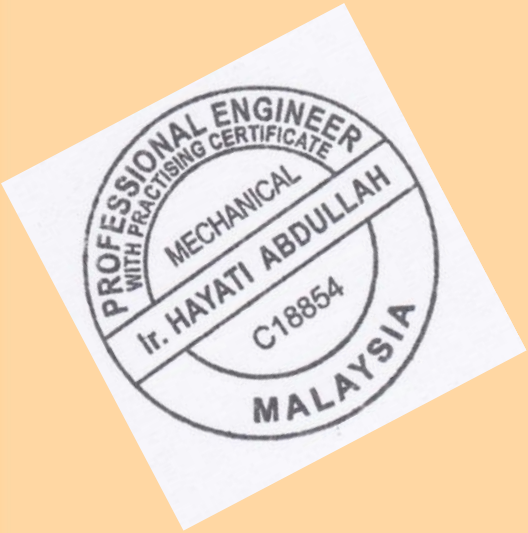
UTM
UNIVERSITI TEKNOLOGI MALAYSIA

ROUTE TO PROFESSIONAL ENGINEER



ASSOC. PROF. Ir. DR. HAYATI ABDULLAH

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School of Mechanical Engineering

Universiti Teknologi Malaysia

Immediately after graduation, you

MUST register with B E M

Board of Engineers, Malaysia (BEM)

WHY

It's the Law……

REGISTRATION OF ENGINEERS ACT 1967

Act of Parliament

Act 138

Regulations Governing the Engineering Profession, Practice & Services

LAWS OF MALAYSIA

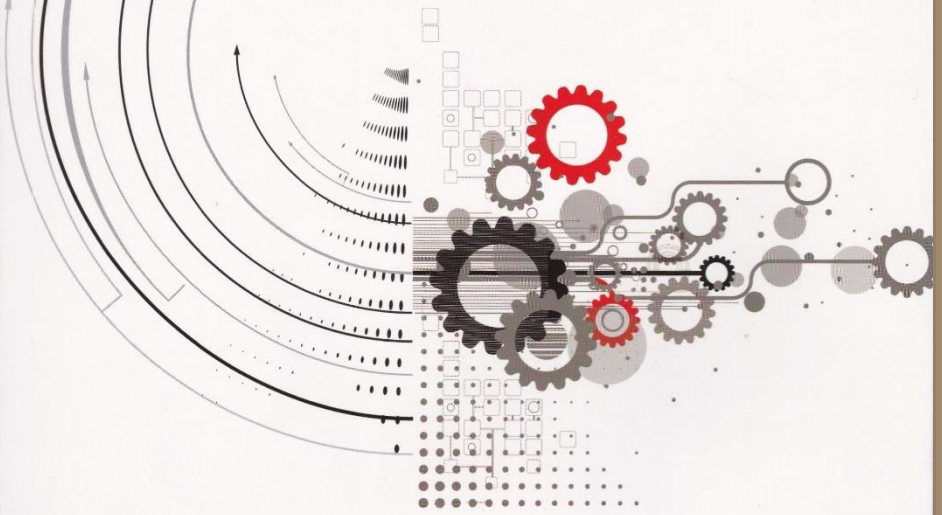
REGISTRATION OF ENGINEERS ACT 1967

AND

REGISTRATION OF ENGINEERS REGULATIONS 1990

(Incorporating Amendments up to 2015)

WITH EXPLANATORY NOTES TO LATEST AMENDMENTS



- It is **mandatory** for university graduate to register as Graduate Engineer if he/she wants to take up employment as an Engineer
- A Graduate Engineer is a person registered under Section 10(1) of the Registration of Engineers Act 1967 (Revised 2015)
- According to Section 7(1B), a Graduate Engineer will be entitled to describe himself or hold himself out under any name, style or title using the abbreviation **"Grad.Eng."** after his name or in any way associate with his name

Why You Should Register

- BEM recognises the experience gained by an engineering graduate only after he has registered as a Graduate Engineer.
- Experience gained before that will not be considered.
- It is prudent to register as Graduate Engineer at the very beginning of engineering career.

What is BEM ?

