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ICT-TEX

Study materials of ICT in textile and fashion industry

These materials are 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

Project Nr. 612248-EPP-1-2019-1-BG-EPPKA2-KA

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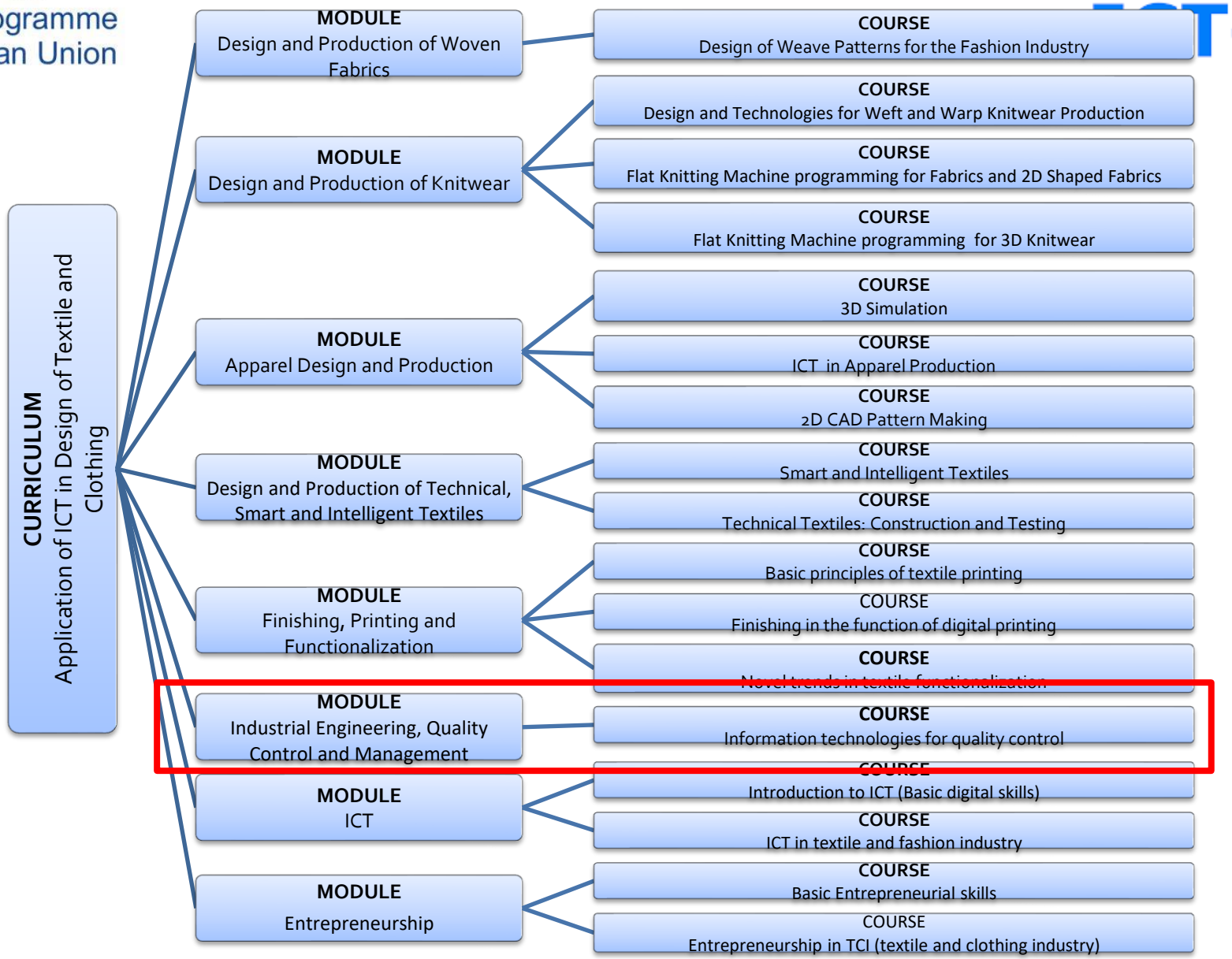
Rationale



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WP4 Gap analysis

- Part of the ICT-TEX project was to elaborate a questionnaire and to submit it to the textile and clothing European companies belonging to the project countries.
- This way it was expected to identify the business needs and requirements, the project consortium.

