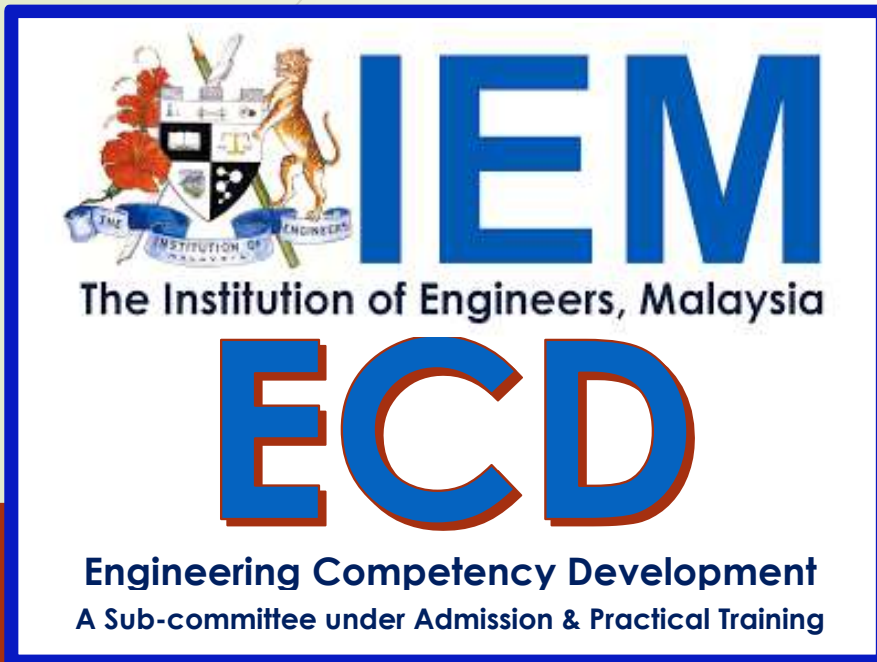# Engineering Competency Development Program (ECD)

(previously known as Logbook Training Scheme)

ECD Engagement Session: Route to Professional Engineer

16 July 2022

Moderator

Ir. Mohd. Azha bin Abu Samah
PEPC, FIEM
ECD Committee's Chairman

Welcome to the ECD 2022 Webinar!

Session will go on for 2 hours from 9 am to 11 am.

1 hour 30 minutes allocated for Speakers.

30 minutes allocated to answer any questions.

Questions can be typed on Question menu at the Control Panel.

Questions shall be entertained at the end of the session.

Feedback Email: **ecd@iem.org.my** or **farezah@iem.org.my** or **halimah@iem.org.my**

Talk Objectives

- To briefly introduce Engineering Competency Development to newcomers

- To provide a general guidance on how to be a Professional Engineer

- To provide information on how ECD can help IEM Graduate Members to be a Professional Engineer

Talk Contents

Introduction	The ECD Program	The Mentee	The Mentor

The Logbook

Meet our Speakers

Speaker 1:
Ir. Juares Rizal bin Abdul Hamid
PEPC, FIEM
ECD Committee

Speaker 2:
Dato' Ir. Hj. Rozlan Ahmad Zainuddin
PEPC, FIEM, DIMP, PPT
ECD Committee

ENGINEERING COMPETANCY DEVELOPMENT SUB-COMMITTEE

Discipline	Member
IEM Secretariat	Cik Farezah Junaidi / Pn. Halimah Email: **ecd@iem.org.my** **/ farezah@iem.org.my** **/ halimah@iem.org.my** Tel : 03 – 7968 4007 Fax : 03 – 7957 7678
Electrical/Electronics	Ir. Mohd. Azha bin Abu Samah (Chairman)
	Ir. Lim Kim Ten
Chemical	Ir. Juares Rizal bin Abdul Hamid (Advisor)
	Ir. Assoc. Prof. Dr Lee Tin Sin
	Ir. Razmahwata Razalli
Mechanical	Ir. Al-Khairi Mohd. Daud
	Ir. Ts. Dr Abdul Talib
Civil	Dato' Ir. Hj. Rozlan Ahmad Zainuddin
	Ir. Han Seng Kong
	Ir. Lau Eng Kee
Petroleum	Ir. Abdul Razak bin Yakob (Past Chairman)

The ECD Sub-Committee

Speaker 1:

Ir. Juares Rizal

PEPC, FIEM
Ir. ECD Committee

Introduction – The Route You Choose

Where Are You Heading To?

Student Member of IEM → Graduate Engineer of IEM → Professional Engineer / IEM Corporate Member → Professional Engineer with Practicing Certificate