- Statutory body constituted under the Registration of Engineers Act (1967)
- Formed on 23rd August 1972
- The only body certifying Professional Engineers
- BEM falls within the ambit of responsibility of the Minister of Works

Board of Engineers Malaysia – BEM

Website: www.bem.org.my

The Board is established for the purpose of regulating the professional conduct and practice of registered engineers in order **to safeguard the safety and interest of the public**

Functions of BEM

- Keep and maintain the Register
- Process the Application for Registration
- Fix the Scale of Fees
- Assess Academic Qualification
- Regulates the Practice & Conduct of the Engineering Profession

Functions of BEM

- Conduct and Monitor Continuing Professional Development Programmes
- Conduct Professional Assessment Examination.

Interpretation of an Engineer

"Registered Engineer" – a Graduate Engineer; Professional Engineer

"Graduate Engineer" – a person registered under subsection 10(1)

" Professional Engineers" - a Graduate Engineer who has undergone practical trainings and has passed the Professional Assessment Examination

Only registered Professional Engineers with *BEM* are entitled to use the designation Ir. (Ingenieur)

Professional Engineer Stamp

Professional Engineer Stamp

1st tier registration

PE
(Professional Engineer)

Professional Engineer with Competency Certificate

2nd tier registration

PEPC
(Professional Engineer With Practicing Certificate)

Composition of BEM

BEM consists of 17 Board Members comprising of :

1. President
2. 14 Professional Engineers from various sectors :
    1. 5 from public sector.
    2. 5 from private practice.
    3. 2 from local authority or statutory authority.
    4. 2 from private sector (full time employment).

3. 1 representative of the Board of Architects Malaysia.
4. 1 representative of the Board of Quantity Surveyors Malaysia.

The appointment are by the Ministry of Works under Section 3 of the Registration of Engineers Act 1967

Assessment of Academic Qualifications

- BEM through its **Engineering Accreditation Council (EAC)** assesses and accredits engineering degrees offered by institutions of higher learning
- The EAC is the co-ordinating body on accreditation, representing the BEM, IEM, Lembaga Akreditasi Negara (LAN) and Jabatan Perkhidmatan Awam Malaysia (JPA)
- The accreditation team visits the institution to audit the facilities and have dialogue with academic staff and students

STATISTICS

Registered Engineers with BEM	
Professional Engineer with Practising Certificate (PEPC)	9,275
Professional Engineer (PE)	4,794
Graduate Engineer	139,033

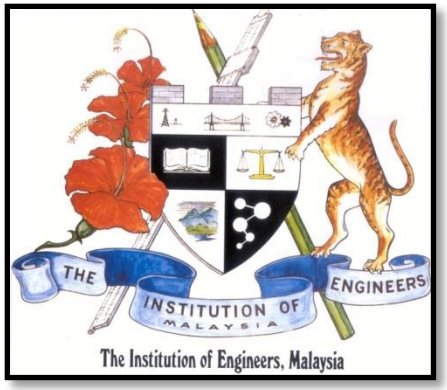
I E M

The Institution of Engineers, Malaysia

IEM

The Institution of Engineers, Malaysia

HEADQUARTERS :
Bangunan Ingenieur, Lot 60/62,
Jalan 52/4, Peti Surat 223 (Jalan Sultan),
46720 Petaling Jaya,
Selangor Darul Ehsan



Institution of Engineers Malaysia (IEM)

- A learned society registered under the Society's Act
- Membership is voluntary

IEM

- The Institution of Engineers, Malaysia (in short IEM) is a professional learned society for the aspiring engineering students and practicing engineers to work together for the betterment of the engineering profession.

- Formed in 1959 with 60 members

- To-date, IEM membership stood at about 45,000 members making it the largest professional body in Malaysia

TYPE OF IEM MEMBERSHIP

☑ **Student Member** – open to all engineering students

☑ **Graduate Member** – open to all practicing engineers registered with BEM

☑ **Corporate / Fellow Member** – upgrading for experience engineers leading to Professional Engineer status

☑ Associate Member – non-degree engineering practitioner; diploma or certificate holders

☑ Incorporated Member – Professional Engineers from international Engineering Institution recognized by IEM

☑ Honorary Member – distinguish person who contributed to engineering profession

FUNCTIONS OF IEM

- To promote and advance the Science and Profession of Engineering in any or all its disciplines
- To facilitate the exchange of information and ideas related to Engineering.