- Some analysis results will follow

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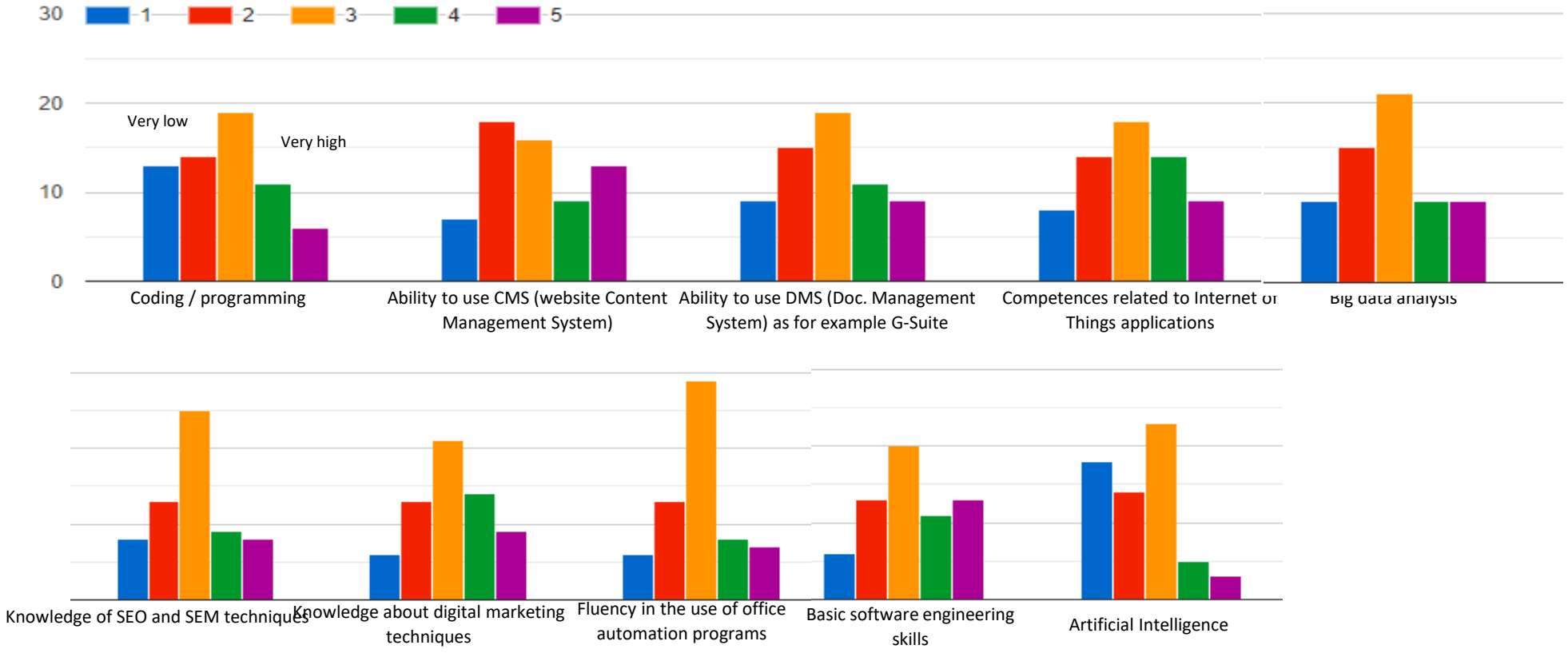
Importance of ICT skills in Textile Industry