3 Years

Varies

Upon Graduation Register with BEM

Professional Assessment/Interview

Professional Competency Examination

Graduate Member

Corporate Member

Fellow etc.
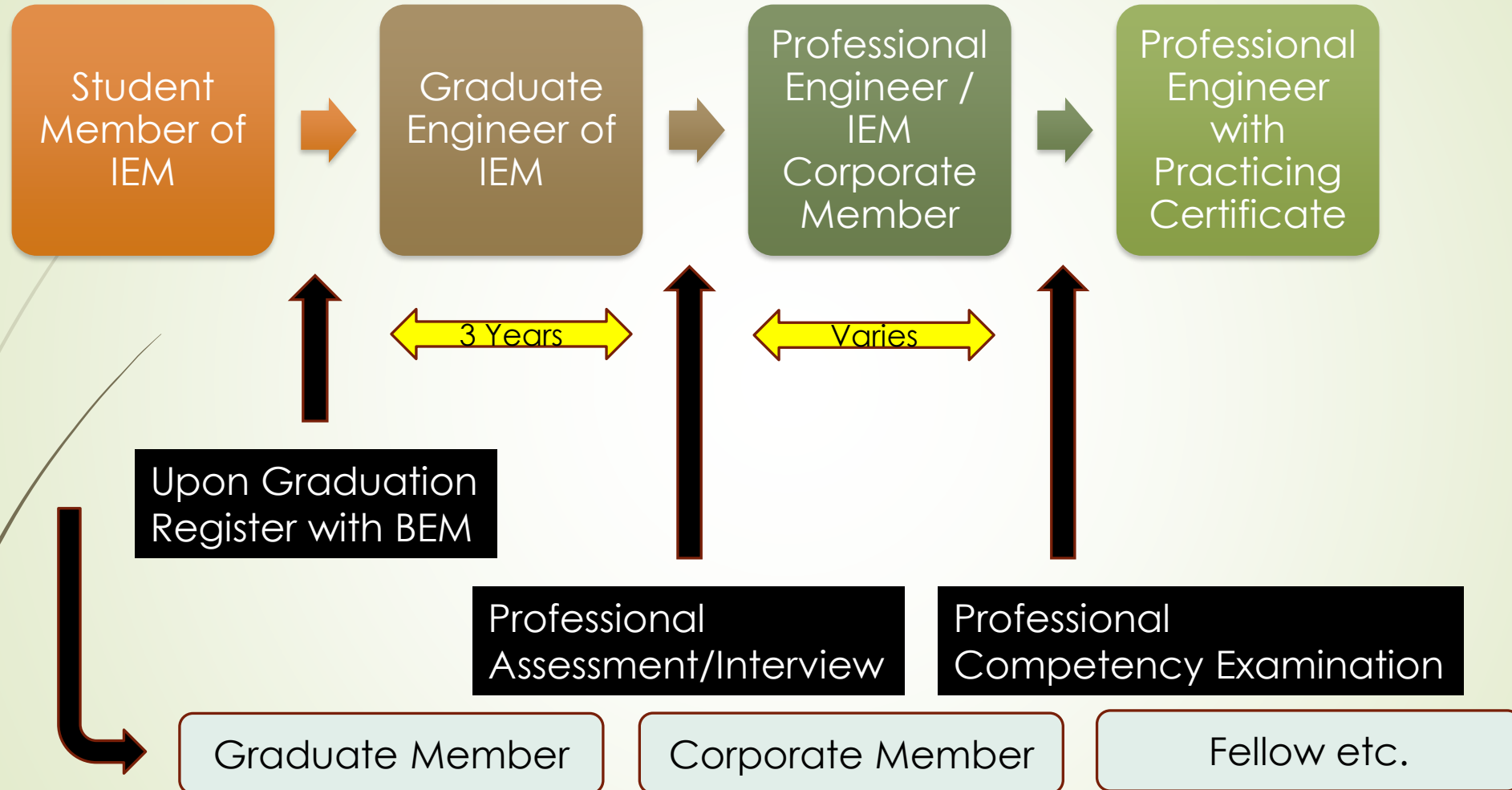
Board of Engineers Malaysia (BEM)

Registration of Engineers Act (REA)

Three (3) Routes to Professional Engineers (PE)

A registered Graduate Engineer who :

Route A Has passed a **professional assessment examination (PAE)** conducted by the Board;

Route B Holds a **professional qualification** which the Board considers to be equivalent to the professional assessment examination conducted by the Board;

Route C Is a **Corporate Member of the Institution of Engineers, Malaysia (MIEM).**

http://bem.org.my/web/guest/professional-engineer

The ECD Program

Why IEM brings to you ECD?

To assist **IEM Graduate Engineers** who are unable to obtain the **supervision [at least one (1) year in Malaysia]** of a P.Eng. in their own organization.

To assist **IEM Graduate Engineers** obtain their **practical experience** under a formal training scheme supervised by a Corporate Member of the Institution before appearing for the Professional Interview.

