Study on Apprenticeship and ICT-Based Learning Practices in the Crafts Sector

Craftsmanship+ "Fostering a New and Competitive Approach to Crafts and Semi Industrial High Added-Value Sectors"

CRAFTSMANSHIP+

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INTRODUCTION

The CRAFTSMANSHIP+ project's main goal is to promote new and creative businesses in traditional crafts and semi-industrial business areas

The project proposes a new approach to teaching Crafts and Semi-Industrial activities with a specific focus on businesses; mainly by integrating production, entrepreneurship, and innovation as support contents for an ICT-based training course.

Craftsmanship+ Fostering A New And Competitive Approach To Crafts And Semi-Industrial High Added-Value Sectors is an European co-funded project whose goal is to promote new and creative businesses in traditional crafts and semi-industrial business areas anchored on high added-value production techniques. One of the main outcomes of the Craftmanship+ Project is to develop a Course on Innovation and Competitiveness in the Crafts and Semi-Industrial Activities, using a b-learning approach. The Course on Innovation and Competitiveness in the Crafts and Semi-Industrial Activities will be an innovative learning programme targeted at:

- Young adults looking to learn a craft/semi-industrial process and become entrepreneurs and
- "Makers" (generically the persons that develop a craft or a semi-industrial activity) wanting to update and take their businesses to a new level.

As a starting point the project consortia engaged in a preliminary investigation (Intellectual Output 1 – Activity 1) aimed at offering a comprehensive understanding about existing ICT-based learning practices, notably when applied to traditional apprenticeship learning systems.

The specific objectives associated to this first project output were:

-   Derive learning lessons from well succeeded experiences of ICT-based learning practices applied to crafts and semi-industrial.

-   Disseminate ICT practices to traditional apprenticeship learning systems.

Thus, this document presents a concise overview of the results of the research for the identification of well succeeded ICT-based learning practices in the crafts sector.

Chapter One

RESEARCH DESIGN AND METHODOLOGY OF THE STUDY

Study scope

The study covers all pedagogical knowledge and awareness of how ICT may be integrated into teaching and learning processes.

Crafts sector can be defined very widely while listing different kinds of activities such as Building (e.g. Bricklayer, Carpenter, Painter), Production (e.g. Tapestry, Textile manufacturer, Ceramist), Food (e.g. Baker, Butcher, Caterer) and Services (e.g. Hairdresser, Aesthetics, Florist).

This Study Report summarizes the information collected on well succeeded ICT-based learning practices

applied to traditional apprenticeship learning systems and present a set of conclusions and learning lessons and the Study Methodology gives consistency to the whole research approach for the Study on Apprenticeship and ICT-Based Learning Practices. It guarantees the quality and reliability of procedures followed by all the partners of the consortium.

The main aim is to offer a comprehensive understanding on the ICT-based learning practices applied to traditional apprenticeship learning systems through the identification of apprenticeship approaches in use; the identification of well succeeded experiences using ICT-based learning methods and through the identification of the structure of training offer for Crafts, combining traditional face-to-face learning with online independent learning modules and virtual classroom learning. In a more detailed way it aims to derive learning lessons from well succeeded experiences of ICT-based learning practices applied to crafts and semi-industrial; disseminate ICT practices to traditional apprenticeship learning systems. The methodology used was qualitative research using open available online sources.

Procedure of the identification of well succeeded ICT-based learning practices

This phase aimed the identification of well succeeded ICT-based learning Practices. For this purpose each partner of the consortium had to select two training centers/associations. In this selection partners had full freedom to contact these centers/associations in person or to do an exhaustive search of the offers through the information available online.

The ideal situation was to collect two cases per partner in two different activities and in two different trainings centers/crafts associations. However, collecting two cases in the crafts sector wasn´t so easy depending on the country. That is why four American examples were also chosen.

Desk research

Desk research addressed two main objectives: enlarge the research point of view and study scope; and study the field of possibilities such that the consortium gets inspired in its own approaches and cases.

The following methodology was followed: description of the general methods of ICT-based learning; overview of current practices worldwide, concerned with crafts and traditional backgrounds; Key ideas driven from the available resources to guide the consortium and users who pretend to apply for this kind of knowledge.

Cases Study Structure

- The Case Studies will provide practical learning lessons based on actual experiences of ICT-based learning practices used to replace and/or support learning processes that traditionally rely on an apprenticeship approach.

- The development of the Case Studies implied the identification of well succeeded ICT-based learning practices applied to traditional apprenticeship learning systems, totalizing twelve (two per partner); implied the analysis and the description of the ICT-based learning practices applied to traditional apprenticeship learning systems and deriving learning lessons from the well succeeded ICT-based learning practices applied to traditional apprenticeship learning systems.

Chapter Two

KEY ICT METHODS AND TOOLS FOR EFFECTIVE YOUTH APPRENTICESHIPS

Information and Communications Technology (ICT) Literacy

"is the ability to use digital technology, communication tools, and/or networks" (Rahimi and Pourshahbaz, 2008)

"the capability (knowledge, skills, and aptitude) of a person to identify, search effectively and present specific information in order to build knowledge and develop critical and creative thinking pertinent to a field of study" (Ololube and Ubogu, 2009).

In recent years, we have assisted to the rise of Creative Industries and many places in Europe have seen the rebirth of high added-value crafts and semi-industrial activities, led by young entrepreneurs or already established businesses and 'makers' inspired by 'new blood'. These movements have contributed, and we believe they have the potential to contribute even more, to the economic value creation, job creation (in particular youth employment) and in some cases to the urban, social and economic revitalization of degraded city areas. Despite the renewed interest in the crafts and semi-industrial activities, there is still much that can be done in Europe to foster businesses inspired by a new approach to these high added-value sectors.

The informal learning context can properly be considered as an innovation to complete a formal apprenticeship in a specific craft sector, to help students learning and manufacturing their own products, services and tools with the support of the online platform. It is well known that using ICT in education and training of citizens is a priority in the vast majority of European countries. However, there are differences on the way it is used in the different countries. Some countries have a high level of ICT usage and others are still at an early stage of utilization, failing to achieve great improvements in learning and teaching (Balanskat, Blamire and Kefala, 2006).

According to Martin (2005) the e-Learning initiative supports digital literacy and has focused primarily on empowering students and teachers. This approach has great benefits for education and it is in the tertiary education sector that the use of ICT is more widespread (Punie, Zinnbauer and Cabrera, 2006). Digital literacy is broader than ICT literacy and it can be defined as: "the ability to succeed in encounters with the electronic infrastructures and tools that make possible the world of the twenty-first" century" (Martin 2005:131).
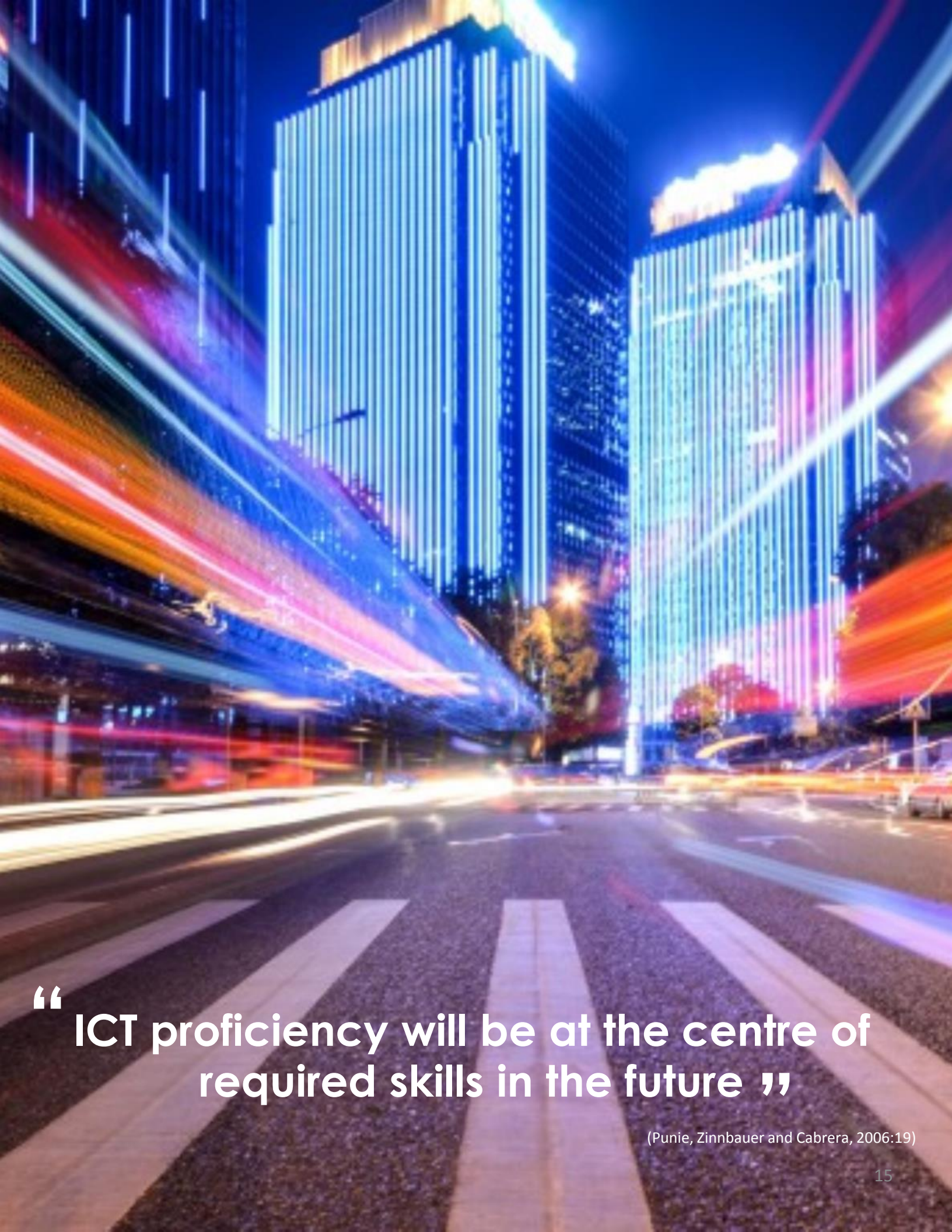
Definitions

ICT: "Information and communication technologies (ICTs) are advances in technologies that provide a rich global resource and collaborative environment for dissemination of ICT literacy materials, interactive discussions, research information, and international exchange of ideas, which are critical for advancing meaningful educational initiatives, training high skilled labor force, and understanding issues related to economic development.

ICTs highlight innovative efforts and partnerships and promote ICTs literacy, and facilitate interaction between all sectors of a national economy including external spheres" (Ololube and Ubogu, 2009).

E-Learning: "An educational activity or course conducted in an electronic learning milieu, using Internet communication technologies for delivery of instruction, curricular materials, and learning activities. In this study, e-learning refers to instructor-lead academic courses that may be offered partially or entirely online" (Salmons, 2008).

Open and Distance Education: "Distance education, also called open or distance learning is a form of education in which there is normally a separation between teachers and learners. Thus, it includes one which others may refer to as a means of the printed and written word, the telephone, computer conferencing or teleconferencing used to bridge the physical gap between the instructor and the learner. Distance education equally involves the provision of whatever educational opportunities that are needed by anyone, anywhere, at any time for those who otherwise would have been denied" (Ololube and Ubogu, 2009).

" **ICT proficiency will be at the centre of required skills in the future** "

(Punie, Zinnbauer and Cabrera, 2006:19)

ICT Methods and Tools
Brief Overview

Web-supplemented courses	"Focus on classroom-based teaching but include elements such as putting a course outline and lecture notes online, use of e-mail and links to online resources" (OECD, 2005:2).
Web-dependent courses	"Require students to use the Internet for key elements of the programme such as online discussions, assessment, or online project/collaborative work, but without significant reduction in classroom time" (OECD, 2005:2).
Mixed mode courses	"The e-learning element begins to replace classroom time. Online discussions, assessment, or project/collaborative work replace some face-to-face teaching and learning. But significant campus attendance remains part of the mix" (OECD, 2005:2).
Fully online courses	"Students can follow courses offered by a university in one city from another town, country or time zone" (OECD, 2005:2).