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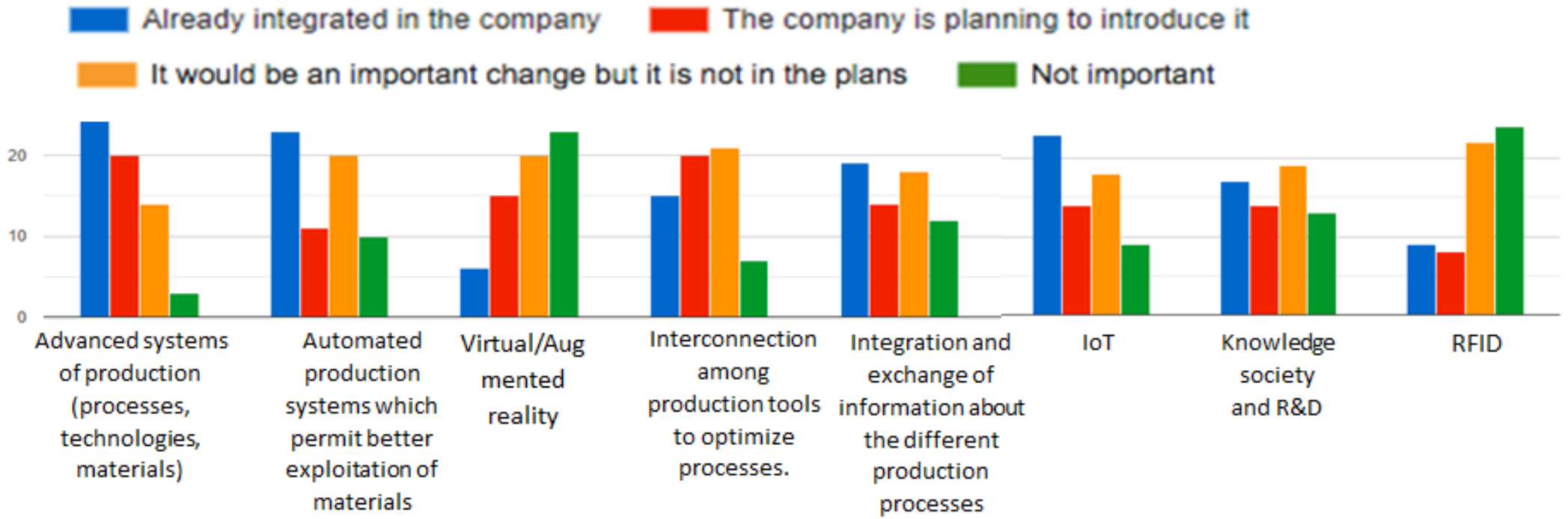
Current state of the art