The Program
The Big Picture

The Logbook

The Sub-Committee

ECD Program

The Mentee
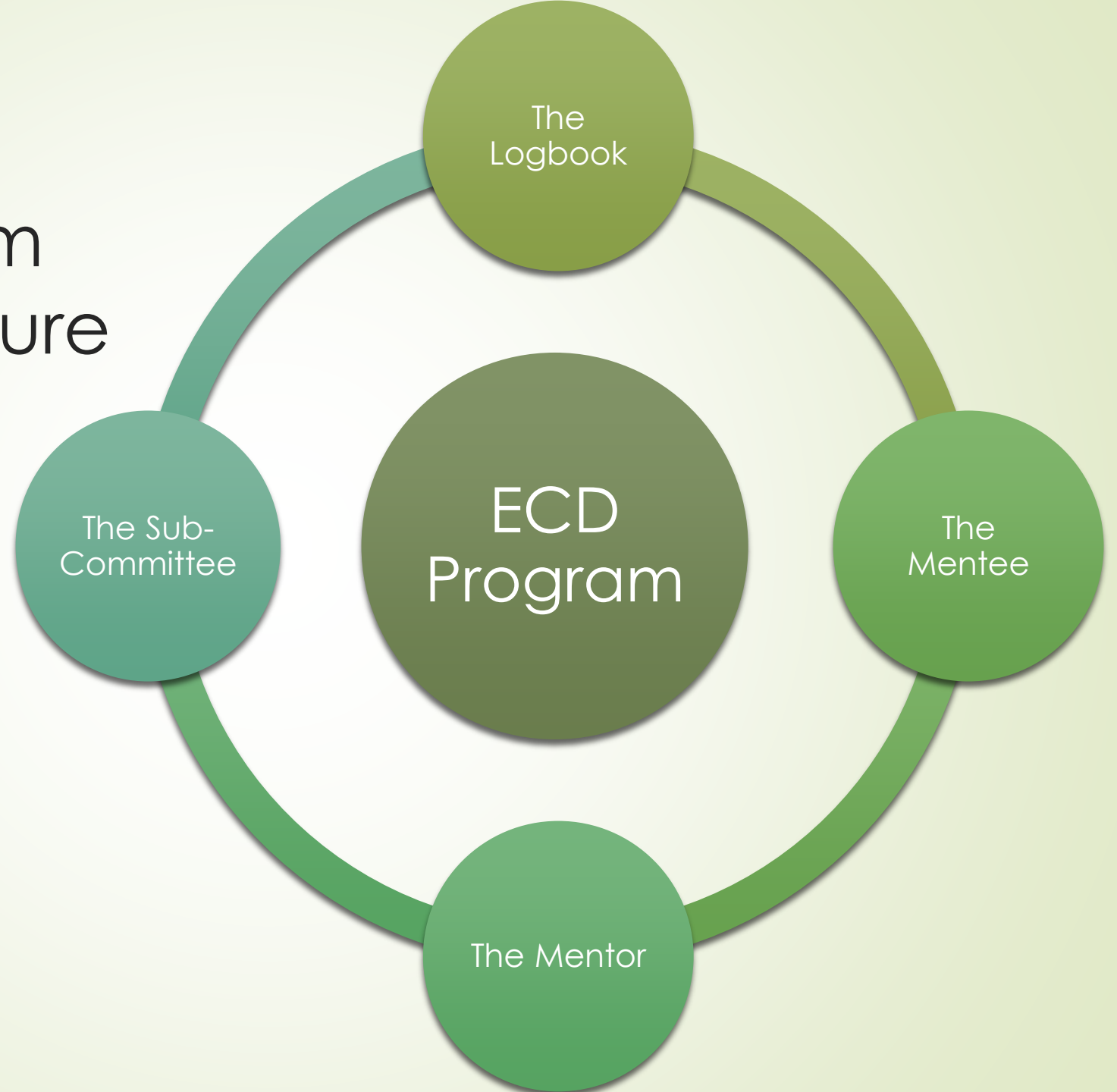
The Mentor

The Big Picture

Mentee Register
- Choose a Mentor

Quarterly Meeting
- Report reviewed by Mentor

Annual Report Submission
- 3 years
- Reviewed by Committee

Professional Interview
- Training & Experience Report
- Technical Report

The Big Picture 2

Mentee Register

Choose a Mentor

Quarterly Meeting

Report reviewed by Mentor

Annual Report Submission

3 years

Reviewed by Committee

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Training & Experience Report

Technical Report

Engineering Competency Development (ECD)

Home / Membership / Engineering Competency Development (ECD)

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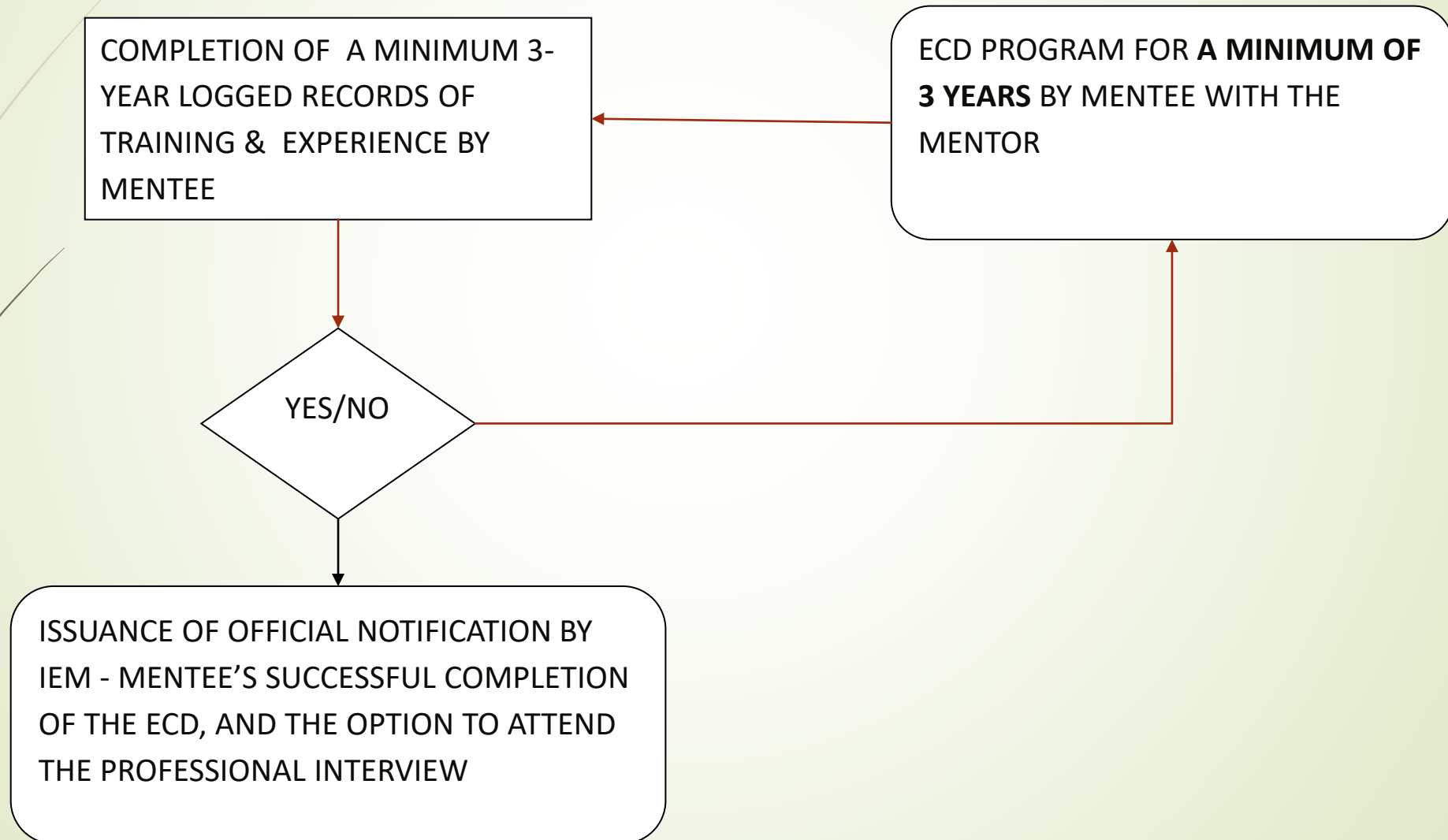7968 4007 or email ecd@iem.org.my for further information.