ICT tools are digital infrastructures that may be acceded through computers, laptops, desktops, data projector, software programs, printers scanners and Interactive teaching box (Adegbenro, Gumbo, and Olugbara, 2005).

The use of ICT in the learning context led to positive motivational outcomes, supporting a focus upon learning and the tackling of learning tasks (Passey, Rogers, Machell & McHugh, 2004:3).

According to Livingstone (2012), there are indications that the use of ICT, under some conditions, are associated with improved test scores measuring standard educational outcomes.

The literature on the use of ICT in education has identified motivational effects as a result with important benefits and some teachers recognize that their expectations about their students' performance are rising since the start of ICT tools usage (Passey, Rogers, Machell & McHugh, 2004).

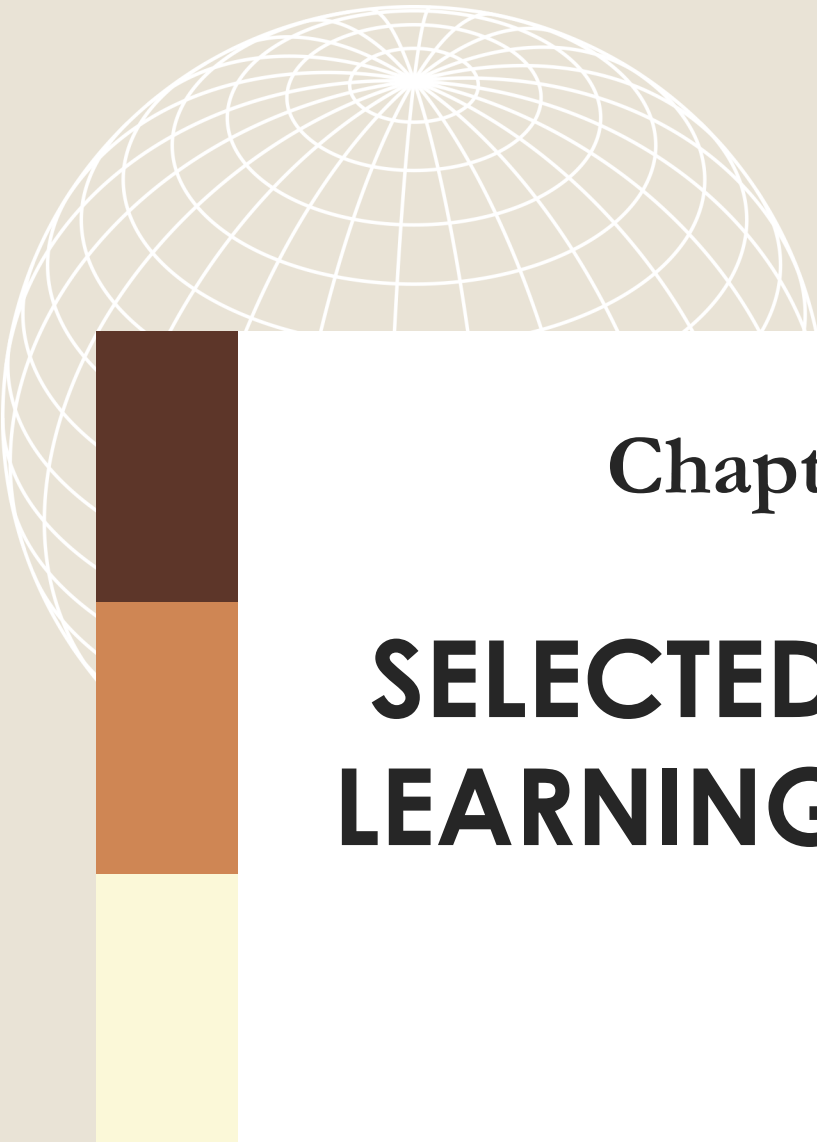ICT Methods and Tools
Regarding the Crafts Sector

Digital technologies and new media offer services and visibility to the traditional artisan class that create physical design and craftsmanship (for example prototyping platforms).

The biggest challenge consists of connecting famous experts / strong Masters craftsmen with digital natives, stimulating the dissemination of technical secrets through a virtual environment.

The main difference between general e-learning systems and applications dedicated to crafts sector is that beyond extending economic and educational skills, the learner also conducts self-realization activities.

Chapter Three

SELECTED ICT-BASED LEARNING PRACTICES

A total of 12 ICT-Based Learning Practices were selected by the project consortia, gathering a rich and diversified set of reference examples. In this section the selected practices are identified and briefly presented.

ICT-BASED LEARNING PRACTICE	LINKS	CRAFT SECTOR/SUBSECTOR/ ACTIVITY	COUNTRY
Gemmological Institute Of America	https://www.gia.edu/	Production	USA
Craft University	www.craftonlineuniversity.com	Production	USA
CraftArtEdu	http://craftartedu.com/	Production	USA
Craftsy	http://www.craftsy.com/	Production and Food	USA
ARSUTORIA School	http://www.arssutoria.com/	Production	Italy
Samsung Maestros Academy	www.maestrosacademy.samsung.it	Production and Food	Italy
The Burgos School of Arts and Design	http://www.escueladearteburgos.com/la-escuela/la-escuela/	Building and Production	Spain
AIDIMA – Technological Institute of Wood and Furniture	http://www.aidima.es/	Production and Services	Spain
AKTO College	https://aktocollege.com/who-we-are/	Production and Services	Greece
VET Centre of National & Kapodistrian University of Athens	http://en.uoa.gr/	Production and Services	Greece
My Salon-Edu.com	http://mysalon-edu.com/interfaces/login.php	Services	France
FUN: Higher Education Excellence. Online, Free and Open Courses (MOOC VITRA: Arts and Glass Techniques)	www.fun-mooc.fr	Production	France

EDUCATION

Whether you're starting a new career or taking the next step in your professional journey, a GIA education is considered the pinnacle of training and professional development in gems and jewelry. We teach using the latest research, technology, and time-tested skills, while instilling the importance of professional integrity in our students. A true mark of global distinction, a GIA credential is a symbol of knowledge and trust.

Description: Established in 1931, GIA is the world's foremost authority on diamonds, coloured stones, and pearls. A public benefit, non-profit institute, GIA is the leading source of knowledge, standards, and education in gems and jewellery. GIA is a Global organization, with 10 Campus, 9 laboratories, 4 research centres and 5 lab take-ins located in North America, Europe, Africa, Middle East and Asia. GIA is one of the best existing examples of a good practice in eLearning and distance learning, using a set of methodologies combining distance learning with in-class teaching and lab classes to the hands-on learning.

GIA courses and diploma programs are target at those taking the next step in a professional journey or starting a new career in Gemmology.

GIAs Education Programmes have two ways of learning: i) On Campus, GIA has facilities all over the world and the Learning Programmes can be attended in several locations, including Bangkok, Carlsbad, Hong Kong, London, Mumbai, New York or Taipei; ii) eLearning and Distance Education, most of the GIA Programmes are available in the Distance Learning format and most of them guarantee a professional credential to the participants.

GIA distance education is comprised of eLearning and Lab classes. eLearning is the online component of the programme - course materials, assignments, and final exams are online. Lab classes are where students gain essential hands-on experience by grading and identifying gemstones alongside an instructor. GIA's Distance Education programmes include:

- Media rich eLearning materials delivered online. The participants learn the same curriculum as the on-campus students;
- Online assignments and exams;
- Generous completion times, allowing students to progress at the pace that better fit their needs;
- Instructors are available by email or phone to provide support, guidance and expertise;
- Hands-on experience in lab classes offered at GIA campuses.

Organization: Craft University
Country: USA
Website: www.craftonlineuniversity.com
Craft sector/subsector/activity: Production

Description: Craft University is an online education program to learn crafting techniques, and learning skills including quilting, sewing, knitting, jewelry making, beading, spinning, weaving, crochet.

The content is developed by experts and offers courses for professionals seeking certification, manufacturers who want to keep up with the industry and streamline their processes. Topics cover from patchwork basics to advanced jewelry making to historical embroidery and certification course.

Each web seminar is a live event that lasts about an hour and includes a Q&A session toward the end where it is possible submit questions that the instructor will answer. If it isn't possible to attend the live event, a recording from the live session is uploaded within a week after the live event and the recording will remain available online for 30 days after the live event. The virtual environment provide virtual exchange, questions, course documentation.

Craft university programmes include:

Jewerly Computer – Aided Design (CAD) - The Jewelry CAD course is a complete course on jewelry CAD, from the basics to advanced modeling. The principles and techniques taught are transferable not only across jewelry CAD platforms, but throughout CAD in general.

The aim of this course is to provide confidence in one's abilities with CAD. This course is designed to take place over eight weeks. The training programme provides:

- Create CAD models within the metrics of scale, proportion, and element relationships;
- Develop CAD models within the constraints of cost, time, size, style, and manufacturing methods;
- Distinguish between various CAD software including 3D printing;
- Model and render manufacturable pieces of jewelry using CAD/CAM (Computer Aided Machining), and display them in a final CAD exhibition.

Bag: Tips & Techniques for Sewing Bags
This online course is for anyone who is interested in learning to sew high-style bags. It includes many of the essential elements that go into making bags of all kinds, to improve bag-making skills, improve sewing skills and get inspiration. It addresses materials and techniques for the most common details seen in high-end designer bags. It is structured as follow:
- An introduction to materials to use for bags and bag components;
- Techniques for installing zippers;
- How to sew several kinds of corners and shapes;
- Step-by-step instructions to sew a travel bag .

Quilting
The course aims to teach various techniques for quilting including quilt evaluation, loading techniques and muscle memory techniques to develop control and freehand skills.
It allows to discover some quilting variables such as thread, batting and fabric and develop pantograph skills, as well as free hand quilting skills and basic feather skills so you can custom-quilt a project.

Organization: CraftArtEdu
Country: USA
Website: http://craftartedu.com/
Craft sector/subsector/activity: Production

Description: CraftArtEdu is an online craft and fine art e-learning community that aims to make the creative world more accessible and convenient to everyone. In this community it is possible to find more than 450 classes and more than 20 categories. The classes are taught by 120 world-renowned art instructors. CraftArtEdu's class offerings includes craft and fine art courses designed for all experience levels (Beginner, Advanced beginner, Intermediate, Advanced). Novices can explore new media, while experienced artisans will be challenged by more advanced courses. The online class assures that each student can progress at a comfortable pace, in a supportive environment, with access to step-by-step instruction and personalized feedback (one-on-one support). Users can ask questions that are available on the Q&A board or choose to send a private message to the instructor.

In this online community, members can find some free courses that allow them to experience the methodology applied by CraftArtEdu instructors. Very experienced artisans can apply to become instructors. Classes may be taught in different languages.

As in the platform described previously, on the website of CraftArtEdu there is one area (http://craftartedu.com/materials) where it is possible to find more information about class materials and suppliers with the links to their websites and special discounts for members of the community.

The classes available online are not only related to the learning of crafts techniques but also cover other topics that may help the community members developing their entrepreneurial skills, supporting them starting a business or improving an existing business. Some examples of these kind of classes are "Taking Great Photos with Your Smartphone" or "Pricing and Selling Your Jewelry". CraftArtEdu is present in social media, notably through Facebook, Pinterest and Twitter. Only on Facebook, CraftArtEdu has more than 22 000 followers.

