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ICT-TEX

TRAINING MODULE

FINISHING, PRINTNIG and FUNCTIONALIZATION

Course: Finishing in the Function of Textile Printing

Partner: P4 – University of Zagreb Faculty of Textile Technology

Prof. Martinia Glogar, Ph.D.

The course is developed under Erasmus+ Program Key Action 2:
Cooperation for innovation and the exchange of good practices Knowledge Alliance

ICT IN TEXTILE AND CLOTHING HIGHER EDUCATION AND BUSINESS

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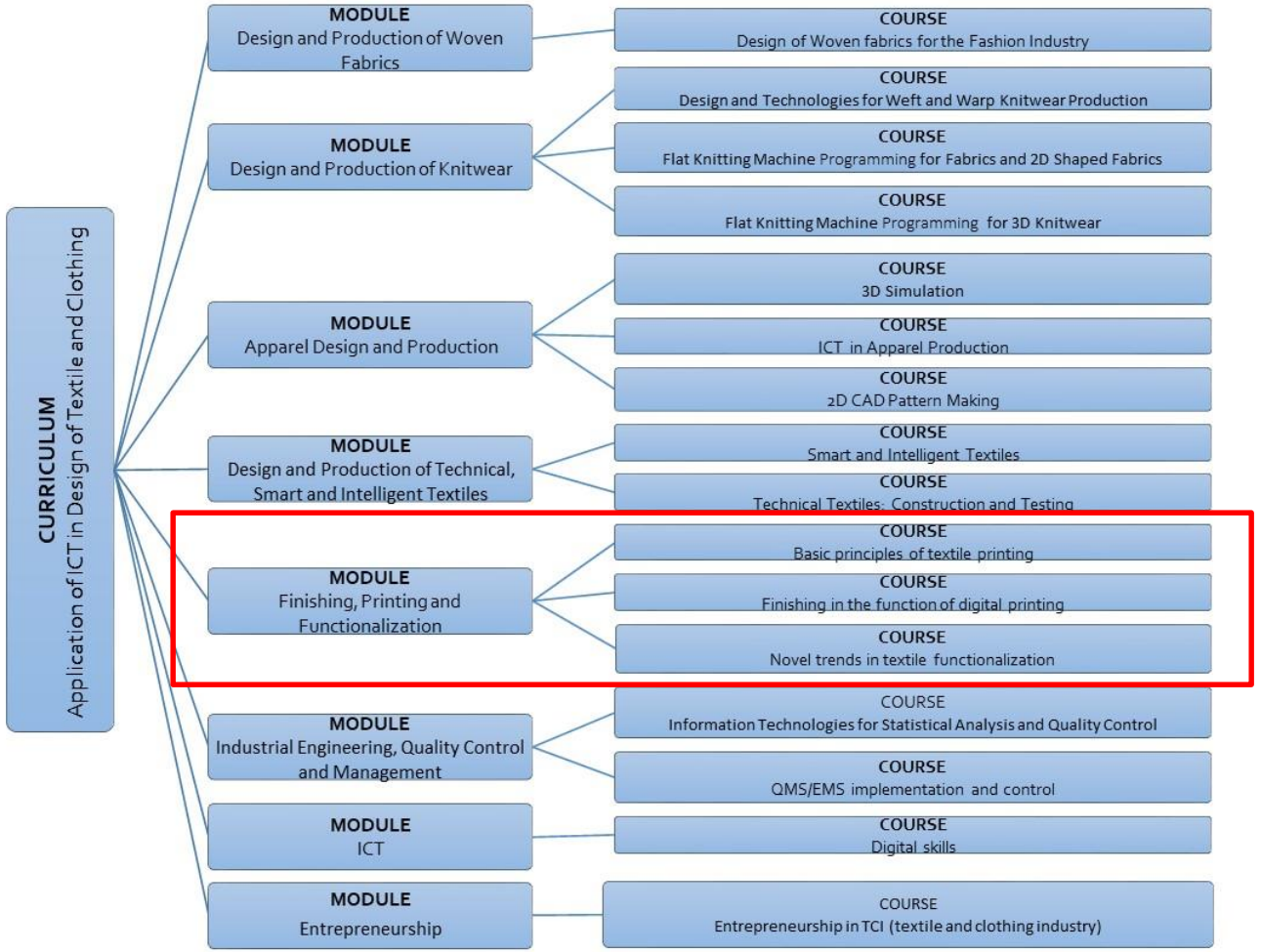

