



ERASMUS+ PROJECT TEXMODA – AN ADVANCED TEXTILE COURSE AT YOUR FINGERTIPS

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Abstract: *The aim of the project TEXMODA is to develop a massive open on-line course (MOOC) on Novel Technologies for the textile, apparel and fashion industries. The target audiences are students and recent graduates of higher education and post-secondary VET institutes that attend or have attended related study fields (clothing and textile industry, fashion) and employees of SME's working in textile and fashion industry. At the level of learning content, the TEXMODA aims to develop a European competence profile on Novel Technologies for textile and fashion industry and a training course based on this competence profile. The project brings together five Universities, two business associations and a consulting company from five EU countries, all of them with experience in different aspects of textile / clothing / fashion industry. The synthesis of the partnership combines academic expertise and institutional capacity to mainstream results, incorporating the new course into the Universities' curricula and the flexibility and effectiveness of the private non-for profit and profit sectors.*

In this paper, a special attention will be focused in the module digital fashion design which provides a holistic approach for those who wish to learn moore about all the steps involved in the development of a collection.

Key words: Erasmus+; Texmoda; MOOC; CAD, Digital Fashion Design;

1. INTRODUCTION

TEXMODA is a European funded initiative that develops a European competence profile on Advanced Technologies for Textile and Fashion Industry, a training course (Curriculum and Learning material) based on this competence profile and a train the trainer course.

The training is addressed to students and recent graduates of higher education and post-secondary VET institutes that attend or have attended related study fields (clothing and textile industry, fashion) and employees of SMEs working in textile and fashion industry.

Eight partners are cooperating in this project, each of them specialist in a different field: four universities, one training and consulting center, one higher education school specialized in Fibre Science and Technology, one Apparel and Textile association, and one Clothing Industry association.

This project involves the participation of 8 partners, as follows:

- KTU - Kaunas University of Technology, from Lithuania;
- UNIWA - University of Western Attica, from Greece
- IDEC - a consulting company, from Greece
- UBI - University of Beira Interior, from Portugal
- UPV - University Polytechnic of Valencia, from Spain
- ENSAIT - Ecole Nationale Supérieure Arts Industries Textiles, from France –

- LATIA - Lithuanian Apparel and Textile Industry Association, from Lithuania
- HCIA - Hellenic Clothing Industry Association, from Greece

The MOOC is constituted by video-lessons that cover all cutting-edge textile themes as seen in figure 1.



Fig. 1: MOOC modules

A brief description of each module is presented in table 1.

Table 1 - Constitutive modules of the MOOC

MODULE	DESCRIPTION
New textile structures and technologies	This module comprises a one-week course lecturing innovative and high performance fibres and yarns for the textile and fashion industry. Woven and knitted structures are also tackled.
Nanotechnology	The nanomaterials module is constituted by a one-week course addressing the importance of nowadays textile nanotechnology and their applications in all of their possible dimensions. Some case studies are also presented.
Electronic textiles	This two-weeks course starts with the basic definition within this field and includes a comprehensive review on all the major components of an electrotexile system. Some reliability and washability standards are also tackled.
Digital fashion design	This two-weeks course encompasses a detailed review on research and trend analysis for the development of a collection. A mini-collection



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	development is to be simulated through the aid of CADs.
Sustainability in design and production	This module comprehends a one-week course involving a thorough explanation of the major concepts in sustainability, environmental management systems and their legal framework. Some financial and social aspects are also addressed.
Logistics and distribution	This one-week course deals with the major concepts revolving around the logistics, supply chain, inventories and all the legal and regulatory aspects related to them. An in-depth analysis of the global nature of the logistic and innovative approaches in logistics and distribution is also provided.

2. DIGITAL FASHION DESIGN MODULE

This module provides a holistic approach of all the steps involved in the development of a collection. It is particularly focused on the support provided by the utmost advanced tools and technologies available for designer's in their respective working fields.

For this purpose, a two weeks course was designed, and six video lessons prepared. Each one of them is comprised by three units oriented for a specific goal and, in the overall, covering all the main issues of the textile design process.

As a mere example, a more detailed decription of the module digital fashion design is given in table 2.

Table 2: Syllabus of the module digital fashion design

UNIT	LESSON	SYLLABUS
Research and trend analysis in fashion design	Fashion design	This section entails the explanation of concepts such as design, design process and design methodology. Role and responsibilities of a fashion designer ¹ . Collections and their influences. Theme and directions for collections: primary and secondary sources. Definition and interpretation of a capsule collection. Examples of contemporary designers.
	Collection development	Creative development: Concepts and themes. Lifestyle and definition of the Ideal customer. Trends and trends forecasting. Materials, colours, shapes and textures research. Design development: fashion drawing and illustration. Presentation boards: mood board, concept board, colour board, flats board and illustration board. Manufacturing and Technical specifications. Details, trims and fashion accessories.



