiential Learning (APEL).
- ▶ Applicant for the MBA programme must have at least one (1) year relevant working experience.
- ▶ Application for Master (by Research) programme must be accompanied by an initial research proposal.

## Postgraduate Diploma

- ▶ A relevant Bachelor's degree from UTeM or any other accredited institutions of higher learning; OR
- ▶ Any other certificate that is recognised as equivalent to a Bachelor's degree (honours) or other relevant qualification and experience that are recognised by the Senate.

## LANGUAGE REQUIREMENTS

- ▶ International applicants are required to present the Test of English as a Foreign Language (TOEFL) or the test administered by the International English Language Testing System (IELTS) with the minimum required score.
- ▶ Applicants without TOEFL/IELTS or for those who obtained a score below the requirement above are required to undergo and pass the English language programme conducted by UTeM prior to commencement of the postgraduate programme.
- ▶ Exemption may be given to those who have undertaken regular programmes of studies and graduated from universities that use English as the medium of instruction or who has graduated from UTeM in a programme with English as the medium of instruction.
- ▶ All international students are ENCOURAGED to register for Bahasa Melayu subject during the period of candidature and must attain the minimum score of 'HL'.
- ▶ If deemed necessary, a student may register for a language proficiency programme in order to fulfil specific language requirements.
- ▶ Language proficiency subjects do not carry any credit hours and they are not calculated in the student's CGPA, but are included in the student's workload.

Types of Programmes	Minimum TOEFL Score	Minimum IELTS Score
Master	520	5.5
Doctoral	550	6.0

# FEES

## Doctor of Philosophy (PhD)

Details	Local (RM)	International (RM)
A Registration Fee Orientation Registration Alumni Student smart card Total (A)	280.00	280.00
B Service Fee, Student activities, Administration Total (B) for 6 semesters	1,020.00	1,020.00
C Tuition Fee i) Compulsory subjects (6 credits) ii) Research (84 credits) Total (C)	200.00/ credit  146.00/ credit	400.00/ credit  292.00/ credit  26,928.00
	13,464.00	
D Thesis examination i) Examination fee ii) Re-examination fee	1,500.00 1,500.00	1,500.00 1,500.00
Total (D)	1,500.00	1,500.00
Total (A+B+C+D)	16,264.00	29,728.00

## Master Programme by Taught Course

## Doctor of Engineering (DEng)

Details	Local (RM)
A Registration Fee Orientation Registration Alumni Student smart card Total (A)	280.00
B Service Fee, Student activities, Administration Total (B) for 6 semesters	1,020.00
C Tuition Fee i) Compulsory subjects (18 credits) ii) Research (84 credits)	275.00/credit 370.00/credit
Total (C)	36,030.00
D Thesis examination i) Examination fee ii) Re-examination fee	1,500.00 1,500.00
Total (D)	1,500.00
Total (A+B+C+D)	38,830.00

Details	Local (RM)	International (RM)
A Registration Fee Orientation Registration Alumni Student smart card Total (A)	280.00	280.00
B Service Fee, Student activities, Administration Total (B) for 3 semesters	510.00	510.00
C Tuition Fee i) Credit Hours ii) RM/credit hour Total (C)	40 hours 150.00 6,000.00	40 hours 262.50 10,500.00
Total (A+B+C)	6,790.00	11,290.00

## Master Programme by Research

Details	Local (RM)	International (RM)
A Registration Fee Orientation Registration Alumni Student smart card Total (A)	280.00	280.00
B Service Fee, Student activities, Administration Total (B) for 3 semesters	510.00	510.00
C Tuition Fee i) Compulsory subjects (6 credits) ii) Research (30 credits) Total (C)	156.00 /credit 117.00/ credit 4,446.00	312.00/credit 234.00/credit 8,892.00
D Thesis examination i) Examination fee ii) Re-examination fee Total (D)	750.00 750.00 750.00	750.00 750.00 750.00
Total (A+B+C+D)	5,986.00	10,432.00

# Chance for FINANCIAL SUPPORT



<https://www.ptptn.gov.my/>



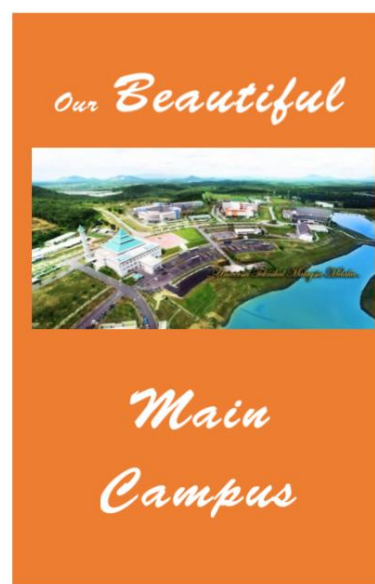
<http://www.kwsp.gov.my/portal/home>



<http://www.mara.gov.my/>



<https://tapem.melaka.gov.my/1/>



## Contact Person:



Name PROFESOR MADYA IR. DR. MOHD ASYADI 'AZAM BIN MOHD ABID  
 Designation TIMBALAN DEKAN (PENYELIDIKAN & PENGAJIAN SISWAZAH)  
 Related Issue PhD, DEng & MSc  
 VoIP No. +6062701323  
 E-mail @utem.edu.my asyadi



Name PROFESOR MADYA DR NORAIHAM BINTI MOHAMAD  
 Designation PENYELARAS PASCASISWAZAH FAKULTI KEJURUTERAAN PEMBUATAN  
 Related Issue Master by Taught Course (Mainstream)  
 VoIP No. +6062702686  
 E-mail @utem.edu.my noraiham

## Contact Address

Faculty of Manufacturing Engineering  
 Universiti Teknikal Malaysia Melaka  
 Hang Tuah Jaya 76100 Durian Tunggal  
 Melaka, Malaysia  
 Tel: +606 270 2571  
 Fax: +606 270 1047  
<http://fkp.utem.edu.my/>



Name PROFESOR MADYA DR NUR IZAN SYAHRIAH BINTI HUSSEIN  
 Designation TIMBALAN PENGARAH (PEJABAT TIMBALAN NAIB CANSELOR (AKADEMIK & ANTARABANGSA)  
 Related Issue Master by Taught Course (Offshore)  
 VoIP No. +6062704593  
 E-mail @utem.edu.my izan