MODULE – FINISHING, PRINTING AND FUNCTIONALIZATION

Course: Finishing in the Function of Digital Printing

Duration: 30 hours

Course objectives

ICT is a fundamental carrier of the development of digital printing in general and the transition of digital technology from graphic to textile printing. Digital printing allow to respond to market demands extremely quickly, with immediate and unique design personalization, and significant savings in water and energy. The aim of the course is to acquaint participants with the methodology of using ICT tools in designing and final printing process, to explain the basic features of the development of digital textile printing with emphasis on modern research trends in this field explaining the different types of textile pre-treatment in digital printing, such as plasma pre-treatment, chitosan pre-treatment, cationization, etc.

Topics

- ICT as fundamental aspects of digital textile printing development
- Technical characteristics of digital textile printing
- Innovative approaches in digital printing pre-treatments processes
- Current trends in the development of digital textile printing technology
- innovative approaches in the formulation of printing inks and modifications

Learning outcomes

Knowledge	Skills	Responsibilities/autonomy
- To know the complex interaction of heterogeneous textile structure and printing ink: concepts of deformation, penetration, porosity - To understand the methods of pre-processing and post-processing of textiles as key stages in the application of the digital technology - To understand the difference between dye-based and pigment-based printing inks and the difference in the mechanism of their bonding to textile materials - To get acquainted with innovative methods of textiles pre-processing depending on the composition of the printing ink and the use of dyes or pigments	- To use the ICT tools in designing and printing process - To be able to handle a digital printing machine - To identify and predict the interaction of textile material and printing ink depending on the structure and raw material composition - To apply certain pre-treatment methods in dependence of textile material structure and composition - To analyse the results of given pre-treatments - To examine the difference in color and print quality with respect to the applied pre-treatment	- To manage a digital printing device independently - To take into consideration the environmental legislation related to the textile industry and the application of certain chemicals - To apply responsibly pretreatment methods always considering the method with the least environmental impact - To contribute to team work on setting the basic parameters of the printing process, pre-processing and post-processing of textiles

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MODUL: Finishing, Printing and Functionalization

Course: Finishing in the Function of Digital Printing

Course duration: 30 hours

DESCRIPTION OF THE COURSE:

- ✓ The course in **Finishing in the Function of Digital Printing** includes aspects of the transition of technology originally developed for the graphic industry to the field of textile printing. ICT itself is the foundation of the development of digital printing technology, which makes it an integral part of its application. However, due to the fact that digital technology has been developed for the graphic industry, which means printing on homogeneous surfaces, digital printing on textiles still faces many obstacles and unresolved issues that prevent its full commercialization.
- ✓ Through this course, the mechanisms of interaction of printing ink droplets with specific surface structure of textile materials will be explained from the aspects of the technology and science, but from the aspect of design and creativity as well.
- ✓ The basic directions of development will be presented, which include the development in the field of construction of the print head of a digital printing machine and the mechanism of droplet formation in Ink Jet technology, directions of development of the printing ink formulation and modifications and pre-treatments of textile materials.
- ✓ Emphasis will be on novel trends and innovative solutions of textile pre-treatment, as well as up to date analysis methods, in the context of textile functionalization to achieve optimal print quality results.

THE AIMS and OBJECTIVES OF THE COURSE:

- ✓ The aim of the course is to acquire the skills and knowledge of digital textile printing, aiming in mastering the abilities of using the ICT tools in digital textile printing processes from designing phase to realization phase of, from the design phase to the realization phase, not only of the finished patterned textile material, but also of the complete garment.
- ✓ In the course, applicants will be introduced to the most modern tools for testing certain properties crucial for the quality of digitally printed textiles, such as: SEM, MMT, FTT, DAS, spectrophotometry.

CONTACTS

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