



iPrint

Institute for Printing

The Inkjet Training

26th Feb - 2nd Mar 2018

11th - 15th Jun 2018

3rd - 7th Sept 2018

3rd - 7th Dec 2018

supported by

The Inkjet Conference

Inkjet Engineering & Inkjet Chemistry

 TheIJC.com



Haute école d'ingénierie et d'architecture Fribourg
Hochschule für Technik und Architektur Freiburg

Hes-so

Haute Ecole Spécialisée
de Suisse occidentale
Fachhochschule Westschweiz

A Hands-on Lab-based Course

in Inkjet Engineering and Inkjet Chemistry

WHO SHOULD ATTEND?

The course is open to everybody in inkjet that wishes to broaden their knowledge base:

You are an expert in one of the specific fields of inkjet and wish to better understand the other disciplines.

Whether you are involved in inkjet system integration or in inkjet system operation, this course is for you!

Even if you are new to inkjet, this course offers a quick start!

COURSE OBJECTIVES

Inkjet engineering is a multi-discipline technology requiring a broad knowledge base. The objective of this foundation course in inkjet engineering and chemistry is to take engineers and chemists skilled in their disciplines and broaden their knowledge base. The course is a hands-on practical course backing up the theory of the class room sessions. There is a focus on the terminology and vocabulary of inkjet enabling communication and discussion between the disciplines.

During the week, the participants will build from supplied components a small lab scale inkjet printer, they will develop a basic jettable fluid, measure the physical properties and introduce the concepts of material compatibility, pigment dispersions stability and waveform development.

ENTRY REQUIREMENT

Either qualification and experience in one of the following areas:

- Mechanics
- Electronics
- Chemical Engineering
- Chemistry
- Color Science

Or experience in development of printing systems or ink





PROGRAM

MON	13h30 – 14h00	Introduction Course organization, course overview, introduction to inkjet.
	14h00 – 17h00	Printer Mechatronics Terminology, basics on frame construction, axis, drives, sensors, dynamics, resolution, repeatability, quality issues. Introduction to the practical training in the lab. Lab work on material compatibility and printer mechatronics (in small groups guided by training coaches according to lab workbooks).
	17h15 – 18h30	Welcome Drink (optional).
TUE	09h00 – 12h30	Printheads Core technologies explained and reviewed, print head manufacturers overview, resolution, crosstalk, deviation, drop velocity, drop placement accuracy. Lab work on print heads.
	13h30 – 17h00	Inkjet Inks Terminology, basics on ink formulation, drying, curing, pinning, dispersions, suspensions, stability, compatibility. Introduction to drop watching. Lab work on drop watching.
WED	09h00 – 12h30	Inkjet Datapath - Electronics and Software Print head drivers, driving heads (wave form), data path, required bandwidth, component speed, efficiency of power supply. Lab work on printing strategies.
	13h30 – 17h00	Rheology Terminology in rheology, viscosity and rheology, shear thinning – shear thickening, newton and non-newton properties, demonstration gas. Lab work on ink characterization.
THU	09h00 – 12h30	Surface Science - Ink Substrate Interaction Characteristics of different substrates, ink-substrate interaction, effects of modifying surface energy on print quality, pre-treatment methods, dyne pens. Lab work on substrate pretreatment.
	13h30 – 17h00	Colorimetry File formats, RIP, color management, color space, the impact of restricted color space, CMYK and light colors, typical image artefacts, Workflow. Lab work on color management.
	17h15 – 18h00 19h30 – 22h30	Visit of iPrint (optional). Course Dinner (optional).
FRI	08h30 – 12h00	Inkjet System Design Fluid supply systems, degassing methods, filtering aspects, printing system integration, single pass vs. multi pass, system maintenance. Lab work on ink infiltration and degassing.
	12h00 – 12h30	Wrap-up Feedback, hand out certificate, closing of the course.

COURSE DETAILS



Course Language

English

Speakers and collaborators speak also French and/or German



Location

iPrint

Rte de l'Ancienne Papeterie 180
CH-1723 Marly



Accommodation

Acacia hotel (Marly):
~ 95-125 EUR/night
~ 14 min **by walk**

Grand-Pré hotel (Marly):
~ 80 EUR/night
~ 17 min **by walk**



Registration Deadline

6 weeks
before the course starts

- Limited number of participants
- Min. of 10 participants required



Participation Fee

EUR 2'600

Including lunch on TUE, WED and THU
and optional activities on MON and THU



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