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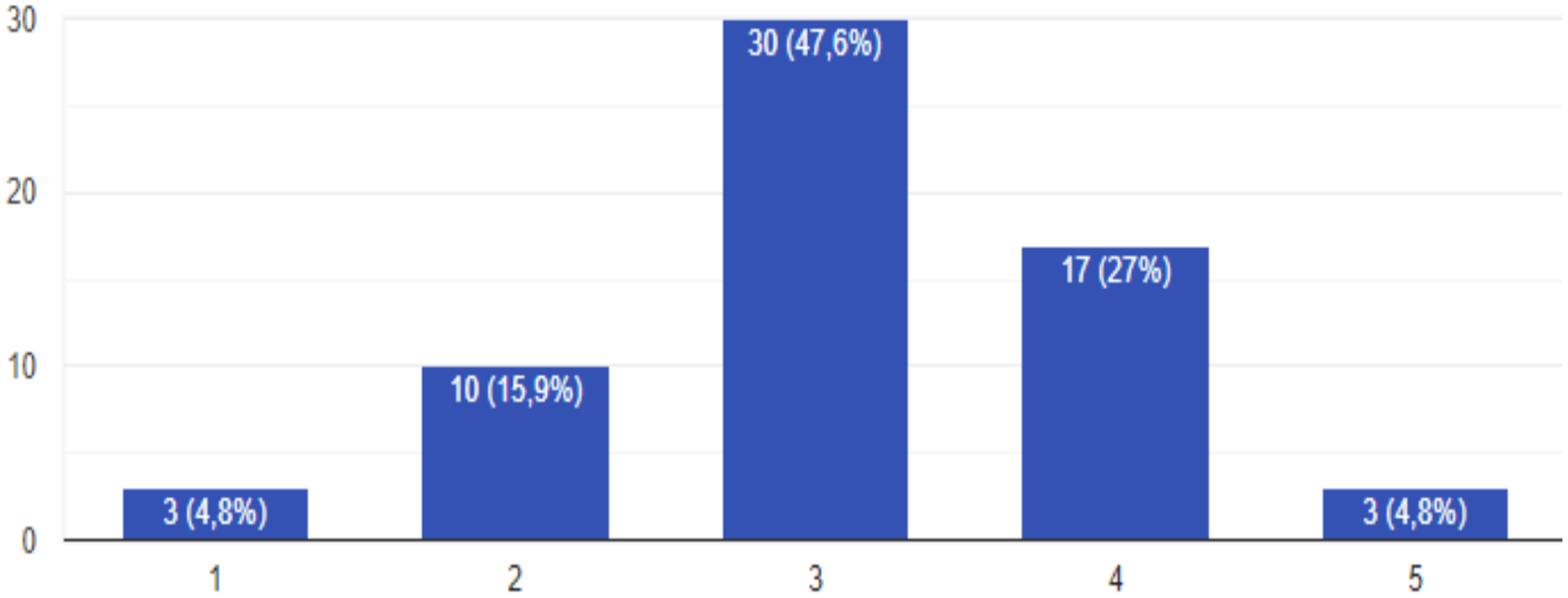
Integration of ICT in Textile industry



1 – low; 5 – high

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MODULE – ICT

ICT-TEX

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Course: ICT introduction – basic digital skills

Duration: 30 hours

Course objectives

Information and communication technologies are permeating our life, keep changing the way we work. Greater computer literacy have the advantage to facilitate and speed up also the simplest tasks with benefits in term of work productivity and effectiveness. The course main objective is to improve the digitalisation level of T&C business by providing learners with ICT knowledge and skills to be applied in the daily work management, marketing means exploitation and performance monitoring.

Topics

- Entrepreneurial self-assessment
- Create and maintain websites
- Tools for business digitalisation
- Digital marketing

Learning outcomes

Knowledge	Skills	Responsibilities/autonomy
- To understand the functionalities of the most spread operating and file systems - To gain basic knowledge of widely used office and document management software - To get acquainted with tools for work and collaboration management - To appraise the online presence and web performance of the business - To gain basic knowledge about websites creation and management tools (hosting, CMS, HTML, CSS, SEO) - To understand digital marketing rules and instruments	- To manage files, and implement basic settings - To format documents - To work with electronic spreadsheets including formulas and macros - To use online file sharing and collaborative tools - To realise effective and interactive presentations - To set up a website using Content management systems and basic knowledge of HTML and CSS - To evaluate the performance of your website and put in place corrective actions using search engine optimization (SEO) procedure	- To autonomously work with document management software - To set collaborative instruments able to facilitate the information and document sharing among the staff - To define your website main structure and keep it updated with new contents and functionalities - To develop a digital marketing campaign to increase your business visibility and obtain strategical advantages

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MODULE – ICT

ICT-TEX

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Course: ICT in textile and fashion industry

Duration: 30 hours

Course objectives

ICT as a general purpose technology can improve business practice, increasing the efficiency and competiveness of industries. Also manufacturing industries as TCI have been invested from this technological revolution. Nowadays most production processes can be automated, design proposals are generated and developed using CAD/CAM systems, the internal and external communication take mainly place via web, hardware can exchange information enhancing operational procedures. In this module we are going to introduce the learners to the programming language, software modelling, visualization and embedded systems having different application in the Textile and Clothing industries.