Organization: Craftsy

Country: USA

Website: http://www.craftsy.com/

Craft sector/subsector/activity: Production and Food
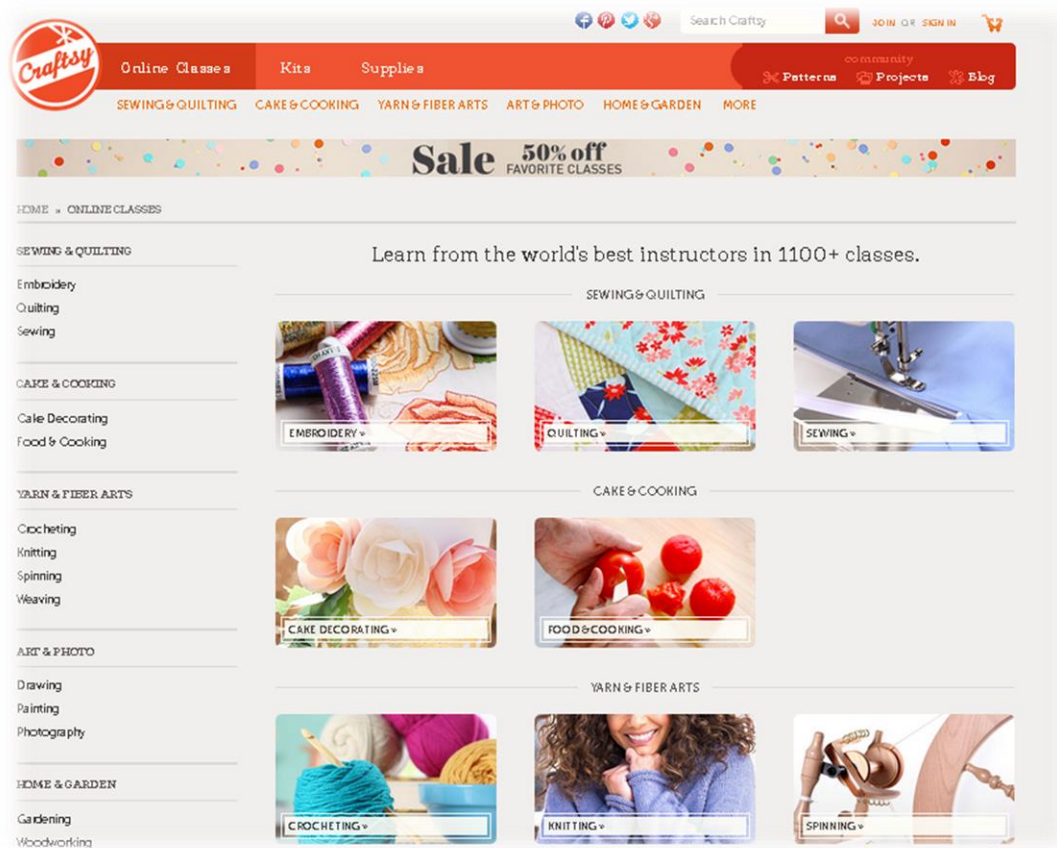
Description: Craftsy was founded in 2010 by four people with a tech background who wanted to create a new high-quality approach to online learning that captured the environment of a live classroom, including the interaction with the instructor and fellow students. In order to reach this goal, they created an online platform launched in 2011.

Craftsy provides the access to online classes in several crafts techniques. Its portfolio is organized in five main categories: 1) Sewing & Quilting; 2) Cake & Cooking; 3) Yarn & Fine Arts; 4) Art & Photo; 5) Home & Garden. There are also available online courses in jewelry and paper crafts.

In this online platform are available more than 1100 online classes, taught by world-renowned instructors. There are no scheduled class times, each person assist them on his/her own schedule and as many times as him/her would like. Each class is taught by an expert instructor and consist of several hour of high-definition video content. Additionally, learners may also:

-Ask questions to instructors, get personalized responses, and upload photos of their projects;

-Participate in discussions with their classmates;

-Access supporting class materials – including digital PDF patterns, recipes and templates;

-Bookmark their favorite moments in the video and easily re-watch them and take video notes that they can refer back anytime.

Users can also access to the transcripts of the videos.

In addition to online classes, Craftsy also offers other services to their clients through the platform, notably the possibility to buy kits with the materials needed to complete a specific project and a great offer of supplies that clients can purchase at competitive prices.

In the website, there is also a space dedicated to the Craftsy community which has three main areas. First, a space where indie pattern designers can sell their products and disseminate their work without having to pay any commission to Craftsy. Then, there is a space where learners can share the photos of their projects, the materials they used, what was the inspiration (online photo or website), and give some advice to someone wanting to start the same project. Up to now, it were published more than 260 000 projects on the website. Finally, it is possible to find in the community area the link to the Craftsy Blog where are posted the last news.

Craftsy has a strong presence in social media. Some of the channels they use to communicate with their clients and potential users of the platform are Facebook, Twitter, Pinterest, Youtube, Google + and Instagram. Craftsy Apps are also available for IOS and Android for free.

In 2012, Craftsy lauched Craftsy Cares (http://www.craftsy.com/blog/craftsy-cares/), whose goal is to partner with inspiring non-profit organizations and to provide purposeful, craft-related support that makes an impact for those in need. Craftsy Care helps to connect the members of the community with meaningful causes.

Crafsty is a good example of an apprenticeship and ICT-Based learning practice since it includes in the same platform a wide range of services with multiple benefits for users, whether they are learners, instructors or designers. The platform allows anyone to find what they need to learn and develop a craft technique, regardless where they are, gives them the opportunity to share their work with others and, perhaps, find an opportunity to make money or help social organizations.

The interface is very user-friendly and promotes the interaction between the classmates and the instructor.

Organization: ARSUTORIA School
Country: Italy
Website: http://www.arssutoria.com/
Craft sector/subsector/activity: Production

Description: ARSUTORIA is the world leading school for fashion training, focused on shoes and bags pattern making and design. ARSUTORIA teachers are specialized professionals designers and pattern makers, with years of experience in the field of footwear. ARSUTORIA method aims at allowing students to learn easily and quickly the best techniques to realize shoes and bags models and prototypes. ARSUTORIA institute includes also a dormitory for the students and a sample room. It is the only design school in the center of Milan able to realize shoe prototypes completely in-house.

Education Offer

Courses in Milan - Classes in Milan ARSUTORIA are the most important activity. The School keeps on training the best pattern makers and technical developers, and focusing on the technical development of shoes and bags which is a fundamental background for those that work in this field.

Shoe Courses

Footwear Pattern Making and Prototyping Course - The pattern engineer is the professional that translates the ideas of the designer into a product. His main responsibility is the engineering of the patterns for upper and lining.

The pattern making techniques are fundamental to the design process that leads to the creation of a footwear collection. The strength of Italian pattern engineers is one of the key ingredients for Italian reputation in the field of footwear. The industrial shoe making process is the focus of this course.

Footwear Collection Design Course - The students who decide to enroll in this course only normally have working experiences in another areas and are looking for a short course on introduction to footwear design. Some of these students are exploring the possibility of launching their own line of footwear and attend the course in order to understand the most important aspects of the process of a collection development. Other students come from the retail area, to gain a basic design expertise to better relate to their suppliers, partners and stakeholders.
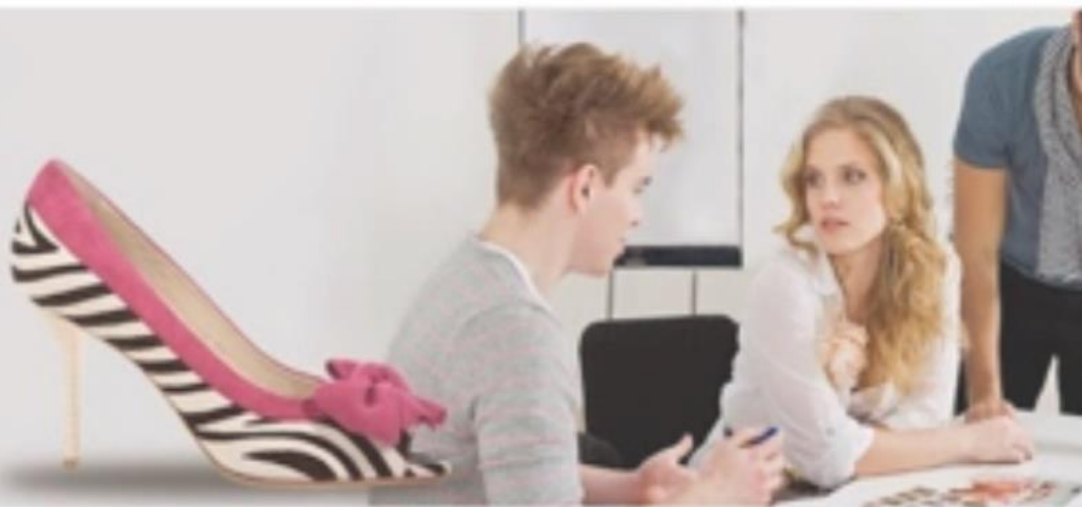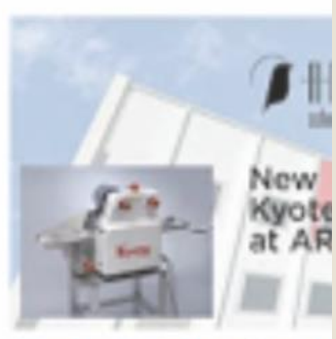
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Bag Courses

Bag Pattern Making and Prototyping Course - The most relevant part of this 8 weeks course is dedicated to bag pattern making, a topic which is indispensable for both designers and technicians. ARSUTORIA technical method is effectively used in handbag companies with extreme precision compared to the traditional trial and error approach.

Bag Collection Design and Development Course - The main objective of the Bag Collection Design is to immerse participants in the process of creative development of a collection of bags. The course is targeted at students graduated in fashion schools, professionals already working in the area (both in bag brands or retailers) and students with different backgrounds who intend to explore a career in the bag industry.

ARSUTORIA Distance Education

E-Learning Overview - ARSUTORIA Distance Learning programmes can be grouped in two categories:

A. Blended Learning Courses: Classroom courses combining classroom learning, practical "hands-on" training and multimedia and online contents.

B. Short "stand-alone" courses: Short courses developed to be distributed exclusively online at ARSUTORIA e-Learning platform.

ARSUTORIA Distance Learning Channels

ARSUTORIA has multiple distance learning channels, both online and offline, including the e-Learning platform, Vimeo and Youtube channels, an iPad app and a publishing house.

Organization: Samsung Maestros Academy
Country: Italy
Website: www.maestrosacademy.samsung.it
Craft sector/subsector/activity: Production and Food
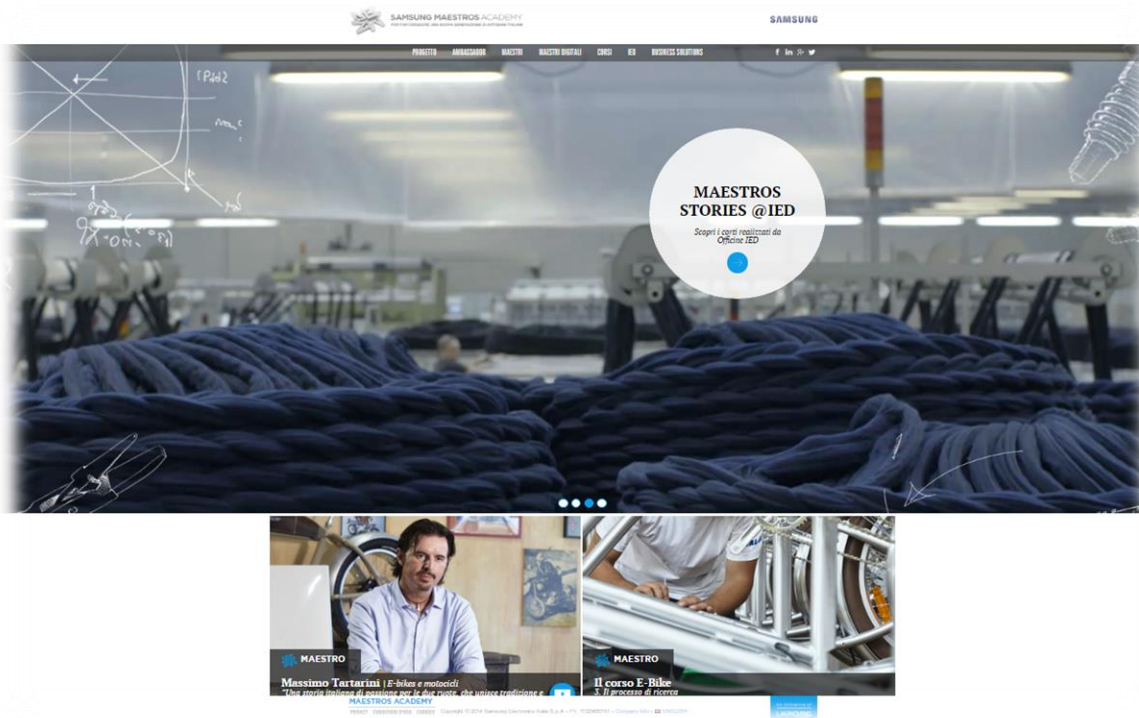
Description: An interesting experiment regarding the ICT learning practice is represented by Maestros Academy, an online platform to learn how to create startup or a company, starting from the experience of some master craftsmen, who provide their secrets and their past experiences to rediscover the most important traditional crafts of "Made in Italy".

