

## Description

This three day course provides a firm foundation in the terminology and concepts used in print & printing ink technology. Beginning from a prospective gained from a quantitative review of the markets for printed material; the course covers the various printing processes, in the context of the substrates and inks needed for distinct applications. This leads to considerations of the examples for generic formulations, their application, the raw materials used for their manufacture, and testing of the inks for printing and service life performance. The course closely reflects the changes that are taking place in the industry. Information is supplied on minority topics and 'Speciality Inks'. The course includes practical demonstrations.

## Who Should Attend

The course is suitable for technical, commercial and sales staff who works for ink manufacturers, printing companies or suppliers of raw materials to the graphic arts industries. It can be especially beneficial to newcomers to the industry, enabling them to gain a foothold of knowledge and familiarity with the terms and concepts. It is equally advantageous to those with experience in one area of the technology who wish to broaden their knowledge in other printing techniques or different parts of the material supply chain.

## Contents

### Print & Ink Markets

- Market areas & relative importance for each process
- Introduction to the printing process by their markets
- Market drivers and growth predictions for print & inks

### Printing Processes

- Printing processes (letterpress, litho, flexo, gravure, screen, jet & other non-contact and speciality)
- Print presses & characteristics of each process
- Identification of print for each process

### Substrates

- Relationships between the printing process the substrate and the ink
- Range of substrates and pre-treatment
- Post print treatment of substrates

### Colour Reproduction in Printing

- Overview of colour theory
- Colour measurement & colour matching
- Spot colours
- Process colour printing

### Raw Materials

- Pigments & dyes
- Ink Base mixing schemes
- Resins, solvents, monomers & oils
- Additives

### Ink Drying Processes

- Chemical & physical principles of ink drying
- Relationships for drying method
- Drying System
- Capillary action and penetration drying
- Cold –setting and heat drying inks
- Physical and chemical thermal ink drying
- UV & EB
- Microwave
- Convection

### Rheology & Dispersion

- Overview of theory for inks
- Apparatus for measuring ink viscosity and dispersion
- Fundamentals of pigment dispersion and wetting

### Manufacture & Storage

- Paste & liquid inks
- UV curable inks

### Ink Formulation

- Ink requirements
- Physical characteristics
- Viscosity & tack and other physical parameters

### Testing & Control

- Raw material testing
- Ink quality control
- Finished ink testing
- Dry print testing