Topics

- Introduction in programming
- Software engineering
- Introduction to artificial intelligence and machine learning
- ICT in enterprise management
- CAD/CAM

Learning outcomes

Knowledge	Skills	Responsibilities/autonomy
- To be aware and understand programs and algorithms used in programming - To understand the different phases of software engineering: requirements, design, development, testing and maintenance - To get knowledge about the potentialities and different application of internet of things and embedded systems - To be aware of the functionalities and different applications of CAM / CAD systems in the T&C sector - To get acquainted with the ERP systems applications and potentialities	- To apply variables and identifiers in processes programming - To set up control mechanisms for the management of business operations - To use unified modelling language for software design implementation - To operate with programmable logic controller for the control of manufacturing process such as assembly lines and robotic devices - To run CAD/CAM software for TCI application as pattern scale, adjustment, design components - To set key performance indictors and benchmarks to measure processes and business performance	- To analyse the production processes and define effective automated control mechanisms - To design and manufacture prototypes using CAD / CAM systems for 2D and 3D modelling - To use business intelligent architectures to perform data analysis and take strategical and operational decisions

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ICT Syllabus (1)

- Introduction to ICT and computer literacy
- Basic ICT tools and skills
- Tools for business digitalization
- Computer graphics & visualization
- Development and maintenance of websites

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ICT Syllabus (1)

Your progress

Wellcome to "Information and Communication Technologies in Textile and Fashion Industry" course.

Course materials are divided into three subsections:

1. Materials for trainees (students)
2. Materials for trainees (staf)
3. Materials for trainers/researchers in Textile and Fashion Industry

Please read the following materials first and then complete the short questionnaire in order to be directed to the group of most suitable materials for you.

Course description (under development)

Topic 1: ICT Fundamentals (under development)

Self-assesment: ICT Fundamentals (under development) (copy)

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ICT Syllabus (1)

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Introduction to ICT and Fundamentals

- Introduction to the course
- Terms and definitions
- Operating systems
- File systems and files management

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Fundamental ICT tools and skills

- Documents formatting
- Electronic spreadsheets
- Formulas in electronic spreadsheets
- Working with presentations
- Working with Databases (MS Access)

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Tools for business digitalization

- Online file sharing tools
- Online meetings and calendar
- Electronic surveys

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Computer graphics & visualization

- Digital representation of graphics (vector vs raster)
- Resolution and Pixels
- Main digital graphic file formats

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Development and maintenance of websites

- Introduction (WWW, hosting, addressing in internet)
- Website builders, Site templates
- Content management systems (CMS)
- Basics of HTML and CSS
- Search engine optimization (SEO) basics

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ICT Syllabus (2)

- Introduction in programming (Python)
- Software engineering
- Introduction to AI and ML
- Internet of things and embedded systems
- Business analytics
- ICT in enterprise management

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ICT Syllabus (1)

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Introduction in programming

- Python language
- Programming fundamentals
- Python language
- Algorithms
- Basic operations. Input and output
- Main programming constructs and abstractions
- Advanced topics

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Software engineering

- Introduction
- Requirements engineering
- Unified modelling language – UML
- UML diagrams - use-case
- UML diagrams – process diagrams

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Introduction to AI an ML

- Essential methods and techniques
- Case studies (application in textile industry)

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Internet of things and embedded systems

- Introduction
- Architecture of embedded systems
- Cloud systems
- Internet of things
- Embedded development boards

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Business analytics

- Introduction: Analytics and Classification
- Business Analytics
- Big Data and Analytics
- Data Visualizations and Analytics
- Popular Analytics Software Tools

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ICT in enterprise management

- Enterprise Resource Planning
- Business Intelligence systems
- Digital Marketing