The Academy has decided to tell the story of craftspeople who learned their skills from their fathers and who, thanks to innovation, have managed to expand their enterprises.

In Maestros Academy, users can follow a training course relying directly to the experience of the masters of the tradition.

The project intends to connect the digital natives and master craftsmen. Two worlds apparently in contrast put in communication in a virtual environment.

The idea born from the collaboration of the European Institute of Design. Samsung Maestros Academy aims to build bridges between these youngsters and the "traditions" that have gained for Italy – and for the made-in-Italy 'moniker' – such renown worldwide.

The platform it accessible from every consumer's electronic device, such as smartphone, tablets, laptops and Smart TV. The engagement platform consist in more than 40-video lessons full of ancient secrets, materials and live interactive lessons.

With the registration it is possible to access the live chat with the chosen master, interacting directly with questions and interventions as a virtual register, earn the right, at the end of the lessons, to an attestation. At the end they will also present their project and finally, if there is the right mix of innovation and tradition, to see it realized.

At the moment the learning platform www.maestrosacademy.samsung.it propose the following courses:

Trophies and medals course; The artisan pens course; Classic method sparkling wines course; Watchmaking course; Ceramic art course; Snowboard shaper's course; Digital blacksmith's course; Art restoration course; Innovative goldsmith's course; Tailored eyewear course; Wigmaker course; Maestro in leather course; Shirtmaking course; Egg pasta specialist course; Frame builder's course.

Organization: The Burgos School of Arts and Design
Country: Spain
Website: http://www.escueladearteburgos.com/la-escuela/la-escuela/
Craft sector/subsector/activity: Building and Production

Description: The Art School of Burgos was created four decades ago as a public center depending on the Castilla and Leon Regional Government to offer formal learning in the area of Art and Design Education. The School integrates four different study levels: Bachelor of Arts, Vocational Training Cycles of Plastic Arts and Design and Higher Artistic Education of Design with the Fashion specialty (Degree Level of Design). The main goals of the School address:
- Promotion of the arts;
- Promoting collective of artists and artisans;
- Bringing fine arts and art to the public through the urban space;
- Promote downtown Burgos expression, innovation and artistic creation – cultural;
- Provide support and guidance to primary and secondary students through various activities and events;
- Facilitate entry into the world of work by artists of different actions;
- Development of agreements with different entities, organizations, companies, administrations;
- Ensure compliance with laws and regulations that promote the arts;
- Communication and promotion;
- Collaboration with local authorities;
- Make contact with schools or entities associated with the design.
The School counts with the Certification ICT level 5 (maximum level) granted by the Regional Government to those education and training organizations who have full integration of the new ICT in the curriculum and educative model. This formal recognition has a measurable positive impact in the School and implies the development of educational innovation projects, training of teachers and artisans in the ICT field and planning of equipment and infrastructure investments in technologies.
The School is one of the few centers in Spain where all the offered courses/learning resources in Art and Design Education have been virtualized. The School has fostered and implemented its own e-learning system by using the learning platform of open source moodle.

The Virtual Classroom gives access to all the courses by categories as well as other resources such as students' space, learning resources, calendar, news, etc).

The School also develops learning projects in 5 different areas: Fashion Design, Leather Accessories Craftwork, Clothing Model-Making, Applied Arts to Wood and Artistic Cabinet-Making. A description of the main objectives of each project are presented in the website together with documentation through texts, photos and videos of the principal working processes providing good online learning materials and resources for young artisans (access at: http://www.escueladearteburgos.com/proyectos/).

The School has also an important activity in Social Networks counting with its own private community to foster collaborations between professors, alumni and students, cloud and wiki (access at: red.easdburgos.es).

Good learning materials, including photos and videos, can be found in the two blogs launched by EASD about leather accessories and history of arts. These blogs offers also links to different Workshops and artisans to foster collaborations with students and professors.

Finally, the School participates in different transnational technological projects promoted by the last Lifelong Learning Programme and the current Erasmus +, such as the E-CLIC project (Challence, Learning, Innovation, Cooperation) that aims, between other objectives, to foster the recovery of degraded urban landscapes. Students of the School compete to achieve this end through crafts projects that incorporate the use of ICT tools.

Organization: AIDIMA – Technological Institute of Wood and Furniture
Country: Spain
Website: http://www.aidima.es/
Craft sector/subsector/activity: Production and Services
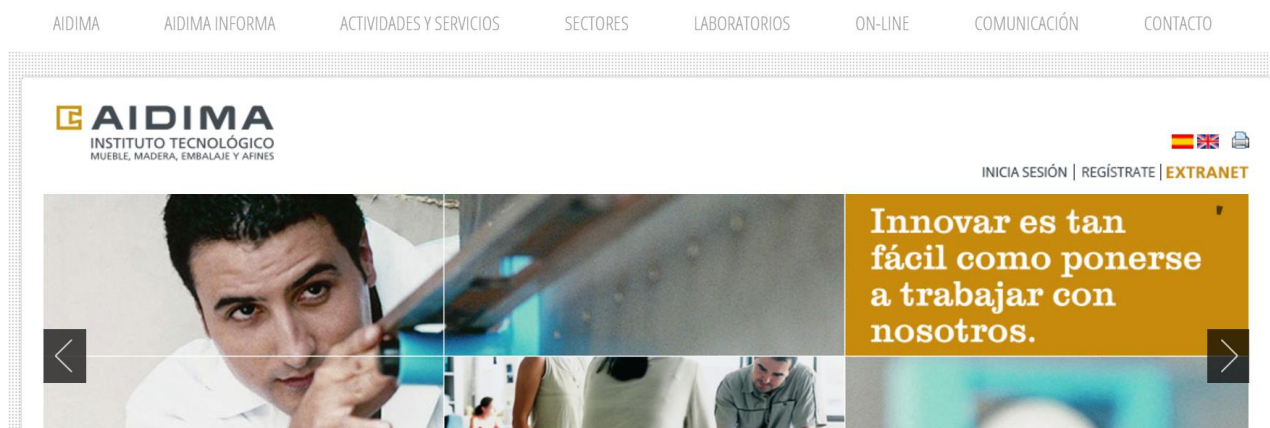
Description: AIDIMA is the Technology Institute on Furniture, Wood, Packaging and related industries. It is a non-for-profit association and its scope is both national and international. It was founded in November 1984, and its main mission consists on increase the competitiveness of the furniture, wood, packaging and transport industries.

Between other many services (research, business consultancy, etc.), AIDIMA develops an important distance training activity with the support of its Virtual Classroom (access at http://aulavirtual.aidima.es/). The virtual courses, mainly in the sectors of manufacturing and distribution of furniture and industrial woodwork, follow two different modalities: distance courses and on-line courses.

In both cases, the courses count with several teachers and expert tutors that guide the learning path of students in an individualized way. The courses are divided in different modules with their own evaluation systems that need to be overcomed in order to move forward and obtain the professional certification in the above sectors. The course incorporates chat, forums and other tools to promote the interaction and team working of the learners. The resources available in the on-line courses are higher, due to the particularity of the on-line technologies applied to the training, such as the possibility of developing interactive forums, chats, video conferencing, etc., enhancing the communication and improvements between teacher and students regardless where they are.

To carry out any of the online courses presented by AIDIMA, the IBM standard under the platform Lotus Learning Space 5 is used.

The Virtual Classroom also includes a private network (news, students forum), the virtual campus (virtual library, methodology) and a job space (creation, modification and dissemination of CVs between professional organizations, etc.).

Beyond the virtual training, AIDIMA develops national and international projects to design and implement learning platforms through virtual technologies right at the workplace. A best practice in this field of activity can be considered the project TELL ME - Technology Enhanced Learning Livinglab For Manufacturing Environments (http://www.aidima.eu/tell-me-project-develops-a-management-and-learning-platform-right-at-the-workplace/), financed by the European Commission under the FP7-ICT Programme.

The project consists in the development of an advanced information system that will allow blue collar workers, to be in permanent contact with their own manufacturing processes without leaving their workplace, and with a hands-free technology. This research promotes the creation of living labs, or learning laboratories in manufacturing environments, through virtual and augmented reality, focusing its development on the manufacturing of helicopters, tailor-made furniture for luxury boats, and the textile sector.

In accordance to the information extracted from AIDIMA website: *"This open source platform is participated by fourteen companies, among which we can find research and technology institutes, private companies and universities, all belonging to eight different European countries. They have associated to produce an advanced ecosystem that will permit an enhancement on productive processes as well as increasing business competitiveness through lifelong learning, and allowing immediate worker access to information, e.g., assembly plans or any other documents needed to carry out the jobs.*

This ecosystem is envisioned as an environment that will incorporate all actors belonging to the productive process. This will permit SME's to manage their services, learning and training from any location, allowing a correct work supervision, and assistance for any kind of problem resolution. The system uses advanced technologies as TEL (Technology Enhanced Learning), which gives name to the project, SOA (Service Oriented Architecture), PT (Precision Teaching), and CMS (Contents Management Systems), among others".

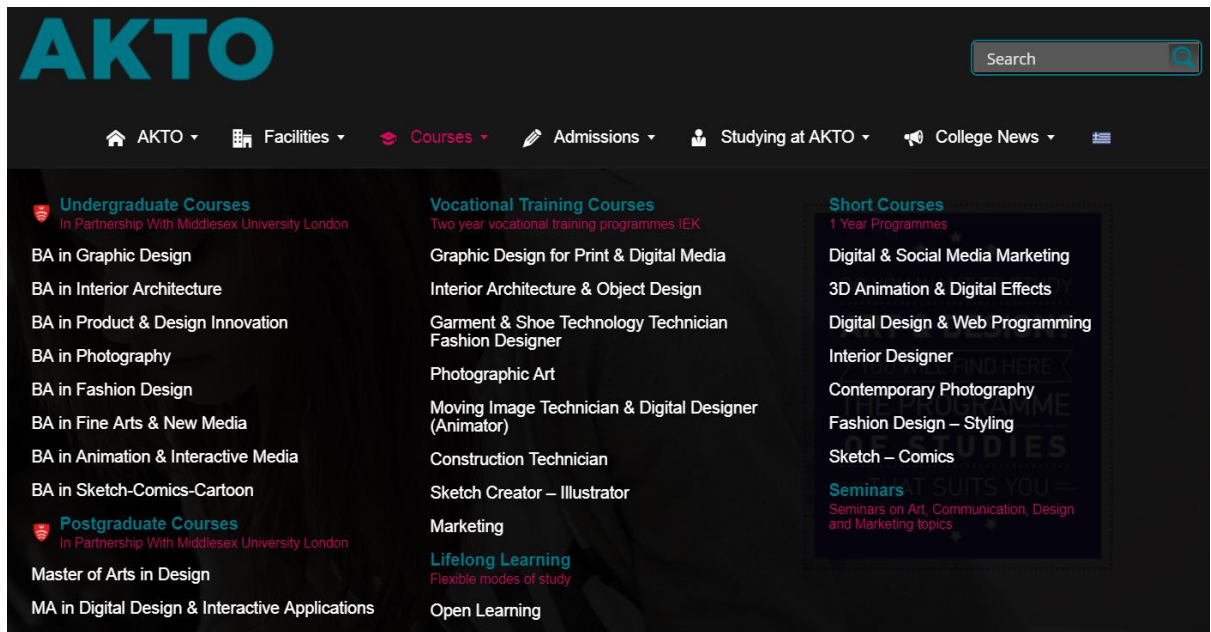CURSOS DESTACADOS

aula de FORMACIÓN

Buscador Cursos

Curso...

