

HRODC Postgraduate Training Institute



141.1

Advanced Engineering Drawing and Design Part 1

Course or Seminar

Leading To:

**DIPLOMA - POSTGRADUATE IN
Advanced Engineering Drawing and Design
Part 1 (Double Credit)**

Accumulating to

POSTGRADUATE DIPLOMA

Progressing To

A Masters Degree –

MBA – MSc – MA

P. 1

A Division of HRODC Ltd. UK Reg. No. 6088763. V.A.T. Reg. No. 8958 765 38


Prof. Dr. R. B. Crawford - Director HRODC Postgraduate Training Institute

PhD (London), MEd.M. (Bath), Adv. Dip. Ed. (Bristol), PGCIS (TVU), ITC (UWI), MAAM, MAOM, LESAN, MSCOS, MISGS, Visiting Prof. P.U.P.

Registered with the UK Register of Learning Providers (UKRLP), Department for Business, Innovation and Skills (BIS), formerly Department of Innovation, Universities and Skills (DIUS).



UKLP Registration No: 10019585
UKLP Verification: <http://www.ukrlp.co.uk>
Postgraduate Full-Time and Short Courses
London, UK & International Locations

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HRODC Postgraduate Training Institute - UKRLP Registration



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Its Registration Number is 10019585
and can be verified at <http://www.ukrlp.co.uk/>

Course Co-ordinator:

Prof. Dr. R. B. Crawford – Director HRODC Postgraduate Training Institute

- ✚ PhD (London),
- ✚ MEd. M. (Bath),
- ✚ Adv. Dip. Ed. (Bristol),
- ✚ PGCIS (TVU),
- ✚ ITC (UWI),
- ✚ MSCOS
- ✚ Member of the Asian Academy of Management - MAAM,
- ✚ Member of the International Society of Gesture Studies - MISGS
- ✚ Member of the Academy of Management - MAOM,
- ✚ LESAN,
- ✚ Visiting Professor Polytechnic University of the Philippines – PUP

For Whom This Course is Designed

This Course is Designed For:

- ✚ Civil Engineers
- ✚ Mechanical Engineers
- ✚ Electrical Engineers
- ✚ Design Engineers
- ✚ Computer Engineers
- ✚ Architects
- ✚ Engineering Professors
- ✚ Drafting Professionals
- ✚ Fine Arts Graduates

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Duration: 2 Weeks (10 Days)

Cost:

- ✓ **£8,000.00 + VAT (Government Tax) Per Delegate for UK Delivery**
- ✓ **£10,000.00 + VAT (Government Tax) Per Delegate for non-UK European Delivery**
- ✓ **£10,000.00 Per Delegate for Non-European Delivery (No VAT - Government Tax)**

Cost includes:

- ✓ Continuous refreshments,
- ✓ Hot Lunch,
- ✓ Stationery,
- ✓ Course Guide and Supplement,
- ✓ HRODC Postgraduate training Institute's Diploma – Postgraduate - or
- ✓ Certificate of Attendance and Participation

Course runs from 9:30 to 4:30 pm.

Location: Central London and International Locations

Schedule - Part 3:

[http://www.hrodc.com/Course Schedule Part 3 Oil Tanker Operations STCW Trade Promotion KSFs KPIs Public Sector Reforms HVAC HVAC and R Value Engineering Courses.htm](http://www.hrodc.com/Course%20Schedule%20Part%203%20Oil%20Tanker%20Operations%20STCW%20Trade%20Promotion%20KSFs%20KPIs%20Public%20Sector%20Reforms%20HVAC%20HVAC%20and%20R%20Value%20Engineering%20Courses.htm)

Click to book this course:

[http://www.hrodc.com/Course Booking Form London Dubai Kuala Lumpur Paris Johann esburg Cairo Jeddah Abu Dhabi Kuwait MBA MSc MA Course.htm](http://www.hrodc.com/Course%20Booking%20Form%20London%20Dubai%20Kuala%20Lumpur%20Paris%20Johann%20esburg%20Cairo%20Jeddah%20Abu%20Dhabi%20Kuwait%20MBA%20MSc%20MA%20Course.htm)

Course Programme for Advanced Engineering Drawing and Design Part 1

Leading to Diploma – Postgraduate in Advanced Engineering and Drawing Design Part 1 (Double Credit)