Additional Information	Posted on		
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IEM ECD Senior Mentor Criteria Info	02-Jul-2021	Download	Post Comment
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ACTIVITY FLOW DIAGRAM OF IEM'S ECD
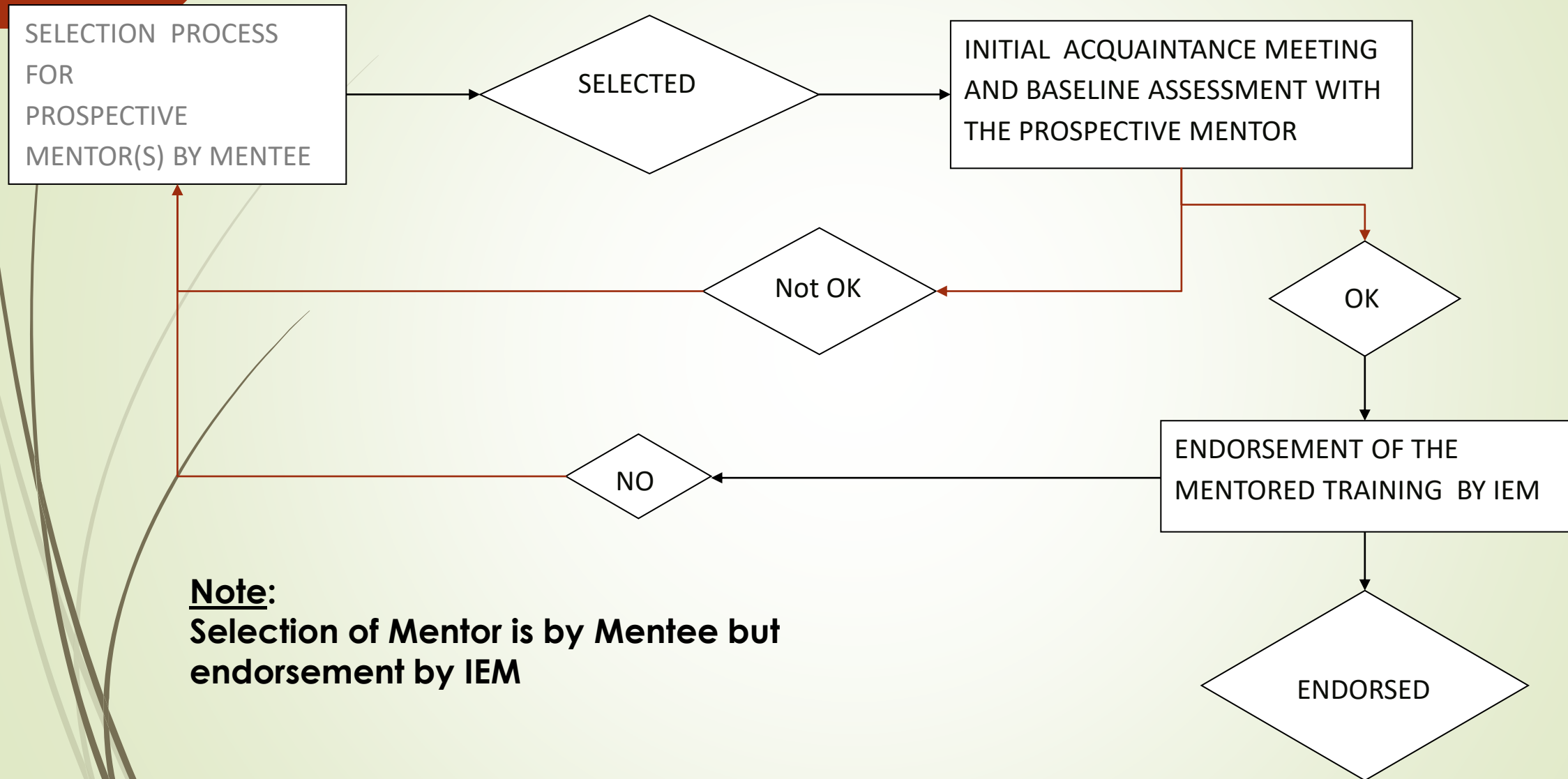
Note:
Selection of Mentor is by Mentee but endorsement by IEM
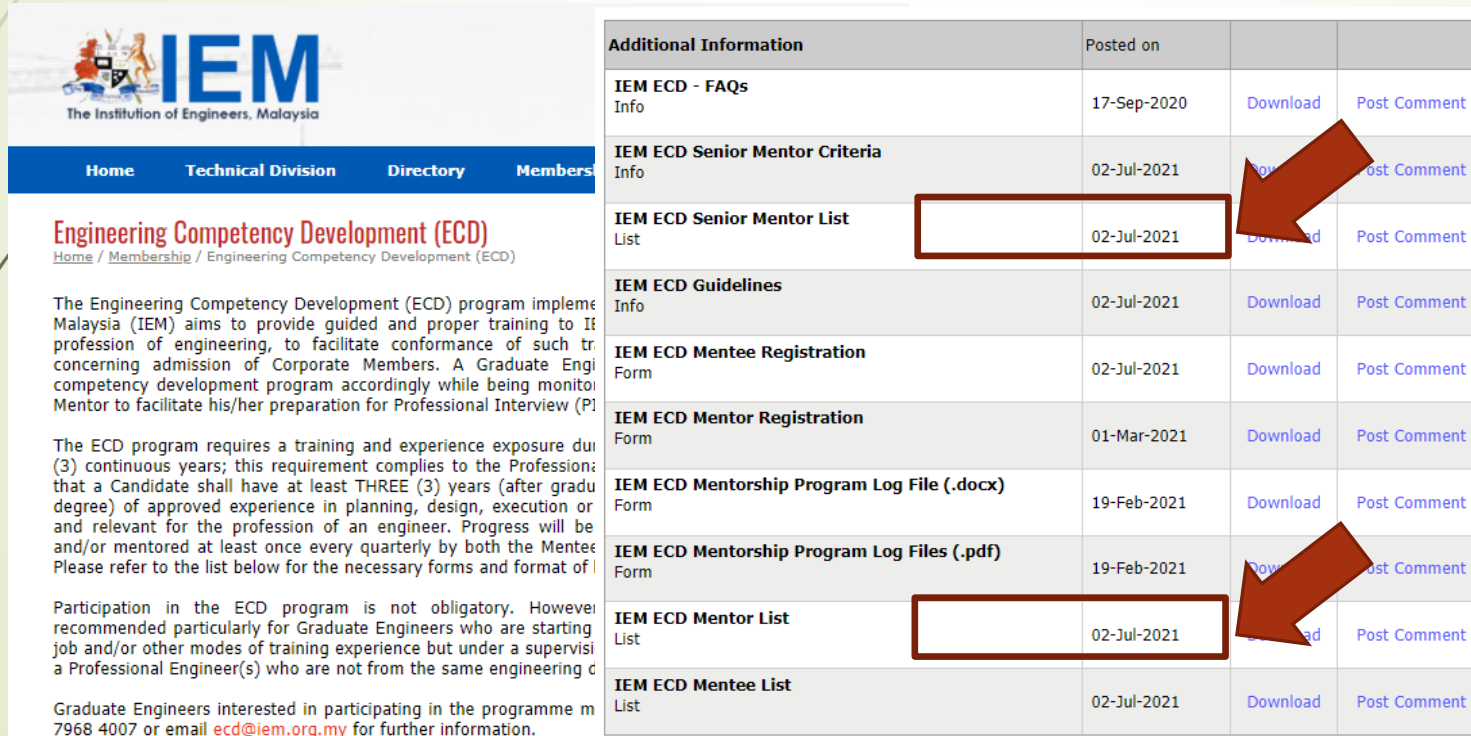
ACTIVITY FLOW DIAGRAM OF IEM'S ECD

