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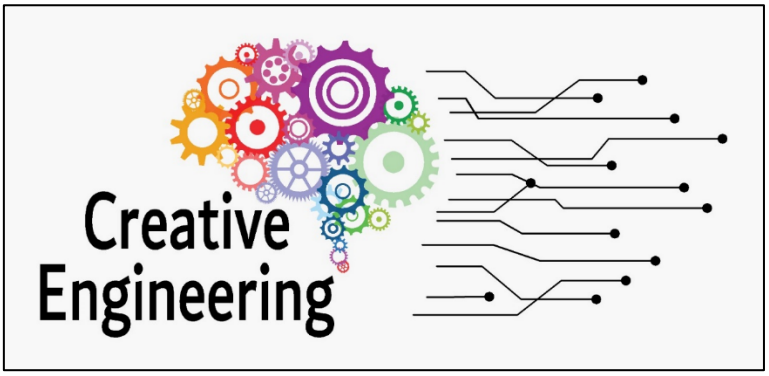

Analysis report of a comparison of current curriculums

2022-1-SK01-KA220-HED-000090102

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1 INTRODUCTION

The current document it’ a template for analysis report of a comparison of current curriculums of engineering faculties with a focus on creative engineering.

1.1 Report Objectives and Expected Results

The Covid-19 Pandemic has caused all educational processes to be transferred to digital media at an unexpected speed.

Higher education institutions have also had to keep up with this situation and most of their education is carried out on eLearning platforms in digital environments. Considering that today's engineering faculty courses are also conducted online, it is necessary to prepare and give the creativity course in digital environments.

The expected result of this report is to provide a comparative report examining the handling of creativity in engineering faculties at different universities.

2 COMPARATIVE REPORT TABLES

Country	- **Italy**
Higher Educational institute	- University of Naples Federico II
Course name	- Machine Learning
Sector	- Computer Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Artificial intelligence - Analytical Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of the course is to present the main Machine Learning techniques for solving classification, numerical prediction and clustering problems and the management and development methodologies of a Machine Learning process, from data preparation to results evaluation. The course will also allow students to develop practical skills in solving real problems using Machine Learning techniques, thanks to exercises carried out with commercial and/or open source tools. The student must know the main Machine Learning and Deep Learning algorithms. The student must also demonstrate that he is able to choose the most suitable Machine Learning algorithm to solve a specific classification and/or numerical prediction and/or clustering problem, based on the requirements of the problem itself. Finally, the student must demonstrate that he is able to choose the appropriate data preparation techniques and must know the techniques necessary for evaluating the performance of Machine Learning and Deep Learning algorithms.
Teaching methodology	- Studio-based - Tutorial - Groupwork
Evaluation methodologies	- Exam - Assignment
Language of course	- English
Website	- https://www.ingegneria-informatica.unina.it/images/files/Guida_LaureaMagistrale_IngInf_2022-2023.pdf

Country	- **Italy**
Higher Educational institute	- Polytechnic University of Milan
Course name	- Digital Engineering
Sector	- Computer Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Creativity - Digital Engineering - Analitycal Thinking
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The ELIS Digital Engineering Course offers first-level university training, strongly oriented towards professional application according to models present in other European countries (cf. Fachhochschulen in Germany, IUT in France, SUP in Switzerland). The Course integrates the study plan of the Degree in Computer Engineering of the Politecnico di Milano with curricular experiences in companies and learning activities based on the development of projects commissioned by companies and start-ups of the ELIS Consortium. Thanks to the involvement of the network of partner companies, the past editions have recorded a rate of entry into the world of work equal to 100%.
Teaching methodology	- Studio-based - Tutorial - Groupwork
Evaluation methodologies	- Exam
Language of course	- Italian
Website	- https://www.elis.org/education-training/corso-ingegneria-igitale/?gclid=CjwKCAiA3pugBhAwEiwAWFzwdUDpOaJU6NLA22mXsyMowRpCJh6iT19BmLbEnTtcZV4c6k4KfpJx9RoCi-kQAvD_BwE

Country	- Italy
Higher Educational institute	- University of Genova
Course name	- Digitalization of the project
Sector	- Technology of Architecture
Level of studies (choose)	- Master degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Digital engineering - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The course aims to provide students with the technical and methodological knowledge that will allow them to carry out a building project of the building envelope in a BIM (Building Information Modeling) digital environment. Knowledge required by the construction sector in the contemporary national and international context. The themes of the main components of the building envelope and contemporary technological solutions are explored; preparation of the main drawings of the building envelope in a BIM environment. The topics are covered through lectures and practical exercises.
Teaching methodology	- Studio based, tutorial
Evaluation methodologies	- Exam, assignment
Language of course	- Italian
Website	- https://corsi.unige.it/off.f/2021/ins/49584