BENEFITS OF IEM MEMBERSHIP

☑ Establish networking groups amongst engineers

☑ Attend Technical Talks, Seminars or Courses and Technical Visits

☑ Attend Professional Development Program (PDP)

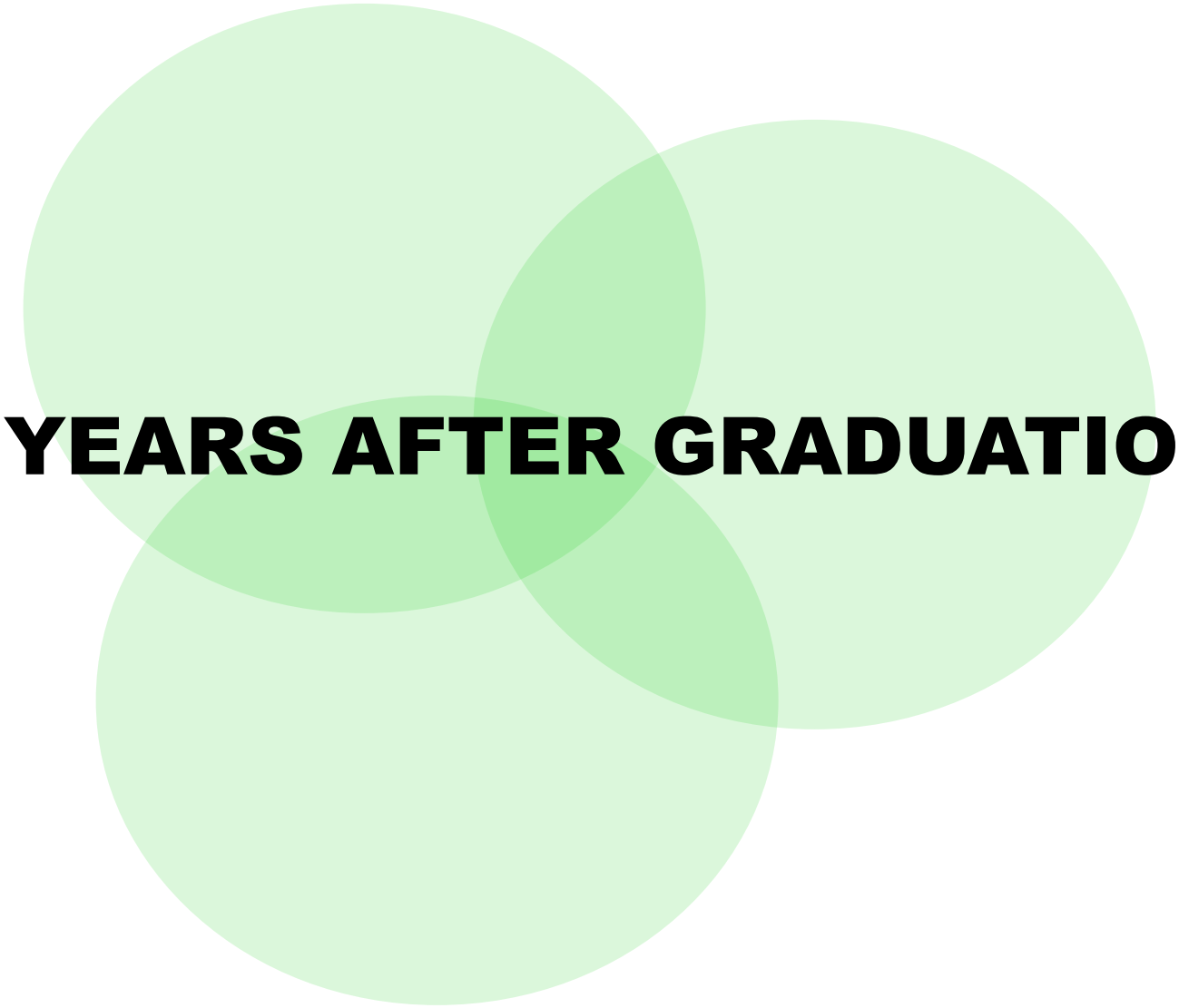
☑ Route to Professional Engineers

☑ Attend Continuing Professional Development (CPD)

IEM OFFICES

Head-Quarters:
Bangunan Ingenieur, Lot 60/62, Jalan 52/4,
Peti Surat 223
46720 Petaling Jaya, Selangor

Tel: 03-79684001



> 3 YEARS AFTER GRADUATION

ROUTE TO MIEM and PEng

Image by Borko Manigoda from Pixabay

BEM -
Board of Engineers Malaysia

IEM -
The Institution of,
Engineers Malaysia

Registration

Membership

Graduate Engineer (*Mandatory*)

Professional Engineer (Ir.)

