

CORE OBJECTIVES (CML)

1. Introduction, Safety, Health and Environmental	Code	ES Initials & Date of Assessment			
		G	K	E	C
1.1 Introduction of the Company, Training Program, Prospects and Career Development	C				
1.2 Safety Aspects of Process Plant Design and Operation <ul style="list-style-type: none"> - Industrial Safety/ Safety at Work - Legislation on health and safety - Hazard and Hazop studies in the design of a process plant - Dust extraction and control - Safe handling of chemicals - Classification of hazardous areas - Procedures for the automatic start-up/ shut down - Diagnosis of faults (e.g. studying alarm patterns) - Emergency procedures (e.g. evacuation, shut down and any major accidents.) 	C				
1.3 Aspects of the Safety Management System <ul style="list-style-type: none"> - The Company's safety policies - Health & Safety - Environmental regulations and standards - Safety Audit (e.g. whole plant or individual processing units) - Personal protective equipment - Analysis of accidents and incident reports - COSHH assessment - Storage and handling of flammable materials - Safety training 	C				
1.4 Aspects of environmental management/ protection <ul style="list-style-type: none"> - Air Pollution Control Ordinance 1983 - Waste Disposal Ordinance 1997 - Water Pollution Ordinance 1993 - Noise Control Ordinance 1997 - Environmental monitoring and investigation on plant and equipments - Environmental Management System - Loss Prevention study - Environmental Training - Environmental Impact Assessment 	C				

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2. Chemical Engineering Practice, Design and Projects	Code	ES Initials & Date of Assessment			
		G	K	E	C
2.1 Aspects of Design Practice for Process Plant <ul style="list-style-type: none"> - Sizes of pipelines and the selection of suitable materials - Design of new plant and equipment - Economic assessment of design - Preparation of process flowsheets - Preparation of Equipment Specification - Approval of Equipment Specification - Site selection for the process plant or factory selection for equipment manufacture - Heat & Mass Balance on continuous/batch process calculation - Usage of computer simulation - Evaluation of different operation conditions on plant performance - Familiarization of design codes 	C				
2.2 Drawing Office Practices for Process Plant Design <ul style="list-style-type: none"> - P&I Diagrams - Isometric Diagrams - Computer Aided Design (CAD) - Checking of drawings prior to issue 	C				
2.3 Aspects of Project Management <ul style="list-style-type: none"> - Cost estimates - Economic evaluation of installation of new equipment/ plant - Economic feasibility studies - Critical Path analysis - Implementation - Contract negotiations and tenders - Planning and budgeting - Preparation of reports 	C				
2.4 Aspects of Instrumentation, Control and Computer applications <ul style="list-style-type: none"> - PLC controller and DDC controller - Familiarization of wiring diagram - Feed forward and feed back control loop in pH adjustment - Instrumentation for plant control - Computer programming and application - Information System for Process Plant 	*C/E				
* As appropriate to the company					

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3. Operation Practice, Projects and Other Aspects of Engineering Practice	Code	ES Initials & Date of Assessment			
		G	K	E	C
3.1 Aspects of Process Operation Activities <ul style="list-style-type: none"> - Installation of equipment - Validation of process equipment - Inspection of process equipment - Process trouble shooting - Plant operation - Plant maintenance of the process plant/ overhaul - Process/ Plant modification - Process/ Plant economics and accountancy - Commissioning - Quality Control (QC) and Quality Assessment (QA) - Quality Management System - Sampling Procedures - Analytical Procedures - Test Methods - Code of Practices 	C				
3.2 Either Project Development or Technical Sales, Marketing and Contract Negotiation <ul style="list-style-type: none"> - Project or Process Development - R&D Project Planning - R&D Project Teamwork - R&D Product/ Process Design Or - Technical Sales - Sales Negotiations - Marketing/ Market Research - Customer Liaison 	C				
3.3 Aspects of Engineering Ethics <ul style="list-style-type: none"> - The Professional Engineer - Responsibility – Society, Company - The Role of ICAC 	C				
3.4 Other Relevant Training	*C/E				
<i>*As appropriate to the company</i>					

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4. Objective Training	Code	ES initials and Date of Assessment			
		G	K	E	C
4.1 Training in one or more of activities outlined in 1-3 above, which leads to an initial appointment	C				