écnico   : Powered by Adapting :

Description: AKTO is the largest educational group in Art, Design and Media, in Greece. Applied Arts are taught at AKTO in a global, multidisciplinary spirit, combining scientific theory and artistic practice in a unique way. Beyond the post-graduate and undergraduate programmes of studies, AKTO offers flexible Open Learning and Distance Learning programmes of studies for those who have limited time or distance is an obstacle to their studies: Open Learning (with attendance two afternoons per week) and Distance Learning (with attendance once per month).

The Distance Learning option is offered for the following programmes: Graphic Design, Interior Architecture and Fine Art & New Media. Workshops take place at each meeting, for the total number of classes, during which students work in an intense and coordinated manner, under the supervision of tutors. Part of the work which is initiated at the workshops is completed outside of College premises, until the following meeting. During such period, students are in communication with the College and the academic advisors and, should they be in Athens or Thessalonica for their own reasons, they can attend additional workshops and have free access to the facilities of AKTO.

Corrections on running projects take place during the meetings. Through the use of new technologies (via a special application) group calls are arranged, where students work in teams, forward their queries and analyze each project, so as to be able to complete their works effectively.

Required attendance for the Open Learning mode of studies is two afternoons per week (Mondays and Wednesdays), which can be adjusted to the personal time limitations of students, and is ideal for those who cannot attend the full time mode.

The Open Learning option is offered for the following programmes: Graphic Design, Interior Architecture, Photography and Fashion Design.

The syllabus is developed in a structured procedure and the methods used are the following:

– Lectures: One hour lectures with the use of slide projections and other visual media, through which teaching is supported. Theoretical knowledge is absorbed with the use of examples.

– Projects: Projects are assigned through project briefs, where all required information for their materialization is found, including the assessment criteria, duration, communication schedule with tutor and relative bibliography.

– Seminars: Discussions with student groups on a specific topic or presentations by other tutors or visiting tutors.

– Critique: Necessary in achieving quality results for a project and constructive for the development of any student. At the end of each project critique takes place through the presentation of works in the presence of all student.

– Workshops: Specialized workshops at specified times, in order to practice, under the supervision of a tutor, on topics requiring certain skills.

– Computer studios: Computer classes, taking place at the computer studios of AKTO are included in the weekly schedule. Students who do not have a personal computer can complete their work at the computer studios of the College, under the supervision of a tutor.

Organization: VET Centre of National & Kapodistrian University of Athens
Country: Greece
Website: http://en.uoa.gr/
Craft sector/subsector/activity: Production and Services

Description: The E-Learning Programme of The Vocational Training Center of the National and Kapodistrian University of Athens, in operation since 2001, provides distance education courses that link theoretical and academic knowledge to the practical and applied skills required in their respective professional fields.

In the last 15 years the E-Learning Programme has trained more than 45,000 people, in more than 150 different courses covering a wide range of educational directions from archaeology and philosophy to economics and entrepreneurship. The courses are conducted solely via the Internet and are addressed to all age groups. From people who are just starting their professional career to those who already work as business managers or to those who have a strong interest in any of the offered fields.

Credit points for Vocational Education and Training (ECVET) are awarded in the courses, while graduates, in addition to the Certificate, also receive the Europass Diploma Supplement.

Digital Practice & Education: E-learning courses on Entrepreneurship

The E-Learning Program of The Vocational Training Center of the National and Kapodistrian University uses innovative educational tools, such as:

– analytical ability to identify and evaluate business and innovative opportunities;

– understanding of entrepreneurship, various technological developments and their consequences;

– development of entrepreneurial culture and mentality;

– acquisition of basic knowledge on the principles of entrepreneurship and business operations;

– development of creative thinking for new products and services;

– sharpening critical spirit and development of professional flexibility;

– overall initiation of students / graduates in entrepreneurship, operations and planning of business, oriented to the academic / professional field, which trained students or graduates are being educated in.

– encouraging trainees to turn to creative self-employment through startup business.
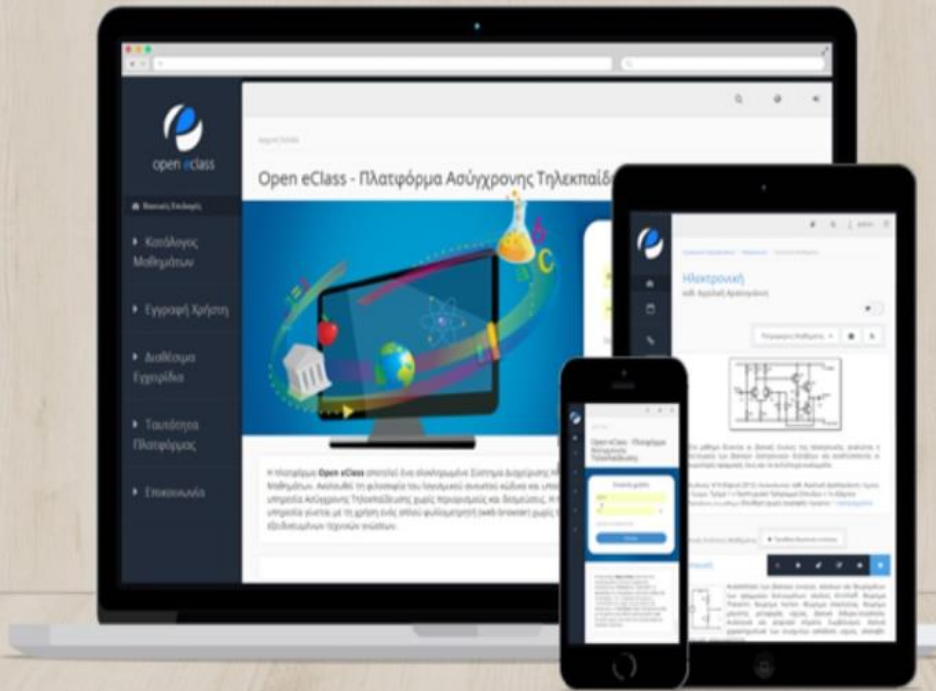
The original idea that initiated the project is to promote at international level and to upscale the concept of Digital Education and Practice (DPE) which is currently applied in Greece by the Athens University in cooperation with enterprises that either produce business software or use it in their day to day management and marketing functions. DPE has been repeatedly tried and tested in a training market environment in Greece and all the training programs that have been launched were successful in terms of demand for participation, graduation and actual employment of the trainees.

DPE combines the right mix of theory with practice and includes:

– A theoretical background on management, marketing and accounting functions, prepared and delivered by the University teaching staff;

– Familiarization with an appropriate business software package, through teaching and mentoring by the staff of the enterprise that developed and marketed the specific software package;

– On the job training, in private sector companies that use the software package.

The concept of the project included the partnership with some of the software companies that already participate in the delivery of the ongoing DPE eLearning programmes in Greece.
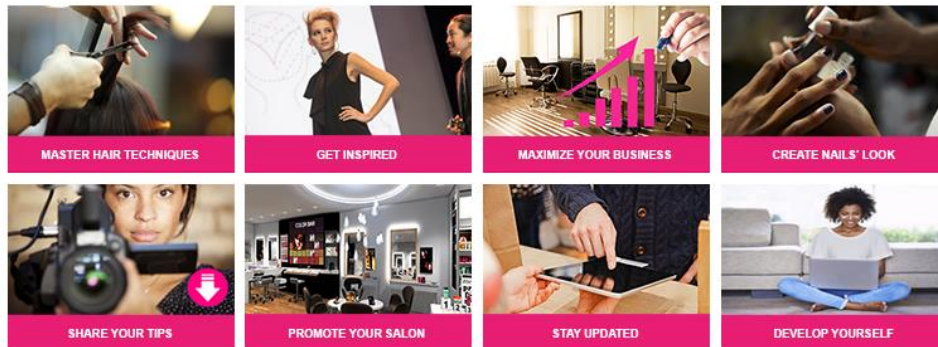
Organization: My Salon-Edu.com	
Country: France	
Website: http://mysalon-edu.com/interfaces/login.php	
Craft sector/subsector/activity: Services	

MY SALON EDU

HOW TO...

MASTER HAIR TECHNIQUES — GET INSPIRED — MAXIMIZE YOUR BUSINESS — CREATE NAILS' LOOK

SHARE YOUR TIPS — PROMOTE YOUR SALON — STAY UPDATED — DEVELOP YOURSELF

Join the collective intelligence of beauty professionals to learn, share and be more and more successful!

Register for free today

Description: CrossKnowledge, leader of Digital Learning, developed the platform "MySalon-Edu.com" with L'Oréal, a group with which the publisher maintains a long-standing relationship of trust. This Massive Open Online Course (MOOC) called "e-cademy" is aimed at the 7 million hairdressing and beauty professionals in the world. In this project, the digital represents the major asset by its ability to reach the entire community very easily everywhere and at any time. But also to allow all these professionals to meet, exchange among themselves, and share their own content (videos, tutorials, ...) in order to gain visibility at local and global level. To accompany the hairdresser in this universe that moves, what better than a digital tool, which allows to adapt from day to day. The major challenge is really to accompany these professionals in the development of their business.

The portal "MySalon-Edu.com" has a societal significance. Within "MySalon-Edu.com", more than 3,000 multimedia resources are currently available and hosted on the platform, which also offers a selection of contents on personal development, business fundamentals, customer advices, video tutorials, quizzes, modules and interviews with professionals from all over the world; the whole is accessible via the web, but also on mobile phones and tablets. This project started with very encouraging beginnings in Canada. Through this initiative, the relationship with the professional beauty industry is improved.

CrossKnowledge (http://www.crossknowledge.com) is a global player in distance learning solutions. These solutions, available in "SaaS" and 100% "cloud" mode, are based on exclusive learning formats. CrossKnowledge solutions facilitate the rapid skill-building of all employees and the dissemination of corporate strategy, while guaranteeing a unique learning experience for the individual and a high return on investment for the organization. CrossKnowledge's educational formats and content have been designed in collaboration with experts and professors from leading business schools. CrossKnowledge's expertise in pedagogical and deployment engineering is formalized within the CrossKnowledge Academy and made available to its clients through certification programs. CrossKnowledge operates globally and targets businesses of all sizes and sectors, with more than 7 million learners.

Highlighted courses

Description:This platform presents a wide variety of topics (more than 40 themes) where students can choose to attend courses to deepen their knowledge. Within each theme there are several courses of choice, with about 106 universities responsible for theoretical content and for the adequacy of the training. This platform features two languages, French and English. However not all courses are in English. A brief description of a course (MOOC Vitra) for craftsmen will be given below.

The MOOC Vitra proposes to discover or to deepen cultural knowledge and techniques on the glass material with the pedagogical team of Cerfav (Centre Européen de Recherches et de Formation aux Arts Verriers – Technical center for research, techniques and training in glass making) and its partners, all glass specialists from the Greater East region of France.

