

# Engineers & Society

## CHAPTER 1 (Part 2) INTRODUCTION

by

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- \* Professional Engineers
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- \* Engineer at Public and Private Sectors



# Professional Engineers

# Characteristics of Professional Engineers

- \* Posses education, knowledge and skills in engineering specialty that exceeds that of general public
- \* Willing to stay up to date with latest discoveries and technologies by participating in forums, continuous education and reading
- \* Willing to improve engineering knowledge, ideals and practice

Source: <http://www.cityandguilds.com>

# Characteristics of Professional Engineers

- \* Have a sense of responsibility and service to society, employers and clients
- \* Act honorably in their dealings with others
- \* Willing to follow established codes of ethics for their profession
- \* Willing to guard their professional integrity and ideals

# Obligations of Professional Engineers

- \* Included in solemn statements prepared by engineering societies.
- \* National Society of Professional Engineers (NSPE) –
  - \* *As a Professional Engineer, I dedicate my professional knowledge and skills to the advancement and betterment of human welfare.*

Source: <https://www.spusa.org/>, <https://www.nspe.org/>

# Obligations of Professional Engineers

- \* *I pledge:*
  - \* *To give the utmost performance;*
  - \* *To participate in none but honest enterprise;*
  - \* *To live and work according to laws of man and the highest standards of professional conduct*
  - \* *To place service before profit, the honor and standing of the profession before personal advantage, and public welfare above all other considerations*
- \* *In humility and with need for Divine Guidance, I make this pledge*

Source: <https://www.spusa.org/>, <https://www.nspe.org/>

# Professional registration

- \* In Malaysia, registration of professional engineers managed by BEM and IEM
- \* Why do we need to register and qualify professional engineers?



# Professional organization

- \* Professional engineering organizations are formed to serve the technical and professional needs of the engineering profession.

# The Importance of Engineering Organizations

- \* To protect the interest of the profession
- \* To provide support, advice and guidance
- \* To register and regulate its member
- \* To promote ethical engineering practice
- \* To promote continued learning and education

# Activities

- \* Publish educational journals, magazines, handbooks etc.
- \* Organize courses, forums, conferences etc.
- \* Social activities; games and sports, annual dinner etc.

# BEM

- \* Board of Engineers, Malaysia
- \* Government agency
- \* Statutory body constituted under the Engineers Act (1967)
- \* Formed in 1972
- \* 1 president, 14 ordinary members, 1 Board of Architects rep. & 1 Board of Quantity Surveyors rep.

Source: [www.bem.org.my](http://www.bem.org.my)

# BEM Functions

- \* BEM maintains a register
- \* Processing Applications for Registration
- \* Assessment of Academic Qualification
- \* Regulating the Conduct and Ethics of the Engineering Profession
- \* Disputes on Professional Conduct and Ethics
- \* Promotion of Continued Learning and Education

Source: [www.bem.org.my](http://www.bem.org.my)

# Requirements for Graduate Engineer

- \* Mandatory for university graduate to register as Graduate Engineer if he/she wants to take up employment as a Graduate Engineer
- \* Engineering Degree awarded by Malaysia:
  - \* An engineering degree accredited/recognised by Engineering Accreditation Council (EAC).
- \* Engineering Degree awarded by Other Country:
  - \* Based on the accreditation given by professional body who is a signatory of Washington Accord (WA).

# UNRECOGNISED ENGINEERING PROGRAMME

- \* Master programme (taught course)
  - \* Complete a Master's programme (course work) in the related engineering discipline. Subjects to be taken in the Master programme must enhance the subjects taken in the BEng (Hons).
- \* Top up Course (Subjects)

# Requirements for Professional Engineer

- \* Route to become a Professional Engineer
- \* General requirement: Must be a Graduate Engineer with BEM
- \* 3 route to become a Professional:
  - \* Route No. 1 - Professional Assessment Examination, BEM
  - \* Route No. 2 - Corporate Member of IEM
  - \* Route No. 3 - Route for a Professional Engineer from an overseas Regulatory Body



# Route No. 1

- \* Obtained 3 years practical experience (effective upon registration with BEM) where:
  - \* at least two years of general training that will provide a sound basis for professional development; and
  - \* at least one year of professional career development and training providing wide exposure to the various managerial and technical expertise in engineering practice where;
  - \* at least one year of the above training must be obtained in Malaysia under the supervision of a Professional Engineer in the same branch of engineering

# Route No. 1

- \* Passed Professional Assessment Examination conducted by the Board;
- \* Attended the required courses determined by BEM as follows:
  - \* Code of Ethics (12 hours)
  - \* Health & Safety at Works (12 hours)
  - \* Engineering Management Practices (12 hours)
  - \* Courses related to graduate's branch of engineering (24 hours)

## Route No. 2

- \* A Corporate Member of the Institution of Engineers Malaysia (IEM)
- \* Complied with the requirements as determined in Route 1

## Route No. 3

- \* Need not sit and passed the Professional Assessment Examination or be corporate member of IEM.
- \* Submit to BEM a certified latest Professional Engineer Certificate issued by a Regulatory Body of other country.
- \* The professional engineers status shall be check that it is equivalent to BEM's professional engineer qualifications eligibility.
- \* Comply with the requirements as determined by the Board

# Institution of Engineers, Malaysia (IEM)

- \* Function: promote and advance the science and profession of engineering in any or all of its disciplines and to facilitate the exchange of information and ideas related to engineering.
- \* Formed in 1959
- \* All engineering disciplines
- \* 30,000+ members
- \* Student member, graduate member, corporate member, senior, fellow
- \* IEM Council - Executive Committee comprising the President, Deputy President, seven Vice Presidents, Honorary Secretary, Honorary Treasurer and five members elected from the Council



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