Country	- Italy
Higher Educational institute	- Polithecnic University of Milan
Course name	- Industrial Technologies for Precision Agriculture

Sector	- Agricoltural Engineering
Level of studies (choose)	- Master degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Digitalk engineering, problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- N/A
Teaching methodology	- Studio based, tutorial
Evaluation methodologies	- Exam, assignment
Language of course	- English
Website	- https://www.ccsage.polimi.it/struttura-dei-corsi/

Country	- Italy
Higher Educational institute	- University of Pisa
Course name	- Mechanic of robots
Sector	- Robotic and automation Engineering
Level of studies (choose)	- Master degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity Digital Enginneering Artificial intelligence Analitycal Thinking problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The graduate of the Master's Degree Course in Robotics and Automation Engineering has a cultural and professional profile focused on scientific and technological knowledge concerning modelling, simulation and control of systems for automation, industrial robotics and mobile robotics. The aim of the course is to train engineers capable of innovating and developing production, of managing and controlling complex systems, with high design, planning
Teaching methodology	- Studio based, tutorial
Evaluation methodologies	- Exam, assignment
Language of course	- italian

Website	- https://www.unipi.it/index.php/lauree/regolamento/10523

Country	- Italy
Higher Educational institute	- University of Pisa
Course name	- Robotic
Sector	- Robotic and automation Engineering
Level of studies (choose)	- Master degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity Digital Enginneering Artificial intelligence Analitycal Thinking problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The Master's Degree Course in Robotics and Automation Engineering provides a single curriculum, with examinations typical of the Automation and Robotics sector and two groups of examinations from which students can choose their optimal training path. The first group is aimed at completing the training acquired in the original three-year degree course, the second group allows students to orient their curriculum towards the field of Automation and Systems Management, or Vehicle Control.
Teaching methodology	- Studio based
Evaluation methodologies	- Exam, assignment
Language of course	- Italian
Website	- https://www.unipi.it/index.php/lauree/regolamento/10523

Country	- Italy
Higher Educational institute	- University of Brescia
Course name	- Technology engineering for the digital enterprise
Sector	- Computer Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Engineering - Analitycal Thinking
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The degree course in Technology Engineering for the Digital Enterprise arises from the request of the manufacturing world to combine the currently available engineers with a three-year engineer who favors transversal skills, also gained with training organized in the form of internships in companies. In addition to basic technical-scientific skills in various sectors, graduates in

	Engineering of digital business technologies possess a broad-spectrum engineering education in the field of digital integration technologies and skills in integrated business management.
Teaching methodology	- Studio-based - Tutorial - Groupwork
Evaluation methodologies	- Exam - Assignment
Language of course	- Italian
Website	- https://corsi.unibs.it/it/tecnologieimpresadigitale

Country	Italy
Higher Educational institute	University of Molise
Course name	Design of eco-sustainable timber structures
Sector	Civil Engineering
Level of studies (choose)	Bachelor Degree
Length/duration	3 months
Keywords (select the keywords of the course)	Creativity Problem solving
Course fruition modality (choose one or more)	Climate Green transition
In case of online or blended modality please clarify which platform are you using	In-class
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	
Teaching methodology	
Evaluation methodologies	
Language of course	- Italian
Website	

Country	- Italy
Higher Educational institute	- University of Molise
Course name	- Structural design in digital enviroment
Sector	- Civil Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Digital Engineering
Course fruition modality (choose one or more)	- Analitycal Thinking - Problem Solving
In case of online or blended modality please clarify which platform are you using	- In-class
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	
Teaching methodology	- Studio based

	- Tutoring - Groupwork
Evaluation methodologies	- Exam - Assignement
Language of course	- Italian
Website	

Country	- Italy
Higher Educational institute	- University of Molise
Course name	- Geothecnical design in digital enviroment
Sector	- Civil Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Digital Engineering - Creativity
Course fruition modality (choose one or more)	- Analitycal Thinking - Problem Solving
In case of online or blended modality please clarify which platform are you using	- In-class
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	
Teaching methodology	- Studio based - Tutoring - Groupwork
Evaluation methodologies	- Exam - Assignement
Language of course	- Italian
Website	- https://www.e-learning.unimol.it/course/index.php?categoryid=63