Different techniques and emblems of the glass art are addressed, through its artistic and technical history, but also through testimonies of glassmakers installed who talk about their daily life and their vision of the trade. For each of these techniques, a glass object is decrypted, at each stage of its production. In order to understand the nature of the glass material and its behavior, there are also notions of chemistry and physics in connection with the way in which it is worked. Academic partners also make contributions on the research and digital tools optimize the traditional processes for the implementation of glass. Online exchanges are also possible.

Chapter Four

CASE STUDIES OVERVIEW & KEY IDEAS FROM THE STUDY
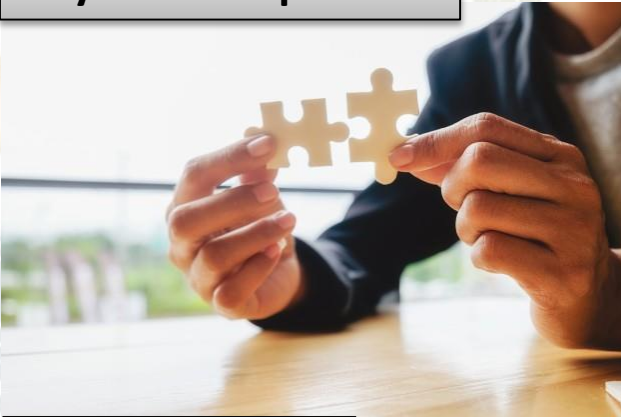
Case Studies Overview

# Organization Gemmological Institute of America (GIA)

Target Audience

Students from all over the World .

Key Skills Acquisition

Auction House Jewellery Specialist; Diamond Buyer; Diamond Sorter/Grader; Jewellery Business Owner; Retailer; Wholesaler; Appraiser; Coloured Stone Buyer; Estate Jewellery Dealer; Jewellery Buyer; Retail Sales; Estate Jewellery Dealer; Jewellery Assistant Manager; Jewellery Sales Professional; Jewellery Training Officer; Pawnbroker; Television Personality; Design.

Learning Model
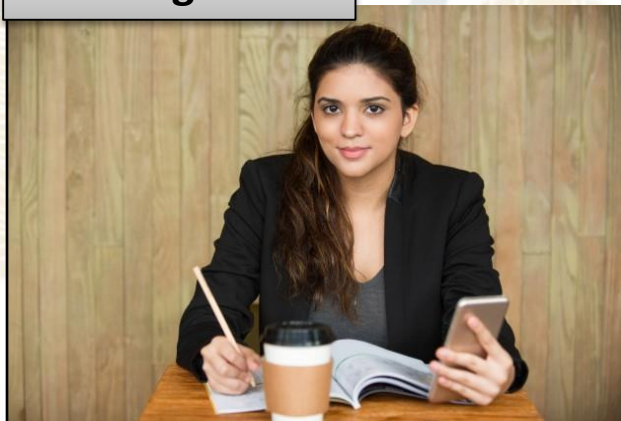
On Campus: GIA has facilities all over the world and the Learning Programmes can be attended in several locations, including Bangkok, Carlsbad, Hong Kong, London, Mumbai, New York or Taipei.

E-Learning and Distance Education: Most of the GIA Programmes are available in the Distance Learning format and most of them guarantee a professional credential to the participants.

Key ICT Tools

eLearning Platform My Gia:
https://my.gia.edu
 A single point of entry into GIA's online laboratory, digital campus and eLearning environment.
Website: www.gia.edu
It is a complete guide for GIA's world and a useful resource for those with an interest in the Gem and Jewels sector.
The Gem Kids website : http://gemkids.gia.edu/
It is an interesting resource for schools and those working with the younger generations, the future jewellers and gemmologists.
GIA's Official YouTube Channel.
Facebook Page: https://www.facebook.com/GIAEducation
LinkedIn: https://www.linkedin.com/company/gia
Twitter: https://twitter.com/gianews
Instagram: https://www.instagram.com/giagrams/

Craft University

Target Audience

Professionals seeking certification; Manufacturers who want to keep up with the industry and streamline their processes.

Key Skills Acquisition

Create CAD models within the metrics of scale, proportion, and element relationships; Develop CAD models within the constraints of cost, time, size, style, and manufacturing methods; Distinguish between various CAD software including 3D printing; Model and render manufacturable pieces of jewellery using CAD/CAM, and display them in a final CAD exhibition; Techniques for installing zippers; How to sew several kinds of corners and shapes; Step-by-step instructions to sew a Travel Bag; Loading techniques and muscle memory techniques to develop control and freehand skills; Thread, batting and fabric and develop pantograph skills, as well as free hand quilting skills and basic feather skills so you can custom-quilt a project.

Learning Model
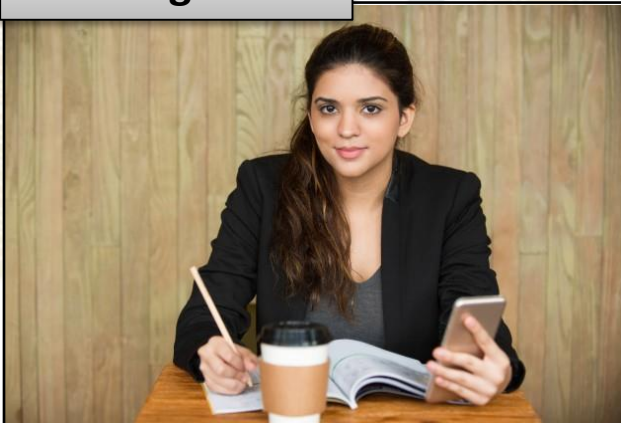
Web seminar: live event that lasts about an hour and includes a Q&A session toward the end where it is possible to submit questions that the instructor will answer.

The virtual environment provide virtual exchange, questions, course documentation.
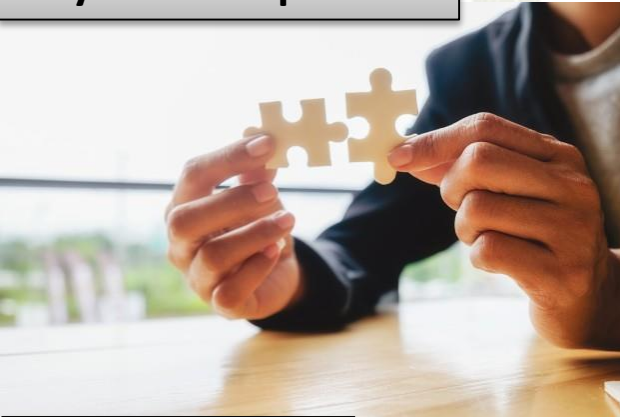
Key ICT Tools

www.craftonlineuniversity.com

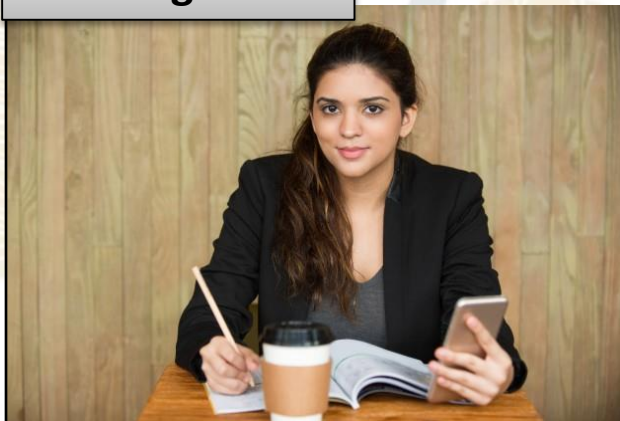# CraftArtEdu

| **Target Audience**	Students - CraftArtEdu's class offerings includes craft and fine art courses designed for all experience levels (Beginner, Advanced beginner, Intermediate, Advanced). Novices can explore new media, while experienced artisans will be challenged by more advanced courses.
Key Skills Acquisition	The classes available online are not only related to the learning of crafts techniques but also cover other topics that may help the community members developing their entrepreneurial skills, supporting them starting a business or improving an existing business.
Learning Model	CraftArtEdu is an online craft and fine art e-learning community.
Key ICT Tools	Online Pltaform: http://craftartedu.com/ CraftArtEdu is also present in social media, notably through Facebook, Pinterest and Twitter. Only on Facebook, CraftArtEdu has more than 22 000 followers.

47

Craftsy

Target Audience

There aren´t any mandatory requirements.

Key Skills Acquisition
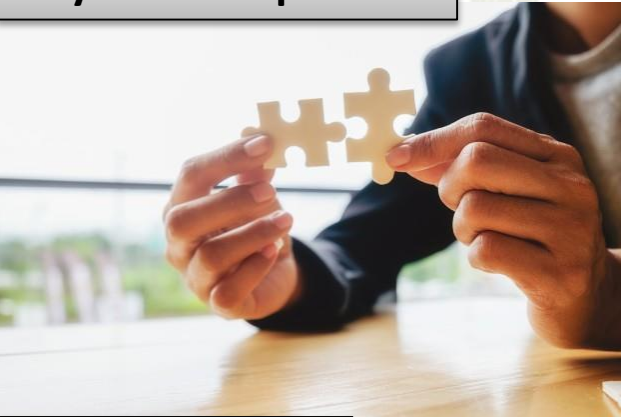
It depends on the course the person chooses.

Learning Model
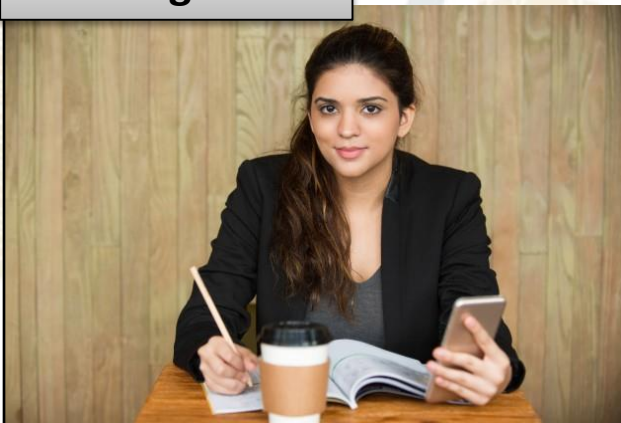
Craftsy provides the access to online classes in several craft techniques.
In this online platform are available more than 1100 online classes, taught by world-renowned instructors.

Key ICT Tools

Craftsy has a strong presence in social media. Some of the channels they use to communicate with their clients and potential users of the platform are Facebook, Twitter, Pinterest, Youtube, Google + and Instagram. Craftsy Apps are also available for IOS and Android for free.

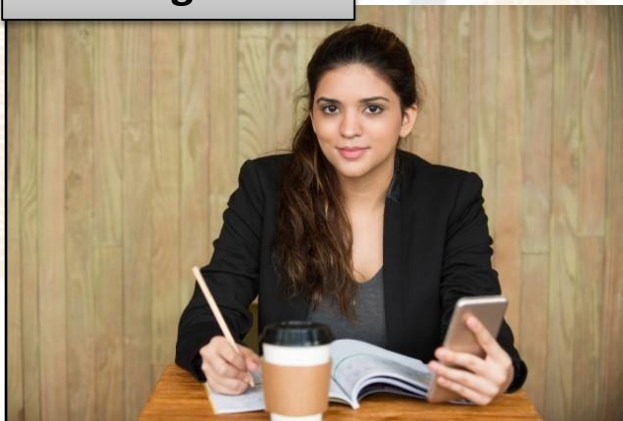http://www.craftsy.com/

ARSUTORIA School

Target Audience

Students that don't need a specific background to attend classes even if courses are master's level.