COMPLETION OF A MINIMUM 3-YEAR LOGGED RECORDS OF TRAINING & EXPERIENCE BY MENTEE

ECD PROGRAM FOR **A MINIMUM OF 3 YEARS** BY MENTEE WITH THE MENTOR

YES/NO

ISSUANCE OF OFFICIAL NOTIFICATION BY IEM - MENTEE'S SUCCESSFUL COMPLETION OF THE ECD, AND THE OPTION TO ATTEND THE PROFESSIONAL INTERVIEW

The Mentee

Guidelines for Mentees
(Ref: IEM ECD Guidelines)

1. **It is the Mentee who choose the Mentor.**
   - ✓ *So Mentor must be of the same or related discipline and have relevant experience to give Mentee relevant guidance and advice.*

https://www.myiem.org.my/content/engineering_competency_development_ecd_-580.aspx

Guidelines for Mentees

1. Plan and arrange the appointment with the Mentor on a regular basis, <u>at least once in every THREE (3) months</u>.

2. Meeting schedule and the mode of meeting shall be mutually agreed upon by both parties.

3. Prepare proper logged reports and documentation to be verified by the Mentor during the scheduled meeting.

Guidelines for Mentees
(Ref: IEM ECD Guidelines)

4. Log-book must be sent to IEM **once a year** and **continuously** for minimum of **THREE (3) consecutive years** for verification by ECD Sub-Committee.

    Once verified & endorsed by IEM, the Log-Book will be returned to the Mentee.

5. The Mentor should preferably be the same person for the 3 consecutive years. IEM should be notified if there is a change of mentor.

Guidelines for Mentees

6. In the event that the Mentee wishes to discontinue with the ECD he/she needs to inform both the Mentor & IEM of his/her decision in writing.

7. The Mentee is allowed to backdate his working experience in the log-book for a maximum period of 1 year.

Guidelines for Mentees
(Ref: IEM ECD Guidelines)

8. To apply for Professional Interview with IEM, the Mentee must ensure that he/she has minimum THREE (3) years relevant work experience inclusive meeting minimum design and site experience related to his/her discipline.

9. Upon passing the Professional Interview with IEM, a Mentee has only a maximum of **ONE (1)** year to apply to the Board of Engineers (BEM) to be a Professional Engineer (PE).