Introduction to Engineering Drawing and Design

- ❖ Drafting Technology
- ❖ Occupations in Architecture and Engineering Drafting Fields
- ❖ How to Become a Drafter
- ❖ Drafting Occupational Levels
- ❖ Computers in Design and Drafting
- ❖ Computer-aided Design and Drafting (CADD) Applications
- ❖ Copyrights
- ❖ Patents
- ❖ Trademarks

Sketching, Lettering and Lines

- ❖ The Engineering Design and Application
- ❖ Sketching
- ❖ Tools and Materials
- ❖ Sketching Straight Lines
- ❖ Sketching Circular Lines
- ❖ Sketching Arcs
- ❖ Sketching Ellipses
- ❖ Measurement Lines and Proportions
- ❖ Procedures in Sketching
- ❖ Creating Multiview Sketches
- ❖ Lettering
- ❖ Single-Stroke Gothic Lettering
- ❖ Other Lettering Styles
- ❖ CADD Applications: Lettering

- ❖ Lettering Legibility
- ❖ Vertical Freehand Lettering
- ❖ Lettering Techniques
- ❖ Composition
- ❖ Making Guidelines
- ❖ Other Lettering Aids and Guideline Methods
- ❖ Basic Lettering Considerations
- ❖ Lettering Guide Templates
- ❖ Mechanical Lettering Equipment
- ❖ Lines
- ❖ Types of Lines
- ❖ CADD Applications: Drawing Lines
- ❖ Pencil and Ink Line Techniques

Drafting Equipment, Media and Reproduction Methods

- ❖ Introduction
- ❖ Drafting Equipment
- ❖ Drafting Furniture
- ❖ Drafting Pencils, Leads and Sharpeners
- ❖ Technical Pens and Accessories
- ❖ Erasers and Accessories
- ❖ Drafting Instruments
- ❖ Drafting Machines
- ❖ Scales
- ❖ Cleaning Drafting Equipment
- ❖ Drafting Media
- ❖ Papers and Films
- ❖ Sheet Sizes, Title Blocks and Borders
- ❖ Taping Down Your Drawing
- ❖ Diazo Reproduction
- ❖ Safety Precautions for Diazo Printers

- ❖ Photocopy Reproduction
- ❖ How to Properly Fold Prints
- ❖ Microfilm
- ❖ CADD Applications: CADD vs. Microfilm
- ❖ Digitizing Existing Drawings
- ❖ CADD Applications: CAD/CAM
- ❖ Math Application: Angle Measurement in Radians
- ❖ Optical Scanning of Existing Drawings

Computer-Aided Design and Drafting (CADD)

- ❖ The Engineering Design Application: Project Planning Process
- ❖ What Is CADD?
- ❖ Industry and CADD
- ❖ The CADD Workstation
- ❖ The Future of CADD
- ❖ Virtual Reality
- ❖ Getting Started with CADD Project
- ❖ Scaling and Scale Factors
- ❖ Using Layers
- ❖ The Importance of Template Drawing
- ❖ Basic Drawing Functions
- ❖ Drawing with the Computer
- ❖ Creating and Using Symbols
- ❖ Storing a Drawing
- ❖ File Management
- ❖ Internet-Based CADD
- ❖ Research Techniques
- ❖ Ergonomics

The Engineering Design Process

- ❖ The Engineering Design Application

- ❖ Today's Engineering Design Models
- ❖ The Engineering Design Process
- ❖ Creativity and Innovation In Design
- ❖ Design Analysis and Problem Solving
- ❖ Charge and Impact on The Design Process
- ❖ Tracking Documents
- ❖ The Design Review Process
- ❖ Life Cycle of a Design Project
- ❖ Design Deliverables
- ❖ How the Design Process Has Responded to Changes in Engineering

Geometric Construction

- ❖ Geometric Construction
- ❖ The Engineering Design Application
- ❖ Characteristics of Lines
- ❖ Geometric Shapes
- ❖ CADD Applications: A Layout Approach to CADD Applications
- ❖ Common Geometric Constructions
- ❖ Constructing Polygons
- ❖ CADD Applications: Drawing Geometric S Shapes
- ❖ Constructing Circles and Tangencies
- ❖ Constructing an Ellipse
- ❖ CADD Applications

Multiviews

- ❖ The Engineering Design Application
- ❖ Multiviews
- ❖ View Selection
- ❖ Projection of Circles and Arcs
- ❖ CADD Applications: Fillets and Rounds
- ❖ Line Precedence

- ❖ Third Angle Projection
- ❖ First-Angle Projection
- ❖ Recommended Review
- ❖ Layout
- ❖ CADD Application
- ❖ Math Application: Weight of an Elliptical Plate