Interactive reading materials

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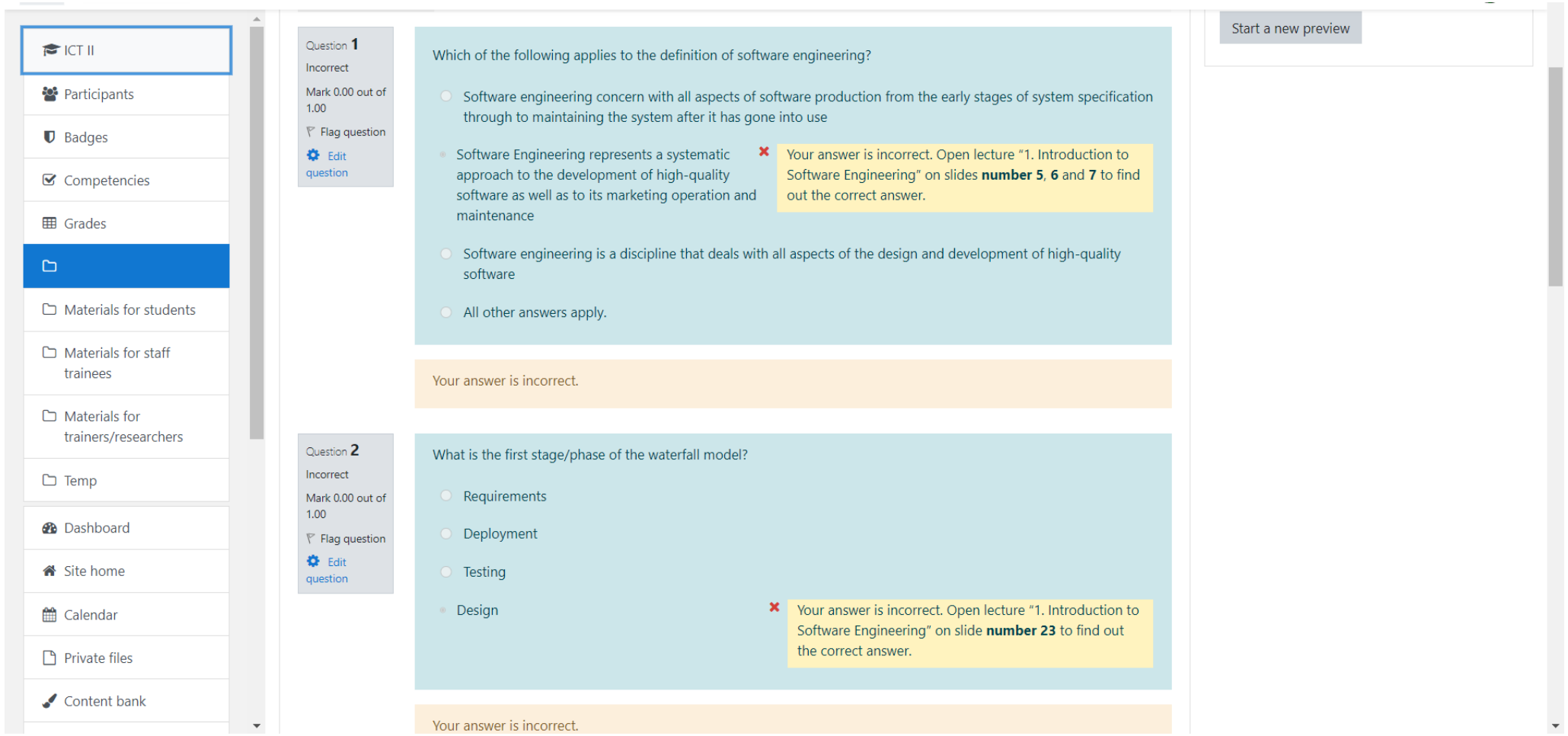
Interactive materials – self assement



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Discussion and Q&A

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