Graduate Member

Corporate Member

Graduate Engineer Registration

- Required Documents (copies of)
  - Degree scroll and official transcripts
  - Diploma scroll and official transcripts (if applicable)
  - Identification Card
- All the documents must be certified by a Professional Engineer recognised by BEM
- Application shall be made online using MyBEM system
- Payment: RM50.00 (a non-refundable processing fee)

ROUTE TO BECOME A PROFESSIONAL ENGINEER

Route A

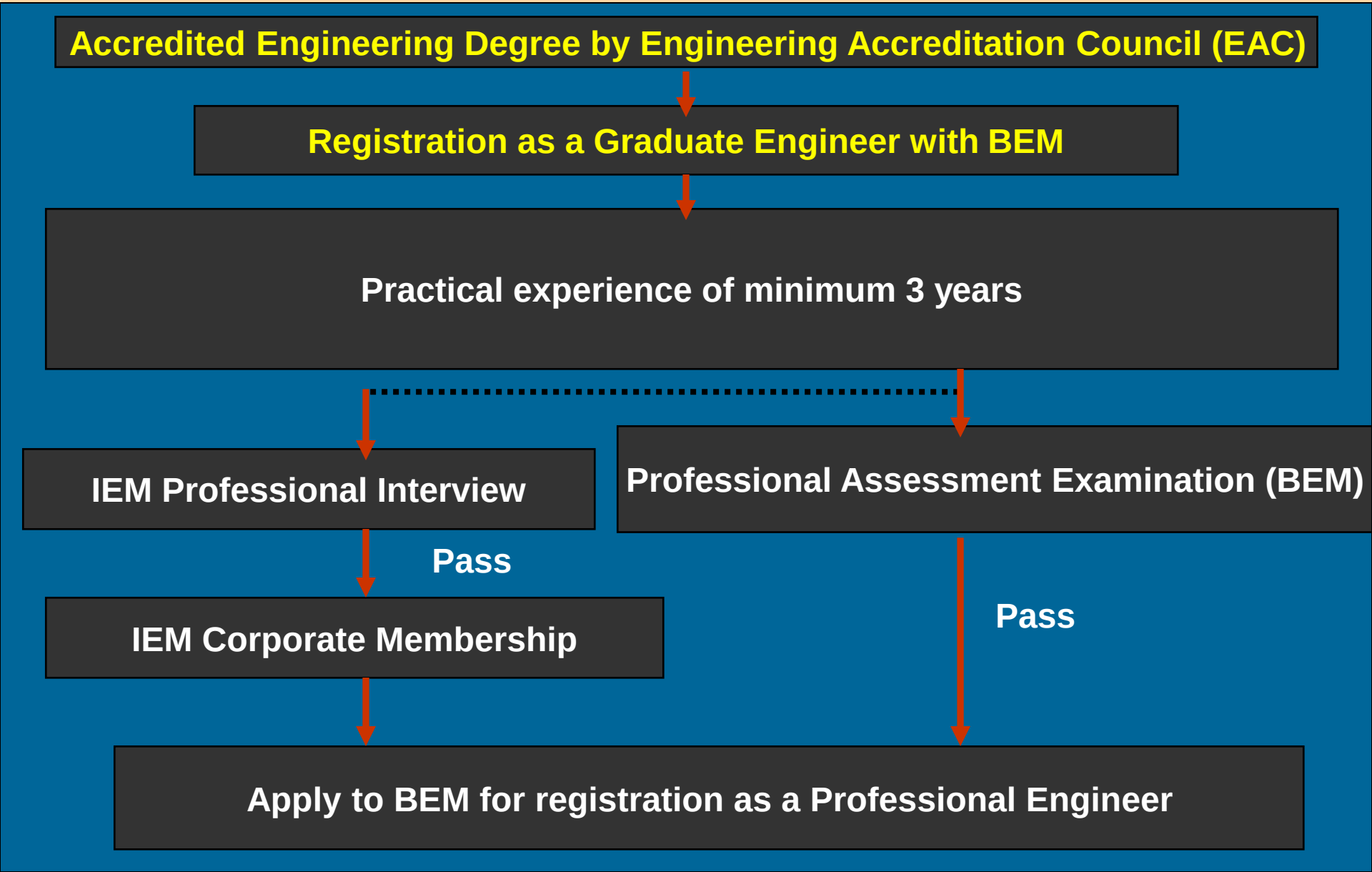
(Professional Assessment Examination)