Auxiliary Views

- ❖ The Engineering Design Application
- ❖ Auxiliary Views
- ❖ Plotting Curves in Auxiliary Views
- ❖ Enlargements
- ❖ Secondary Auxiliary Views
- ❖ CADD Applications: Multiview and Auxiliary View Drawing
- ❖ Auxiliary View Layout
- ❖ Math Application: Projected Area

Descriptive Geometry I

- ❖ The Engineering Design Application
- ❖ Basic Concepts
- ❖ Projection of a Point (Basic Concept 1)
- ❖ Lines
- ❖ Projection of a Line (Basic Concept 2)
- ❖ Projection of a Line to Find Its True Length (Basic Concept 3)
- ❖ Projection of a True-Length Line to Find Where It Appears As a Point (Basic Concept 4)
- ❖ Planes
- ❖ Projection of a Plane

Descriptive Geometry II

- ❖ The Engineering Design Application

- ❖ Directions of Lines and Planes
- ❖ True Distance between a Point and a Line
- ❖ True Distance between Two Skew Lines
- ❖ Intersection of a Line and A Plane
- ❖ Visibility
- ❖ Intersection of Planes
- ❖ Dihedral Angles
- ❖ An Introduction to Vector Geometry
- ❖ Forces in Equilibrium

Manufacturing Materials and Processes

- ❖ The Engineering Design Application
- ❖ Introduction
- ❖ Manufacturing Materials
- ❖ Plastics
- ❖ Manufacturing Processes
- ❖ CADD Applications: Computer Numerical Control (CNC) Machine Tools
- ❖ Machine Processes
- ❖ Tool Design
- ❖ CADD Applications: Jig and Fixture Design
- ❖ Computer-Integrated Manufacturing (CIM)
- ❖ Integration of Computer-Aided Design and Computer-Aided Manufacturing (CAD/CAM)
- ❖ Statistical Process Control (SPC)

Dimensioning and Tolerancing

- ❖ The Engineering Design Application
- ❖ Dimensioning Systems
- ❖ Dimensioning Rules
- ❖ Dimensioning Fundamentals
- ❖ Preferred Dimensioning Practices
- ❖ CADD Applications: Dimensioning

- ❖ Notes For Size Features
- ❖ Location Dimensions
- ❖ Dimension Origin
- ❖ Dimensioning Auxiliary Views
- ❖ General Notes
- ❖ CADD Applications: Using Layers for Dimensioning
- ❖ Tolerancing
- ❖ Dimensions Applied to Platings And Coatings
- ❖ Maximum and Minimum Dimensions
- ❖ Casting Drawing and Design
- ❖ Machining Allowance
- ❖ Machined Surfaces
- ❖ CADD Applications: Dimensioning Software Packages
- ❖ Design and Drafting of Machined Features
- ❖ Symbols
- ❖ An Introduction to ISO 9000

Synopsis of Diploma – Postgraduate, Postgraduate Diploma and Postgraduate Degree Regulation

Postgraduate Diploma and Diploma – Postgraduate: Their Distinction and Assessment Requirement

Courses of 5 days duration (30 hour direct lecturer contact) but less than 3 months (360 hours direct lecturer contact), will, on successful assessment, lead to the Diploma – Postgraduate. This means a single credit at Postgraduate Level. While a 6-day and 7-day course also lead to a Diploma – Postgraduate, they accumulate 36 hours and 42 hours, respectively. Delegates and students who fail to gain the required level of pass, at Postgraduate Level will receive a Certificate of Attendance and Participation. The Certificate of Attendance and Participation will not count, for cumulative purpose, towards the Postgraduate Diploma.

Courses carry varying credit values; some being double credit, triple credit, quad credit and 5-credit, etc. These, therefore, accumulate to a Postgraduate Diploma. As is explained, later, in this document, a Postgraduate Diploma is awarded to students and delegates who have achieved the minimum of 360 hours direct tutor contact, within the required level of attainment.

Because of the intensive nature of our courses and programmes, assessment will largely be in-course, adopting differing formats. These assessment formats include, but not limited to, in-class tests, assignments, end of course examinations. Based on these assessments, successful candidates will receive the Diploma – Postgraduate, or Postgraduate Diploma, as appropriate.