Speaker 2:

Dato' Ir. Hj. Rozlan

PEPC, FIEM, DIMP, PPT
ECD Committee

The Mentor
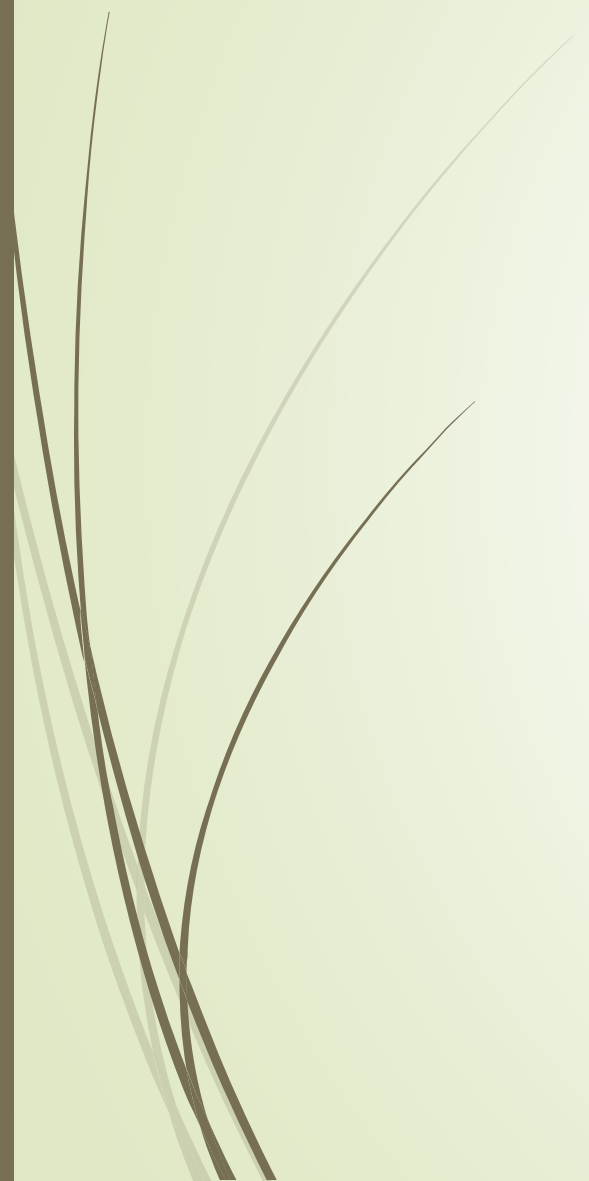
Criteria to be IEM ECD Mentor:

MIEM/SMIEM/FIEM with More Than 3 years PE Registration with BEM

- ☐ Must be a Corporate Member of IEM (MIEM, SMIEM or FIEM) AND;

- ☐ Must be a Professional Engineer (PE) registered with the Board of Engineers, Malaysia (BEM) for at least three (3) years AND;

- ☐ Must attend the IEM Mentors Engagement Talk/Workshop session AND PI Workshop at least once AND;

- ☐ Must be in the same or related discipline with the Mentee;

- ☐ Must not have more than 3 Mentees at any time.

General Responsibilities of a Mentor

1. Provide guidance to mentees.

2. Monitor progress of mentees.

3. Assist mentees in their training programmes.

4. Review documentation of mentees to ensure adequate quality.

![IEM - The Institution of Engineers, Malaysia]

Home | **Technical Division** | **Directory** | **Memb**

Engineering Competency Development (ECD)

Home / Membership / Engineering Competency Development (ECD)

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Roles & Responsibilities of Mentor
(Ref: IEM ECD Guidelines)

1. Meet with the Mentee, at least once in every THREE (3) months, to review and discuss issues relating to the Mentee's training for guidance and verification.

2. Log-Book is to be endorsed by the Mentor on a quarterly basis and the Mentor's PE stamp should be affixed, signed with date of endorsement. The Mentor should also provide his/her comments in Log-Book.

Roles & Responsibilities of Mentor
(Ref: IEM ECD Guidelines)

3. The Mentor should inform Mentee of his/her weakness from time to time and not wait until the last minute to inform that whatever Mentee has done so far is incorrect.

4. The Mentor needs to review and make advisory comments on the Mentee's training and experience and check for adequacy of the Log-Book report so that the Mentee can use it to prepare for the Professional Interview.

5. Advise Mentee on ECD's comments.

Roles & Responsibilities of Mentor

6. The Mentor should encourage his/her Mentee to obtain relevant experience based on his/her area of expertise for the purpose of Professional Interview.

7. Check that the minimum duration spent in activities for design, field and management experience is obtained during the ECD period meet the P.I, requirements. E.g.:

    - Design / Office – Civil: 12 months

    - Site / Field – Civil: 12 months

Roles & Responsibilities of Mentor
(Ref: IEM ECD Guidelines)

8. It is advisable for the Mentor to encourage and support the Mentee to sit for the Professional Interview after the completion of the ECD provided Mentee has gained competencies required and has the necessary design and site experience.

9. Advise the requirements and the process needed for the Mentee to become a Professional Engineer with BEM and a Corporate Member of IEM.

Reward for Mentors: **15 CPD Points** per Mentee per year

PRACTICAL TRAINING & EXPERIENCE RECORDS SUMMARY

Annual Summary of Competencies Obtained

Category	Element	Brief Evidences	Mentor's Comments	Date
A Engineering Knowledge Application	A1			
	A2			
	A3			
B Problem Solving	B1			
	B2			
	B3			
C Management	C1			
	C2			
	C3			
	C4			
D Interpersonal Skill	D1			
	D2			
	D3			
E Professional Ethics	E1			
	E2			
	E3			
	E4			
	E5			

Mentor recommendations

Year 1/2/3 Recommendation
Support for PI
Require more exposure
Date

Section B under **Annual Summary of Competencies Obtained:**

Check whether Mentee meets all 18 Competencies Elements and tick either:

- Support for PI or
- Require more exposure

Mentor's Role: At End of Year 3

IEM PI A401

THE INSTITUTION OF ENGINEERS, MALAYSIA

Training & Experience Report
Jan 2019

Training and Experience Report

Annexe : Design and Site Experience

Applicant is expected to have sufficient design and site experience typically expected of a competent engineer. The design and site experience is also the mandatory requirements for a person to register with the Board of Engineers, Malaysia as a Professional Engineer.