Route B
(Route for a Professional Engineer from an overseas Regulatory Body)

Route C

(Corporate Member of IEM)

Route To Become A Professional Engineer



The Benefits

Registration as Professional Engineers

The Benefits

- A Qualified Engineer
- Recognise by Government of Malaysia and your peer.
- Hold an engineer position in any engineering organisations.
- Opportunity to work with overseas engineering company.
- Self satisfaction – top of engineering profession

The Benefits

- May submit plan, drawings, schemes, proposals, reports, designs or study to any authority in Malaysia. (but with greater responsibility)
- May perform professional engineering services or open up consulting firm.
- May apply to register as:
  - ✓ ASEAN Chartered Professional Engineer
  - ✓ APEC Engineer
  - ✓ Other International Engineering Registers

TRAINING REQUIREMENTS FOR GRADUATE ENGINEERS

Image by Borko Manigoda from Pixabay

Registration of Engineers Regulation (1990) - 22 (1).

22. (1) The practical experience that a Graduate Engineer is required to obtain under section 10(1)*(b)* of the Act so as to be entitled to apply for registration as a Professional Engineer shall be carried out to the satisfaction of the Board, for a period of at least three years, and shall include the following:

(a) the Graduate Engineer must undergo -

(i) at least two years of general training that will provide a sound basis for professional development; and

(ii) 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 training must be obtained in Malaysia under the supervision of a Professional Engineer in the same branch of engineering as that practised by the Graduate Engineer, although Professional Engineers in other related branches of engineering may be accepted with the prior approval of the Board; and

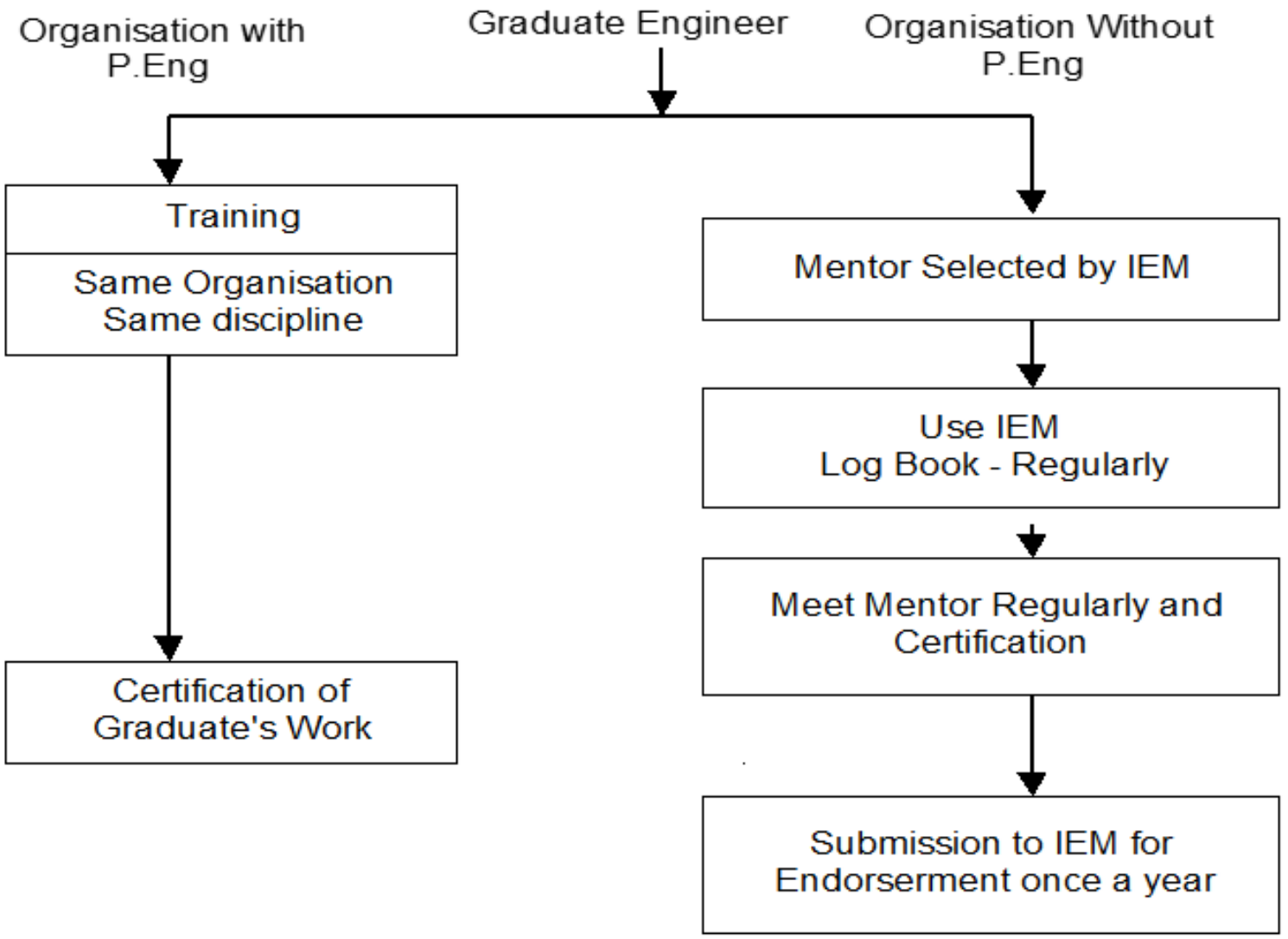
Ref: BEM Registration of Engineers Regulations 1990