In the case of Diploma – Postgraduate, a minimum of 70% overall pass is expected. In order to receive the Award of Postgraduate Diploma, candidate must have accumulated at least the required minimum ‘credit-hours’, with a pass (of 70% and above) in at least 70% of the courses taken.

Delegates and students who fail to achieve the requirement for Postgraduate Diploma, or Diploma - Postgraduate - will be given support for 2 re-submissions for each course. Those delegates who fail to achieve the assessment requirement for the Postgraduate Diploma or Diploma - Postgraduate - on

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2 resubmissions, or those who elect not to receive them, will be awarded the Certificate of Attendance and Participation.

Diploma – Postgraduate, Postgraduate Diploma and Postgraduate Degree Application Requirements

Applicants for Diploma – Postgraduate, Postgraduate Diploma and Postgraduate Degrees are required to submit the following documents:

- ✓ Completed Postgraduate Application Form, including a passport sized picture affixed to the form;
- ✓ A copy of Issue and Photo (bio data) page of the applicant's current valid passport or copy of his or her Photo-embedded National Identity Card;
- ✓ Copies of credentials mentioned in the application form.

Admission and Enrolment Procedure

- ✓ On receipt of all the above documents we will make an assessment of the applicants' suitability for the Programme for which they have applied;
- ✓ If they are accepted on their Programme of choice, they will be notified accordingly and sent Admission Letters and Invoices;
- ✓ One week after the receipt of an applicant's payment or official payment notification, the relevant Programme Tutor will contact him or her, by e-mail or telephone, welcoming him or her to HRODC Postgraduate Training Institute;
- ✓ Non-European Students will be sent immigration documentation, incorporating a Visa Support Letter. This letter will bear the applicant's photograph and passport details;
- ✓ Applicants will be notified of the dates, location and venue of enrolment and orientation;
- ✓ Non-UK students will be sent general information about 'student life' in the UK and Accommodation details.

Modes of Study for Postgraduate Diploma Courses

There are three delivery formats for Postgraduate Diploma Courses, as follows:

1. Intensive Full-time Mode (3 months);
2. Full-time Mode (6 month);
3. Video-Enhanced On-Line Mode.

Whichever study mode is selected, the aggregate of 360 hours direct lecturer contact must be achieved.

Cumulative Postgraduate Diploma Courses

All short courses can accumulate to the required number of hours, for the Postgraduate Diploma, over a six-year period from the first registration and applies to both general and specialist groupings. In this regard, it is important to note that short courses vary in length, the minimum being 5 days (Diploma – Postgraduate) – equivalent to 30 hours direct lecturer contact, representing one credit. Twelve 5-day short courses, representing twelve credits or the equivalent of 360 hours of lectures are, therefore, required for the Award of Postgraduate Diploma.

A six-day course (Diploma – Postgraduate) is, therefore, equivalent to 36 hours direct lecturer contact, representing one credit. Therefore, ten short courses, of this duration, equates to the required 360 hours of lectures, qualifying for the Award of Postgraduate Diploma. While double-credit courses last between ten and fourteen days, triple-credit courses range from fifteen to nineteen days. Similarly, quad-credit courses are from sixteen to nineteen days. On this basis, the definitive calculation on the Award requirement is based on the number of hours studied (aggregate credit-value), rather than merely the number of credits achieved. This approach is particularly useful when a student or delegate studies a mixture of courses of different credit-values.

For those delegates choosing the accumulative route, it is advisable that at least two credits be attempted per year. This will ensure that the required number of credit hours for the Postgraduate diploma is achieved within the six-year time frame.

Progression to Postgraduate Degree – MA, MBA, MSc

- ✓ On the successful completion of the *Postgraduate Diploma*, delegates may register for the Masters Degree, after their successful completion of Course #7: *Research Project: Design, Conduct & Report*.
- ✓ The Delegates' Degree Registration Category will be dictated by the courses or modules studied at Postgraduate Diploma Level. The categories relate to Master of Business Administration (MBA); Master of Arts (MA) Master of Science (MSc); Executive Master of Business Administration (Executive MBA). Additional details are provided below.

Terms and Conditions

HRODC Policy Terms and Conditions are Available for viewing at:

<http://www.hrodc.com/COSTS.htm>

Or Downloaded, at:

http://www.hrodc.com/Brochure_Download_Centre.Company_Brochures_Seminar_Brochures_Seminar_Schedule.htm

The submission of our application form or otherwise registration by of the submission of a course booking form or e-mail booking request is an attestation of the candidate's subscription to our Policy Terms and Conditions, which are legally binding.

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