

**THE HONG KONG INSTITUTION OF ENGINEERS
ENGINEERING GRADUATE TRAINING SCHEME “A”**

MODEL TRAINING GUIDE

MECHANICAL ENGINEERING

Model Training Guide (MTG)

The Model Training Guide is a guide to Companies on the practical experiences considered relevant in the formal training of potential Professional Engineers.

Training Programme (TP)

The Training Programme is the plan prepared by a Company which is designed to meet the experiences listed in the MTG and to meet the objectives set out in the Record of Objectives. This ‘plan’ is presented for approval on Form TD1 Part 2 as a part of the Assessment/Reassessment procedures.

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 indicators only of the time that a trainee would normally take to meet the relevant objectives.

Training Aim

It is important to note that the Scheme “A” Graduate Training is designed to be a fast track by which a graduate can obtain full professional status. The training therefore covers both Technical and Professional matters.

Continuing Professional Development (CPD)

An implicit part of the Scheme “A” training is related to CPD which should be an integral and relevant part of the development of the graduate trainee.

Training Programme Content

(C=Core, D=Desirable)

1. Introduction (1 week)
 - 1.1 Information about the company
 - (a) Size, history, subsidiaries (if any)
 - (b) Products, markets and competitors
 - (c) Management structure and functions
 - (d) Communication systems
 - (e) Location and layout of facilities
 - (f) Health & Safety and the Environment
 - (g) Welfare
 - (h) Joint consultation arrangements (if any)

- 1.2 Information regarding training programmes, prospects, career development and CPD
 - (a) Specialist skills/employment potential
 - (b) Work of related disciplines
 - (c) Management techniques
 - (d) Sources of information/guidance
 - (e) Opportunities for Continuing Professional Development (CPD)

2. Mechanical Engineering Practice, Design and Projects (10 months)
 - 2.1 Workshop training to consist of basic engineering practice, knowledge and use of hand, power and machine tools, sheet metal work, welding, moulding, casting and heat treatment (to include an appreciation of the properties of engineering materials). (2 months C)
 - 2.2 Design to include research, investigation and/or development of engineering components, plant, products, equipment and engineering projects in accordance with requirements and specifications. (3 months C)
 - 2.3 Manufacture or construction or installation of plant to include all associated mechanical and electrical equipment. (2 months C)
 - 2.4 Inspection, instrumentation and control systems or testing or commissioning or operation of processing plant machinery and equipment, preparation of operation procedures, and industrial Health & Safety and Environmental considerations. (2 months C)
 - 2.5 Routine maintenance, preparation of maintenance schedules, routine, emergency and major repairs. (1 month D)

3. Engineering Administration and Management Techniques (8 months)
 - 3.1 Interpretation, preparation and communication of requirements. Specifications and drawings. (2 months C)
 - 3.2 Tendering procedures, tender appraisal and contract administration. (2 months D)
 - 3.3 Estimating labour, materials, installation and transportation costs. (1 month C)
 - 3.4 Project work, scheduling, management or management information services. (2 months C)
 - 3.5 Preparation of reports. (1 month C)

4. Objective Training (6 months)

This is training in any one or more of the activities outlined in 2 or 3, which leads to an initial appointment as an engineer. This should also aim to develop the 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. Where appropriate, computer applications must also be considered/ included.

N.B.

1. The minimum training period must not be less than 24 months.
2. The programme set out is for guidance only but substantial departure should not be made. Employers should endeavour to provide training to their trainees in as many areas as possible as is appropriate to the sector of employment.
3. This guide should be read in conjunction with Section 3 of the Membership Admission Requirements booklet.
4. During their training, each trainee is required to maintain a Graduate Training Log Book, CPD Logbook and Record of Objectives.