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	Market analysis	This video revolves around the operation of the fashion industry: fashion business and fashion globalization. Development mass-marketed collections: fast fashion and ready-to-wear. Luxury brands. Atelier and haute couture. Consumer profiling and customer identification. Costs: benchmarking and competitor's analysis. Brief notions of fashion marketing. Label and private label
Development of a capsule collection	Creative process-ideas	The development of a fashion collection involves more than creativity. Designers also need to stay on top of trends focusing on improving and expanding the communication of new product ideas' - that means building mood boards with images, fonts, colors, textures and all types of visual data to showcase the style of the project and the feeling that the designer is aiming for.
	Colors, Materials and Textures	Selection of colors, materials and textures is the most important step in developing cohesive collections ² . The final objective is to translate ideas into colors, fabrics and textures within the researched trends. The consumer's satisfaction and, ultimately, a desire to buy are also key-issues to be considered.
	Shapes and proportions	It's time for ideas to shape up. Here the fashion designer represents in paper and with digital fashion illustration a more correct approximation of final product,
Development and simulation of a mini-collection of fabrics	Fashion Design education and training	This section provides an overview of digital tools for textile and apparel product development. Marketed CAD solutions. Use of CAD systems in teaching environments. Description of different approaches to teaching computer-aided design to fashion and textile students. Pros and cons of each methodology. Assessment of the efficacy of teaching and learning with CAD.
	Context for weaved fabric design	Generic description of weaved fabric systems. Key factors in the use of CAD for woven textile design. Influence of the defining parameters: raw-materials, yarns and colors. Basic textile weave designs. The design process for textiles: Aesthetic and engineering design. Product development with CAD.
	Practical design applications	Based upon the developed capsule collection a few practical design applications with Kaledo Weave will be demonstrated.



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Development and simulation of a mini-collection of knits	Fashion Design education and training	This section goes on the key issues affecting the design and the designer when developing a knit collection. Computer technology from a designer perspective. Technological influences on the creative process of knitwear design. Sustainable knitwear.
	Context for knitted fabric design	A brief history of knitted textiles. Generic description of knitted fabric systems. Relevance of raw-materials, yarns and colors in the knitting design process. Knitting fundamentals and some basic stitches and structures. Comparative study between fabrics and knits. Potential of CAD systems in the knitwear design. The state of CAD systems technology for knitwear ⁴ .
	Practical design applications	Based upon the developed capsule collection a few practical design applications with Kaledo knit will be demonstrated.
Development and simulation of a mini-collection of prints	Fashion Design education and training	Main computer technologies in textile design: the computer as a designing, editing and presentation tool. Role of computer technology in the printing design.
	Context for knitted fabric design	Generic description of printed fabric systems. Importance of raw-materials, yarns, colors and motifs in the printing design process. Fundamentals of analog and digital printing.
	Practical design applications	This section expands on patterning development for analog and/or digital printing ⁵ . Processes of color research and shapes based upon the theme and concept of the collection, as well as the colors suggested by trend-setting platforms. Creation of a first draft of printing concepts for the capsule collection. Selection of the final idea and development of practical examples resorting to Kaledo Print. Testing and digital printing of the selected examples.
Fashion communication	Portfolio	Definition of portfolio. Portfolio production techniques. The importance of a portfolio in the designer's career. Presenting and diffusing the designer's work ⁶ .
	Fashion promotion	Fashion communication on the Internet. Fashion websites and fashion dissemination through social networks. Fashion videos production. Live fashion shows. Fashion communication in the media: editorials and advertising.
	Fashion show	Production of look books. Styling and styling shoot. Catwalk presentations. Fashion communication issues: models, music, hair, make-



		up, show producer, ticketing and promotion. Budget and scale in fashion promotion.
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3.CONCLUSIONS

The development of this MOOC has started with a multicentric inquire within both academic and industrial world. This inquire was carried out by the participants institutions and permitted the identification and targeting of the main concerns regarding innovative teaching and learning methodologies and, particularly, crucial areas of knowledge to be addressed.

The overall analysis of the conducted survey has shown that lifelong learning is of paramount importance for all the survey respondents. The most cited fields of knowledge by the industry respondents were protective textiles, sport and active leisure clothing, and fashionable smart clothing whereas academicians put the focus on transport textiles, and aerospace textiles and in sport and active leisure clothing.

Therefore, the implementation and use of open courses, oriented for the specific needs of the targeted audience, are powerful tools that can enhance the qualification of the personnel and contribute to improve the productivity and quality within their jobs.

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