Key Skills Acquisition
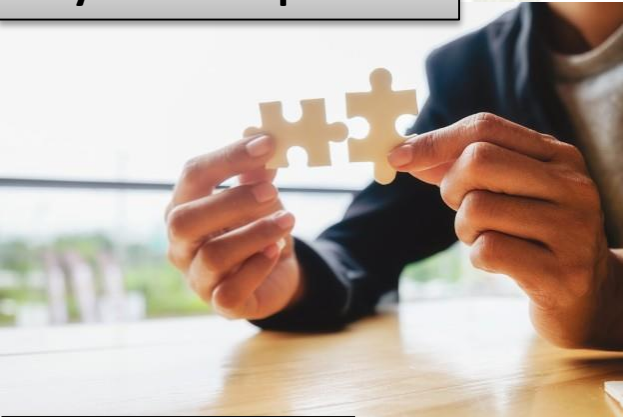
Specific skills depending on the course chosen.

Learning Model

ARSUTORIA Distance Learning programmes can be grouped in two categories:

A. Blended Learning Courses - Classroom courses combining classroom learning, practical "hands-on" training and multimedia and online contents.

B. Short "stand-alone" courses - Short courses developed to be distributed exclusively online at ARSUTORIA e-Learning platform.

Key ICT Tools

The platform and courses can be accessed through the URL http://elearning.arssutoria.com/

Both Vimeo and Youtube platforms can be accessed by following the links: https://vimeo.com/arsutoria; https://www.youtube.com/user/arssutoriaschool

Published by ARSUTORIA and ARSAPEL, the iPad App is an alternative way of accessing the e-Learning platform and the online contents. The App can be downloaded at the iTunes Store:https://itunes.apple.com/it/app/ars-e-learning/id892729246?mt=8

The ARSAPEL group edits and publishes books and magazines related to the footwear industry, including magazines, trend books and technical guides. One important resource published by ARSAPEL is the FOOTWEAR DICTIONARY: http://www.arsarpel.com/
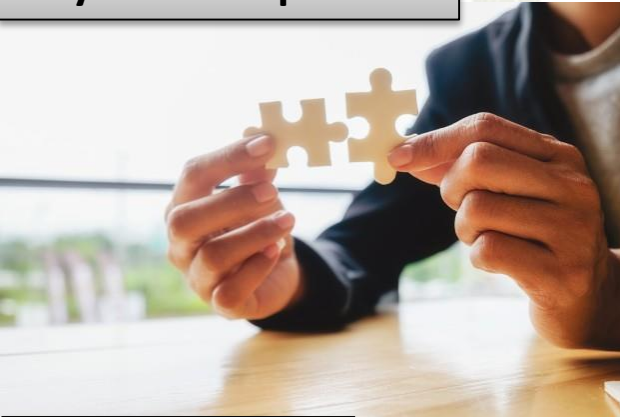
# Samsung Maestros Academy

Target Audience

There aren´t any mandatory requirements.

Key Skills Acquisition

It depends on the course the person chooses: Trophies and medals course; The artisan pens course; Classic method sparkling wines course; Watchmaking course; Ceramic art course; Snowboard shaper's course; Digital blacksmith's course; Art restoration course; Innovative goldsmith's course; Tailored eyewear course; Wigmaker course; Maestro in leather course; Shirt making course; Egg pasta specialist course; Frame builder's course.

Learning Model
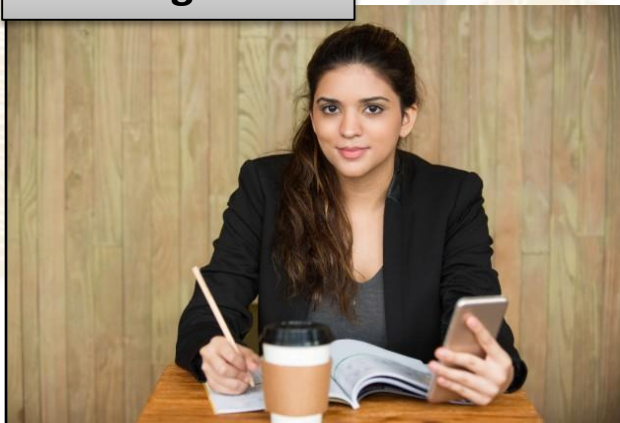
Through an online platform that it is accessible from every consumer's electronic device, such as smartphone, tablets, laptops and Smart TV.

The engagement platform consist in more than 40-video lessons full of ancient secrets, materials and live interactive lessons.

Key ICT Tools

Maestros Academy:
www.maestrosacademy.samsung.it

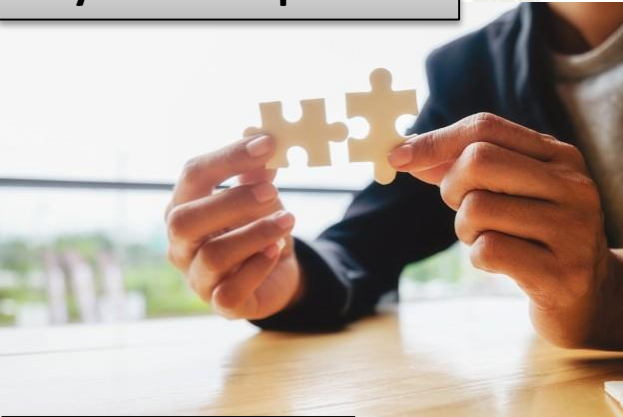An online platform to learn how to create a startup or a company.

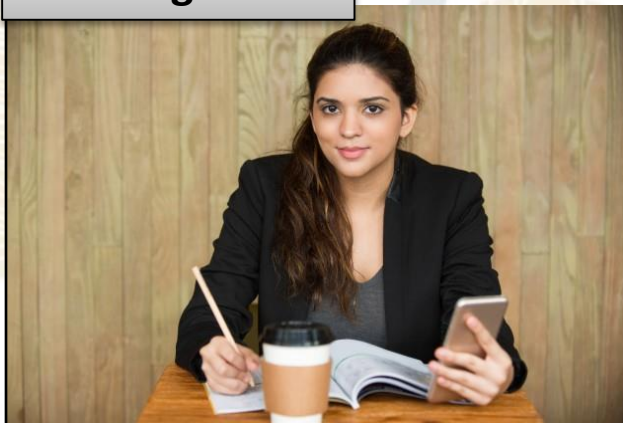# The Burgos School of Arts and Design

Target Audience

Young artisans.

Key Skills Acquisition

Fashion Design, Leather Accessories Craftwork, Clothing Model-Making, Applied Arts to Wood and Artistic Cabinet-Making.

Learning Model

Through an online platform with good learning materials, including photos and videos. It is also possible to find blogs that contain links to different Workshops and artisans to foster collaborations with students and professors.

Key ICT Tools

Online Platform:
http://www.escueladearteburgos.com/proyectos/

Social Networks: http://red.easdburgos.es/
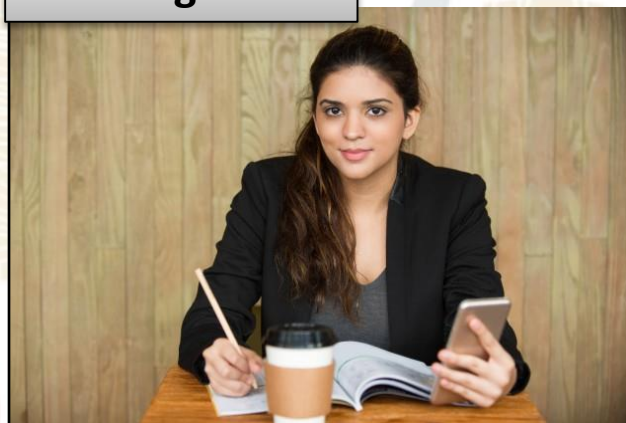
Target Audience

There aren´t any mandatory requirements.

Key Skills Acquisition

It depends on the course the person chooses. AIDIMA has a solid base of knowledge, information and technology transfer skills provided by their long experience working, doing developments and researching on and for the wood, furniture and packaging industries.

Learning Model

Distance training activity with the support of its Virtual Classroom.

The virtual courses, mainly in the sectors of manufacturing and distribution of furniture and industrial woodwork, follow two different modalities: distance courses and on-line courses.

There is the possibility of developing interactive forums, chats, video conferencing, etc enhancing the communication and improvements between teacher and students regardless where they are.

Key ICT Tools

Virtual Classroom: http://aulavirtual.aidima.es/

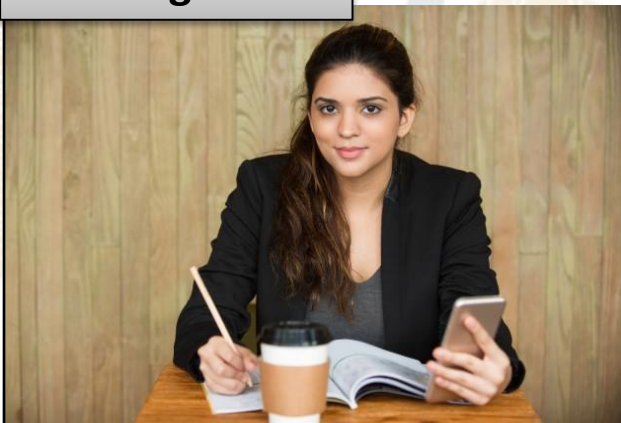# AKTO College

Target Audience

Undergraduate and graduate students.

Key Skills Acquisition

Graphic Design; Interior Architecture;
Photography; Fashion Design;
Fine Art & New Media.

Learning Model

Open Learning (with attendance two afternoons per week) and Distance Learning (with attendance once per month).

Key ICT Tools

https://aktocollege.com/who-we-are/

VET Centre of National & Kapodistrian University of Athens
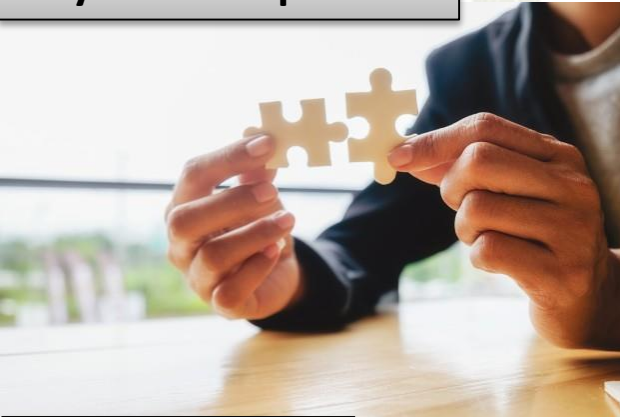
Target Audience

The courses are conducted solely via the Internet and are addressed to all age groups. From people who are just starting their professional career to those who already work as business managers or to those who have a strong interest in any of the offered fields.

Key Skills Acquisition

There are more than 150 different courses covering a wide range of educational directions from archaeology and philosophy to economics and entrepreneurship.

Learning Model
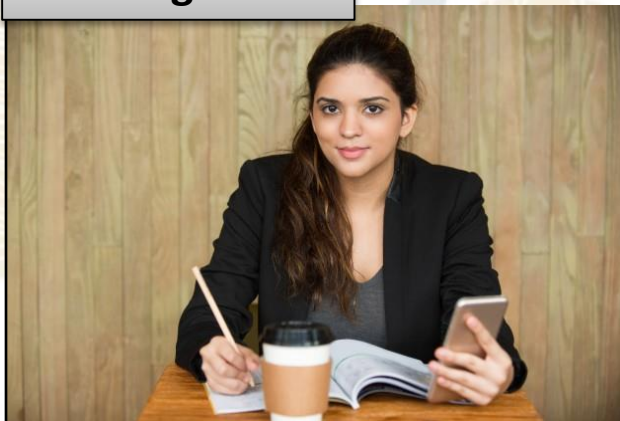
The E-Learning Programme of The Vocational Training Center of the National and Kapodistrian University of Athens provides distance education courses that link theoretical and academic knowledge to the practical and applied skills required in their respective professional fields.