The length of design and site experience differs from one engineering branch / discipline to another. This applies to the sub-branches of each major engineering branch. The following table gives the summary.

Engineering Branch and Related Sub Branches	Design Experience (Month)	Site Experience (Month)
Civil Engineering	12	12
Mechanical Engineering	6	12
Electrical Engineering	12	6
Electronic Engineering	6	12
Chemical Engineering	6	6
Other Branches of Engineering	6	6
Academicians (Lecturing Candidate)	Cumulative of 12 months in design and/or site	

IEM PI A401

Check / discuss with Mentee whether he has fulfilled required length of design and site experience for his discipline

IEM PI A401

IEM PI A401
THE INSTITUTION OF ENGINEERS, MALAYSIA
Training & Experience Report
Jan 2019

Annexe A	Design Experience	
Date From / To	**Evidence of Design Experience** Transcribed from Competence Categories A and B	**Duration** (Month)
	Position : Nature of Job : Supervisor(P. Eng):	
	Position : Nature of Job : Supervisor(P. Eng):	
	Position : Nature of Job : Supervisor(P. Eng):	
	Cumulative Total (Month)	

IEM PI A401
THE INSTITUTION OF ENGINEERS, MALAYSIA
Training & Experience Report
Jan 2019

Annexe B	Site Experience	
Date From / To	**Evidence of Design Experience** Transcribed from Competence Categories A and B	**Duration** (Month)
	Position : Nature of Job : Supervisor(P. Eng):	
	Position : Nature of Job : Supervisor(P. Eng):	
	Position : Nature of Job : Supervisor(P. Eng):	
	Cumulative Total (Month)	

Reward of Mentors

❖ **Personal satisfaction** that you are responsible for the professional development of your Mentee.

❖ **15 CPD** points per Mentee per year.

❖ **Recognition Letter**

❖ **IEM's Next Top Mentor** - Annual

The Logbook

What Is In The Log-Book?

Section A – Particulars of Log-Book Scheme

Section B – Summary of Practical Training and Experience

Section C – Practical Training Record (3 Months Period)

Section D – Courses Attended (Advisable)

Section E – Professional Career Development Activities

Engineer's Log

Available ONLINE at IEM webpage

Engineering Competency Development (ECD)

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	E5			

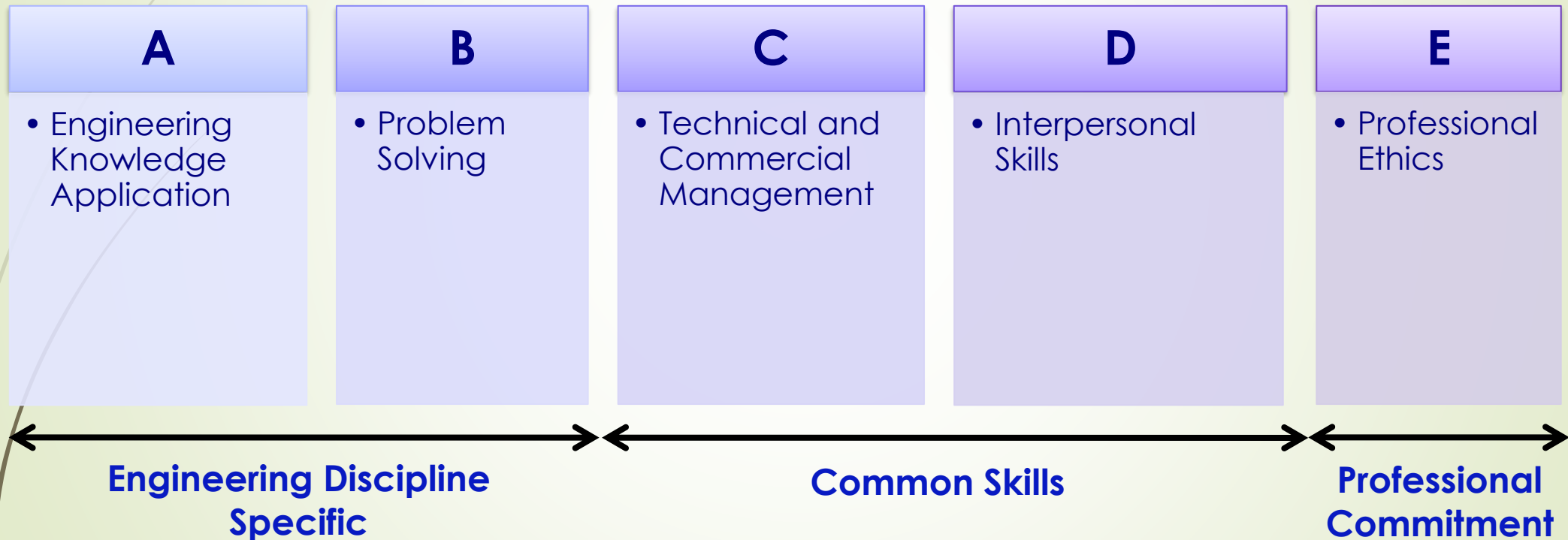**Mentor recommendations**

COMPETENCY CATEGORY A (Detailed)

A	Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology.
A1	Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology and other relevant developments.
A2	Engage in the creative and innovative development of engineering technology and continuous improvement systems.
A3	Apply engineering knowledge related to local practices, codes, standards, specifications, materials, products, environmental plans and other requirements; and where appropriate, apply engineering knowledge contributed by others including suppliers, consultants, contractors, manufacturers, technologists, researchers and independent experts.

