

Formal Training Scheme to Associate Membership

Mechanical Engineering

Model Training Guide

1 Model Training Guide (MTG)

The Model Training Guide is, as the name suggests, a guide to Companies on the practical experiences considered relevant in the formal training of potential Technologists.

2 Training Programme (TP)

The Training Programme is the plan prepared by a Company which is designed to meet the experiences listed in the MTG. This 'plan' is presented for approval (to HKIE) as a part of the Assessment/Reassessment procedures.

The TP must cover the experiences necessary to ensure that Trainees can meet the objectives set out in the **Training Record-of-Objectives**.

3 Training Period - Nominally 2 years

The **length** of the **training** is based on **meeting the objectives** and **not** determined by **time**. The times shown below are therefore indicators only, the time that a normal trainee would take to meet the relevant objectives. The training period could and often be longer or in some cases shorter than the nominal training period!

4 Training Aim

It is important to note that the Training Scheme for Associate Members is designed to be the **fast track** by which a graduate can obtain the status of Associate Member of the HKIE.

5 Continuing Professional Development (CPD)

An **implicit part** of the Training Scheme for Associate Members is related to **CPD** which should be an integral and relevant part of the development of the trainee in meeting.

6. Training Stages

(I) Introduction to the Company and to Training Scheme for Associate Members.

(II) General.

(III) Mechanical Engineering Practice, Design and Projects.

(IV) Technical & Management Aspects.

(V) Consolidation Stage.

7. Training Programme Content

(I) Introduction (Suggest one week in total)

Information about the company:

- (a) size, history, subsidiaries if any,
- (b) products, markets and competitors,
- (c) management structure and functions,
- (d) communication systems,
- (e) locations and layout of the facilities,
- (f) safety, health and welfare.

Information about training programmes, prospects & career development:

- (a) specialist skills,
- (b) work of related disciplines,
- (c) management techniques,
- (d) sources of guidance,
- (e) company policies,
- (f) code of conduct

(II) General (Suggest one Week in total)

- (a) The HKIE Activities
- (b) Own Organisation
- (c) Conduct and Responsibilities
- (d) Occupational Safety and Health (S&H)
- (e) Environment
- (f) General Personal Development
- (g) Business Operations
- (h) Human Resources Management
- (i) Project Administration and Management
- (j) Development of Personal Qualities
- (k) Communication
- (l) Leadership and Management
- (m) Legal Aspect Knowledge

(III) Mechanical Engineering Practice, Design and Projects (14.5 months in total)

(The aim of the training is to develop the trainee with general knowledge in multi-disciplines and become competent in one particular discipline.)

- (a) Basic Engineering Practice : knowledge of use of hand/ power tools; safety on site; sheet metal work; welding; surface treatments and finishes, etc; anchoring and fixing of equipment and plant; cabling and piping fixing and jointing techniques; properties of metals and other building materials, etc. (2m min.) C
- (b) Design and drawing office practice which could include investigation or development of mechanical engineering components, plants, products, equipment, systems and engineering projects in accordance with requirements and specifications. (3m min.) C
- (c) Manufacturing OR construction and installation of mechanical engineering plant and associated equipment. (2m min.) C

- (d) Inspection, testing, commissioning and operation of mechanical engineering equipment; knowledge of installation and workmanship standards and skills in identification of sub-standard works; planning and implementation of maintenance programmes for reliability and maintainability; safety and environment considerations; supervision of mechanical engineering installations; emergency and major repairs; consideration of energy efficiency and energy conservation measures, etc. (1m min.) C

(IV) Technical & Management Aspects (5 months total)

- (a) Interpretation, preparation and communication of requirements and specifications and drawings. (1m min.) C
- (b) Knowledge on relevant statutory regulations and other organizations relating to mechanical disciplines. (0.5m min.) C
- (c) Tendering procedures, tenders appraisal and contract administration. D
- (d) Estimating manpower, materials, installations and transport costs and cost monitoring and control techniques, D
- (e) Project work scheduling (1m min.) C
- (f) Verbal and written communication skills (0.5m min.) C
- (g) Preparation of reports, operation and maintenance manuals, etc. (1m min.) C
- (h) Marketing, sales and contract negotiation techniques. D

(V) Consolidating Stage (4 months total)

This is training in any one or more of the activities outlined in (III) or (IV), which leads to an initial appointment as a technologist. It should also aim to develop skills and knowledge needed to make an effective start. Special courses dealing with the particular technologies having a bearing on future work may be necessary during training; computer applications should also be included, where appropriate.

- N.B.
- (a) This guide should be read in conjunction with Routes to Associate Membership (M4) Information booklet.
 - (b) To meet the requirements of the Institution's Approved Training Scheme for Associate Members, trainees must be under the supervision of an approved Engineering Supervisor and have followed an approved formal training scheme.
 - (c) During their training, each trainee is required to maintain a diary, a CPD Log Book, a Training Record of Objectives and a Training Log Book.
 - (d) Items marked 'C' are considered to be core training modules and those marked 'D' are considered to be desirable.