PRACTICAL TRAINING FOR GRADUATE ENGINEER

- Be trained under a Professional Engineer for a period of minimum 3 years (normally 4 to 6 years)

- Experience should be acquired in design, site/field work, and management/planning besides application of engineering science & knowledge

RECOGNIZED TRAINING



Design Experience

- The candidate is expected to have sufficient experience in the design of mechanical components, equipment or a system

- The design may include alterations, addition or modifications to existing plant and equipment.

Field/Site Experience

- The candidate is expected to have sufficient workshop/site experience in the supervision, fabrication, installation, commissioning, operation and maintenance of mechanical engineering works and/or other related works

- Familiar with all regulations and codes governing safe practice

Office/Management/Planning Experience

- The candidate is expected to have some experience in the office or the management of projects/works

- This may include feasibility studies, costing, budgeting, tendering, contract administration etc

Professional Interview

- The Professional Interview is a Peer Review Process comprising on the professional competency of the candidate by corporate members of IEM with respect to:
  - Grasp and application of engineering fundamentals
  - Technical report
  - Oral Examination
  - Essay Writing (Technical Essay & Essay on Ethics)

IEM Professional Interview (PI)

The **IEM PI** consists of two parts, namely:

Part 1 : Documentary review of competency evidence to assess Applicant's eligibility and readiness to sit for Professional Interview.

Part 2 : In-person assessment of Candidate that consists of a face-to-face oral interview as well as writing two essays :

- Technical Essay
- Essay on Ethics

IEM Professional Interview (PI)

Part 1 : **Documentary review** of competency evidence to assess Applicant's eligibility and readiness to sit for Professional Interview.

- **Training and Experience Report**
  - Career History and Portfolio (with evidence)

Start/End Date	Employer, Job Title & Supervising Engineer	Experience (Areas of Competencies)**	Mentor/Supervisor

- **Technical Report**

IEM Professional Interview (PI)

Part 1 : Competency categories

Category A: **Knowledge and Understanding**

Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology.

Category B: **Design & Development of Process, System, Service & Product**

Apply appropriate theoretical and practical methods to the analysis and solution of engineering problems

Category C: **Responsibilities, Management and Leadership**

Provide technical and commercial management.

Category D: **Communication and Inter-personal Skills**

Demonstrate effective interpersonal skills

Category E: **Professional Commitment**

Demonstrate a personal commitment to professional standards, recognizing obligations to society, the profession and the environment

Summary

- Register as Graduate Engineers with BEM upon graduation
- Become Graduate Member of IEM
- Undergo a period of training experience for a minimum 3 years:
  - Supervised by P.Eng in the same discipline (Mentor)
  - Keep systematic record of training (i.e. Log Books, technical documents, drawings)
- Pass Professional Examination (PAE) or Professional Interview (PI) for PE
- Pass Competency Examination for PEPC

I Learned Something Today!

….Thank You