Key ICT Tools

https://elearn.elke.uoa.gr/

Target Audience

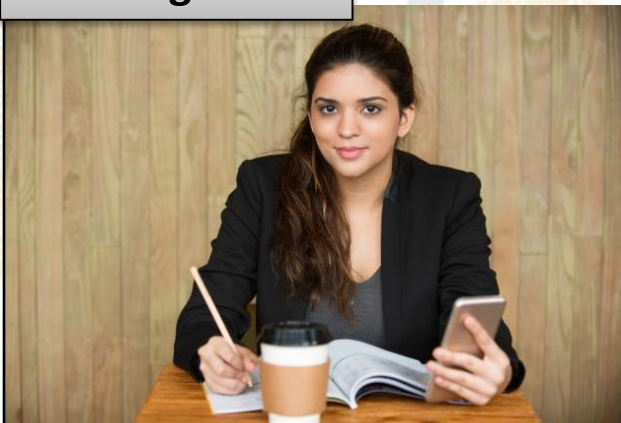There aren´t any mandatory requirements.

Key Skills Acquisition

It depends on the course the person chooses.

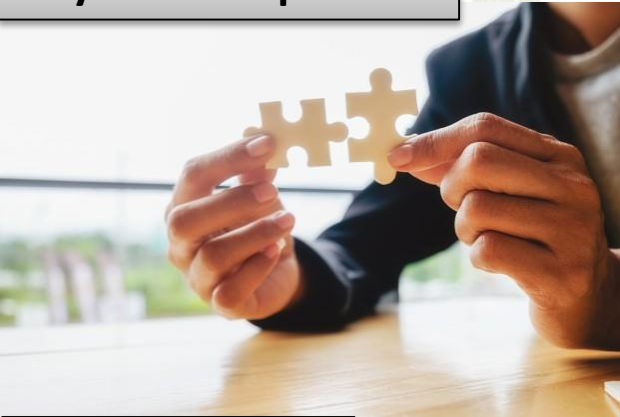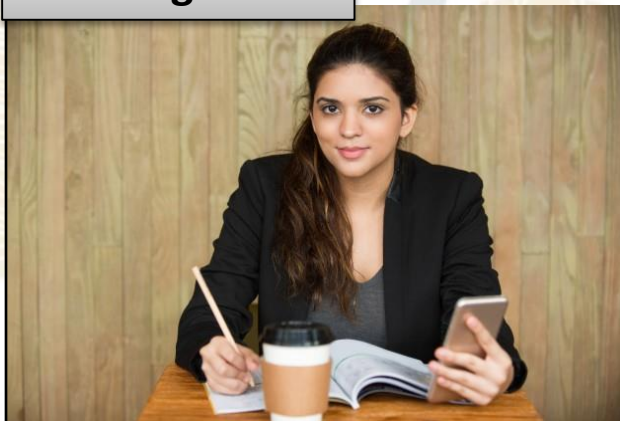## Learning Model

Online Platform.

Key ICT Tools

http://mysalon-edu.com/interfaces/login.php

FUN: Higher Education Excellence. Online, Free and Open Courses

Target Audience	There aren´t any mandatory requirements.
Key Skills Acquisition	It depends on the course the person chooses.
Learning Model	FUN provides an online platform which hosts MOOCs (Massive Open Online Courses) created by higher education institutions, research organizations and FUN partners based in France and throughout the world.
Key ICT Tools	https://www.fun-mooc.fr/

Key Ideas From The Study

To get an interest, courses must be provided by experts, for a wide range of courses, from basic backgrounds to certification courses, passing by historical topics and introduction to materials and components and providing virtual exchanges, questions, courses documentation, step-by-step instructions, and collaborations between teachers, cloud and wiki.

Craft University

A neutral organization, as European Institute of Design, can facilitate the link between digital experts and crafts experts to build the final platform.

Samsung Maestros Academy

Implementing a formal recognition (as Certification ICT in Spain or accreditation in Greece or global evaluation in France or very strict graduation for GIAmerica, for example) has a measurable positive impact for the structure.

GIA

Even in a distance course, several teachers and experts must guide the learning path of students in an individualized way.

Akto and CraftArtEdu

Learning procedure has to be well structured and completed with a concrete activity.

In addition to online classrooms, services may be offered to clients through the platform, notably the possibility to buy materials (to be purchased at competitive prices) or also a space to share photos.

Craftsy

Corrections on running projects are important and even compulsory. Through the use of new technologies (via a special application), group calls may be arranged, where students work in team. Each project has to be analyzed to complete the work.

AKTO

A precise learning methodology has to be implemented gathering project, organization, outcomes measurements, and communication issues.

Chapter Five

KEY REQUIREMENTS OF THE ICT-BASED LEARNING PRACTICES

Following are some requirements related to ICT-Based learning practices. These can be divided into three main fields: Technical, Human and Regulatory Requirements.

Technical

REQUIREMENTS

Regulatory

Human
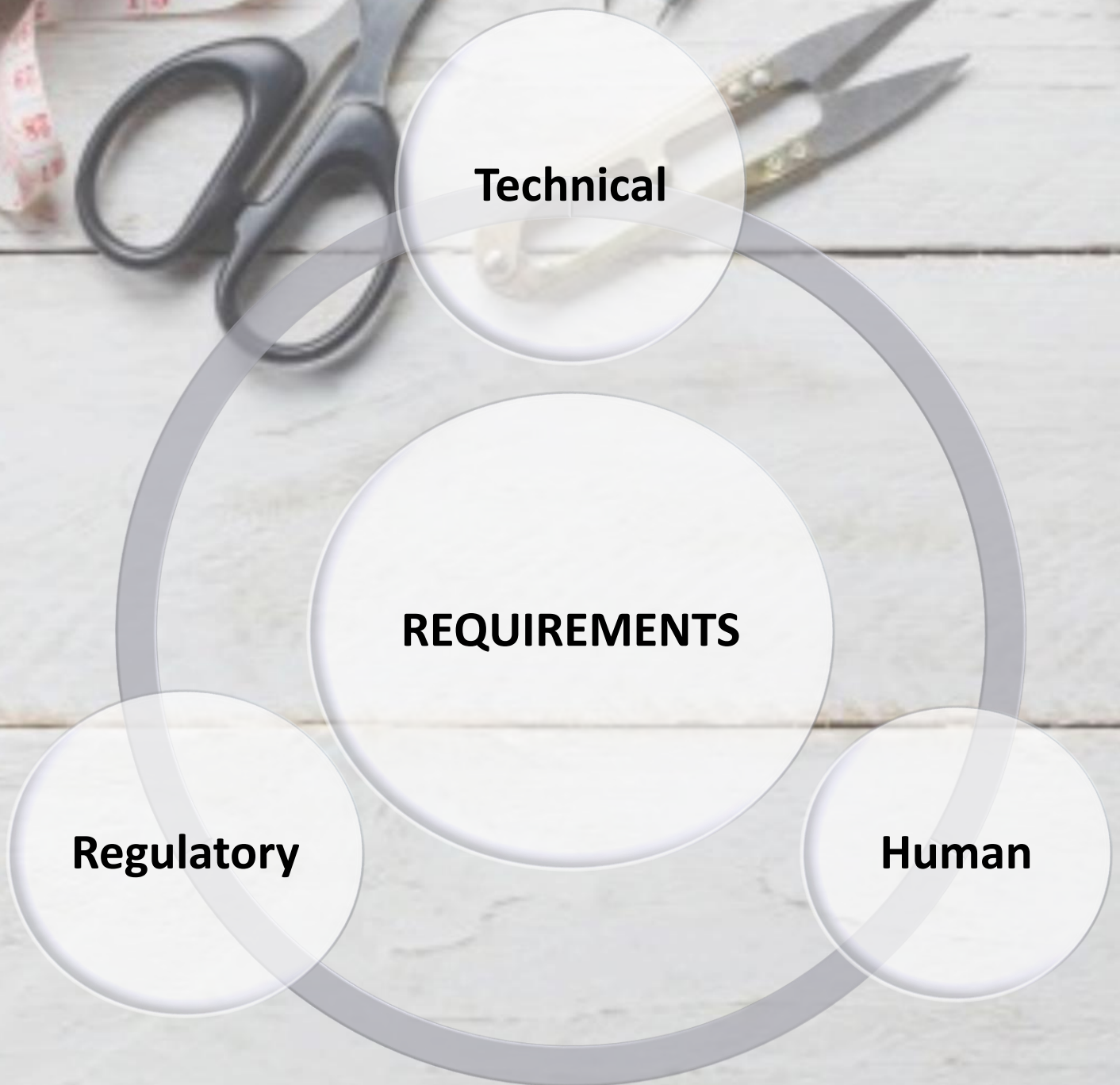
Technical Requirements

Multimedia equipment (smartphone, tablet, laptops, smart TV) (a large screen is recommended for convenience);

Connection to internet;

Networks and services (guideline for pedagogical orientation);

Advanced technology System (as TEL for example, Technology Enhanced Learning and CMS – Contents Management Systems);

Summarized as the technology BYOT (Bring Your Own Technology).

Human Requirements

The efficiency depends on the willingness and the motivation of teachers.

Using online learning environment means that teachers must be familiarized with ICT to integrate the new modality of e-learning in their daily teaching practices. This may require training of teachers first.

Regulatory Requirements

In some countries (as Spain for example) the National Employment Public Service (SEPE) must approve the modality of virtual training through an accreditation.
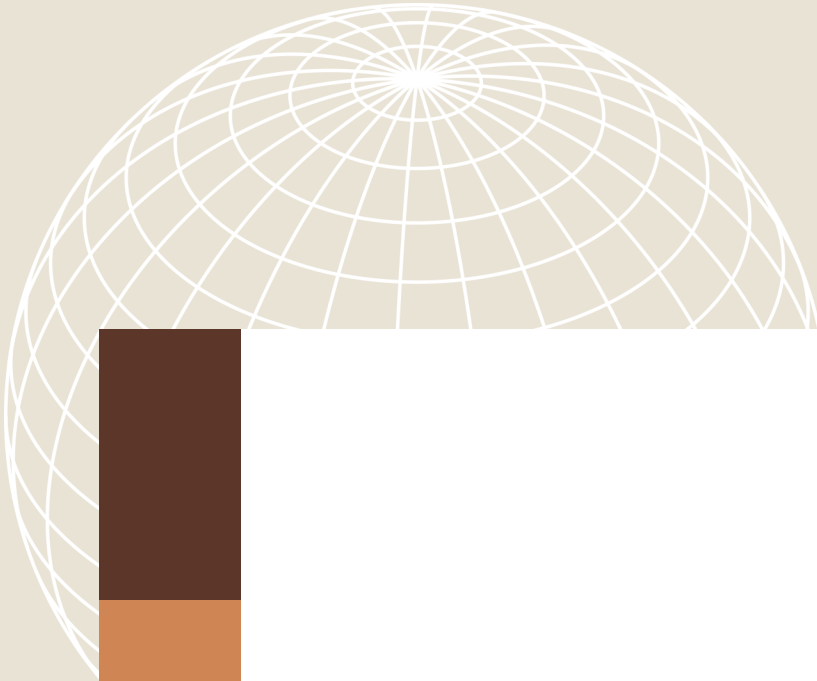
CONCLUSION

The digital transformation contributes to overcome the current economy and the ecological crisis.

It can also contribute to upgrade educational and vocational training systems, while developing the widespread use of innovative technologies.

ICT widespreading is seen as a catalyser of innovation in education, conducting to new teaching practises, new models of organisation, new products and tools to support quality teaching.

Digital applications aim at developing and supporting new interdisciplinary and competence-oriented approaches.

Blended modalities of e-learning offer different opportunities for in-service training of teachers.

It aims to support the communication between trainers and trainees.

New kind of didactics which puts people in network, developing connections, avoiding cultural isolation.

The general aims of these courses are to provide confidence in one's abilities, to help students organising their time depending on their professional habits and responsabilities add better perform.

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