Evidence of your competence in Category A	Element	Date Obtained

Sec B: Summary of Practical Training & Experience

# What are the 5 Competency Categories for the Professional Interview?

Interviewers will probe the five competency and commitment statements as follows:

A	B	C	D	E
• Engineering Knowledge Application	• Problem Solving	• Technical and Commercial Management	• Interpersonal Skills	• Professional Ethics

Engineering Discipline Specific   **Common Skills**   **Professional Commitment**
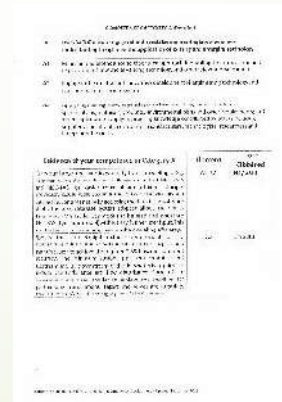
Refer to **IEM PI 0100** for more details.

Log-Book Details

1. The Log-Book submitted by the Mentee should include the following:

   ✓ Brief description of jobs or tasks performed by the Mentee.

   ✓ Sketches or simple diagram may be used.

   ✓ Detail investigations, studies and calculations could be submitted as attachments to the Log-Book.
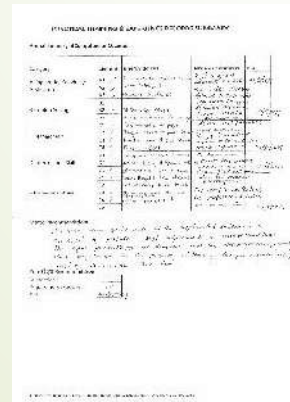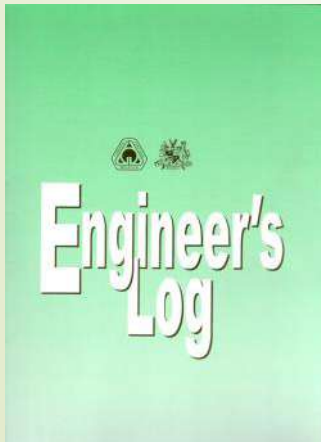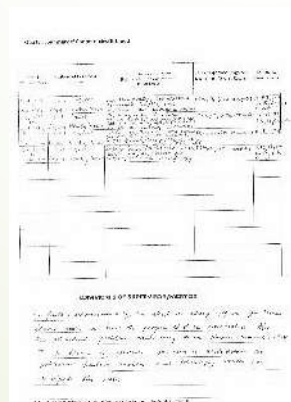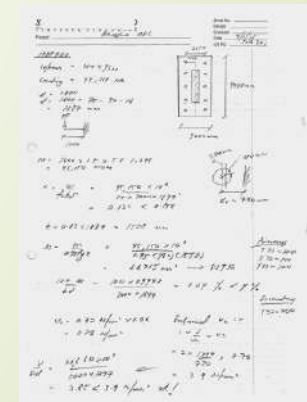

Annual   Quarterly   Detailed   Attachments

Log-Book Details

2. Record of activities should be in chronological order.

3. Seminars, talks or courses should be recorded in log-book and provided with a summary on the topics learned.

4. Information must be **relevant** and show:

   - the Mentee's involvement

   - problems encountered

   - solutions proposed &

   - lessons learnt.

Common Mistakes

1. Submission not complying with Professional Interview Guidelines.
    - ✓ All submission on site experience only, no design experience

2. Irrelevant engineering experiences such as
    - ✓ Mechanical graduate engineer submits civil engineering work experiences
    - ✓ Electronic / biomedical graduate engineer submit electrical engineering work experiences

3. Insufficient details – one page submission, picture report.

Common Mistakes

4. Sub-discipline work experiences such as

    ✓ Electrical graduate engineer who wish to sit for electrical engineering discipline submits sub-discipline work experience such as electronic, telecommunications or biomedical (Will be permitted to sit for the relevant sub-discipline only).

5. Irrelevant details – MOM, etc. Log-Book submission is not a record of construction progress but focused on experience and competencies gained.

6. Submission of confidential document/information without employer's endorsement.

Completing Logbook *DOES NOT* Guarantee Passing PI Interview

Log-book assessment purely based on submission and does not assess the candidate's competency on

- ✓ Oral communication skills
- ✓ Presentation skills
- ✓ Personal grasp & application of engineering fundamentals
- ✓ Maturity to understand his own limitations
- ✓ Adherence to professional code of ethics
- ✓ Capacity to accept professional responsibility
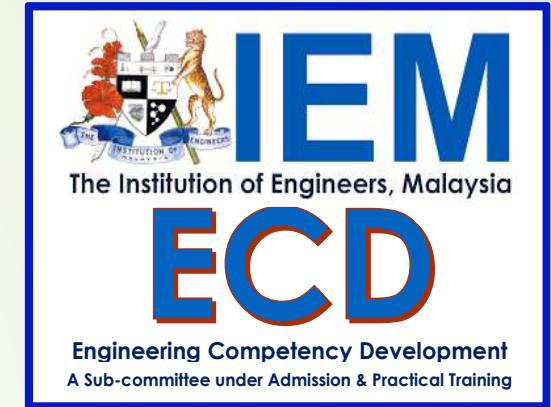
IEM ECD Virtual Workshops (Full Day)

- October 2022

Queries on IEM ECD:
IEM Secretariat
Cik Farezah Junaidi
Pn. Halimah Musa
Email: ecd@iem.org.my or
farezah@iem.org.my or
halimah@iem.org.my