

# CAD Training for Designers

## Essential Training to Develop Skills

The ECITB supports training for the commonly used CAD 3-D modelling software PDS (offered by Intergraph) and PDMS (offered by AVEVA Solutions Ltd). Three disciplines are available in each product; these are Structural Steelwork Design, Equipment Piping Design and Electrical and Instrumentation (Raceway).

They have been designed to extend and enhance expertise in the operation and use of 3-D modelling software.

## Purpose of the programme

### PDS

FrameWorks Plus – The programme will teach the Structural Designer how to generate associative physical models using the FrameWorks Plus software.

3D Equipment and Piping Design – The main capabilities of the PDS Equipment Modeling and Piping Design Task are addressed, including equipment modelling using three-dimensional “building blocks” and interactive piping layout, line routing and automatic component placement.

Raceway Operator – The programme is designed for individuals responsible for the engineering/design of electrical raceways and includes implementation information for the use of EE Raceway Modeling software in production and maintenance of electrical raceway designs.

### PDMS

Steelwork Design – The programme will develop the individual's core skills for using VANTAGE PDMS for Structural Steelwork design, including creating, manipulating, checking and reporting.

Equipment and Piping Design – The programme will develop the individual's core skills for using VANTAGE PDMS for Equipment and Piping Design, including creating and manipulating, checking and reporting piping routes.

Electrical and Instruments – The programme will develop the individual's core skills for using VANTAGE PDMS for design of trays, cabinets and cable routes, including creating, manipulating, checking and reporting.

## Who should follow the programme?

Grant support from the ECITB may only be available in respect of staff for whom levy is paid. A more specific breakdown of who should follow which programme is listed below.

Structural Steelwork Design (PDS FrameWorks Plus and PDMS Steelwork Design) is aimed at Structural Designers and Engineers.

3D Equipment and Piping Design is aimed at Piping Designers, Piping Engineers, System Programmers and System Managers who design and layout the piping of a plant.

Electrical and Instruments (PDS Raceway Operator) is aimed at designers responsible for electrical layout and modelling.



## The programme in detail

Each programme focuses on a number of key activities, outlined below.

### PDS

#### FrameWorks Plus

- ▶ Project creation
- ▶ Placement and manipulation of grids
- ▶ Selection, editing and creation of structural sections
- ▶ Placement and manipulation of linear, area and volumetric members
- ▶ Drawing and reporting extraction
- ▶ Drawing composition
- ▶ Associative dimensioning
- ▶ Interference envelope creation
- ▶ Design and User review data
- ▶ User defined section library
- ▶ Steel detailing neutral file

#### 3D Equipment and Piping Design

##### Equipment modelling:

- ▶ Building Equipment from 3D primitives and parametrics
- ▶ Equipment modification/manipulation
- ▶ Data review/revision
- ▶ Nozzle manipulation

#### Piping Design:

- ▶ Centreline routing and creation
- ▶ Pipe and component placement
- ▶ Model revision and reconstruction
- ▶ Speciality item and Pipe support placement
- ▶ Data review/revision

#### Raceway Operator

- ▶ Project review and creation
- ▶ Design file creation and set-up
- ▶ Sparse model generation
- ▶ Manual placement
- ▶ Element connection theory and practice
- ▶ Propagation of model to database
- ▶ Design and rule check reporting
- ▶ Clash detection envelope file creation
- ▶ Seed file defaults and conventions

Intergraph also provide similar courses based on **Smart Plant 3D**. If you have an interest in these courses please contact the ECITB.

### PDMS

#### Steelwork Design

This programme consists of the following product modules.

- ▶ Basics and functions
- ▶ Basic steelwork design
- ▶ Advanced steelwork design
- ▶ Structural integrity
- ▶ Reports
- ▶ Clash detection

#### Equipment and Piping

This programme consists of the following product modules.

- ▶ Basics and functions
- ▶ Equipment design
- ▶ Piping design
- ▶ Piping integrity checks
- ▶ Piping isometric production
- ▶ Reports
- ▶ Clash detection

#### Electrical and Instrumentation

This programme consists of the following product modules.

- ▶ Basics and functions
- ▶ Equipment design
- ▶ Cable tray design
- ▶ Basic drawing production
- ▶ Reports
- ▶ Clash detection



## The Benefits of CAD Training for Designers

### Organisation

Quality training delivered by the software vendor's engineers maximises the return on investment.

### Individual

Enables engineers to combine the appropriate software functionality with their engineering experience and knowledge, to create better and safer designs in ever decreasing design time frames.

## To find out more

- ▶ Visit the ECITB website at [www.ecitb.org.uk](http://www.ecitb.org.uk)
- ▶ Visit [ppm.intergraph.co.uk](http://ppm.intergraph.co.uk) and / or [www.aveva.com](http://www.aveva.com)
- ▶ Contact your ECITB Account Manager

For levy paying companies without abatement, the ECITB grant will equate to the cost of the course. Abatement rules will apply for those companies with abatement.

**In all cases, ECITB expenditure must be approved by the ECITB prior to the course or course place being confirmed.**



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