Country	- Italy
Higher Educational institute	- University of Molise
Course name	- Basic of digidalization of new technologies
Sector	- Computer Science
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Digital Engineering - Creativity
Course fruition modality (choose one or more)	- Analitycal Thinking
In case of online or blended modality please clarify which platform are you using	- In-class
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The course provides an overview of digitization data, with particular reference to data extracted from the web and social media. The second topic concerns the digitization process of companies and public administrations. A description of the so-called enabling technologies will then follow, to conclude with an

	overview of the characteristics and responsibilities of the digital transformation manager.
Teaching methodology	- Studio based
Evaluation methodologies	- Exam - Assignement
Language of course	- Italian
Website	- https://www.e-learning.unimol.it/course/index.php?categoryid=63

Country	- Italy
Higher Educational institute	- University of Naples Federico II
Course name	- Digital technology for constructions
Sector	- Civil Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital engineering - Analytical Thinking - Problem solving - Climate
Course fruition modality (choose one or more)	- Problem solving
In case of online or blended modality please clarify which platform are you using	- In-class
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The specific educational objectives of the Degree Course are to train professionals with operational skills and with strong skills, knowledge and skills in the use of digital systems to support the management of civil and construction works and the transformation of the territory. The training objectives are strongly oriented towards a "learn by doing" and "learn by thinking" approach, especially thanks to internships and workshops. Furthermore, the notional aspects are transmitted not only through lectures but also through practical laboratory activities appropriately designed to stimulate the student to reason and experiment supported by reflection.
Teaching methodology	- Tutorial
Evaluation methodologies	- Exam - Assignement
Language of course	- Italian
Website	- https://www.unina.it/-/22444579-tecnologie-digitali-per-le-costruzioni

Country	- Italy
Higher Educational institute	- University of Molise
Course name	- Artifical intelligence: methods and techniques
Sector	- Computer Science
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Artificial intelligence, problem solving

Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	The course covers three main topics: the first is a brief introduction to the history of Artificial Intelligence; the second focuses on the main methodological approaches, namely learning, statistical and deductive inference, and genetic and bio-inspired algorithms; finally, the third concerns application areas: robotics, natural language understanding and generation, data analysis and classification, and games.
Teaching methodology	- Studio based
Evaluation methodologies	- Exam, assignment
Language of course	- Italian
Website	-
	-
Country	- Italy
Higher Educational institute	- Politechnic of Torino
Course name	- Agri-Tech: Technologies for a sustainable agriculture
Sector	- Computer Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, digital engineering, analytical thinking, problem solving, climate, green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The course focuses on advanced technological solutions in the agricultural field aimed at integrating a sustainable use of the natural resources, a reduced impact on the environmental compartments, and the promotion of circular approaches, maximizing crop production, also in line with the EU Farm to Fork strategy and Common Agricultural Policy. The course will introduce the students to the key resources and needs of agriculture, identifying critical aspects with potential negative environmental effects (e.g. water use, contamination by agrochemicals, soil depletion, etc.). The most advanced technological solutions available to overcome such criticalities will be presented. Hands-on field activities will also be organized.
Teaching methodology	- Studio based
Evaluation methodologies	- Exam; - assignment
Language of course	- English
Website	- https://didattica.polito.it/pls/portal30/gap.pkg_guide.viewGap?p_cod_ins=01FGGLM&p_a_acc=2024&p_header=S&p_lang=&multi=N

Country	- Italy
Higher Educational institute	- University of Naples Federico II
Course name	- Information systems for buildings (BIM)
Sector	- Civil Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Digital engineering - Analytical Thinking
Course fruition modality (choose one or more)	- Problem solving -
In case of online or blended modality please clarify which platform are you using	- In-class
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	
Teaching methodology	- Studio-based - Tutorial
Evaluation methodologies	- Exam - Assignement
Language of course	- Italian
Website	- http://www.dist.unina.it/didattica/corsi-di-laurea/lauree-magistrali/1484790-ingegneria-strutturale-e-geotecnica/

Country	- Italy
Higher Educational institute	- University of Ferrara
Course name	- Technologies for the digital industry
Sector	- Mechanical Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital engineering - Analytical Thinking - Creativity - Problem solving
Course fruition modality (choose one or more)	- In class -
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The Professionalizing Degree course in TECHNOLOGIES FOR DIGITAL INDUSTRY aims to train professionals with a mastery of general technical methods and contents of medium complexity but strongly integrated with each other, relating to the disciplines of mechanics, automation, computer science and electronics. The graduate in TECHNOLOGIES FOR DIGITAL INDUSTRY is therefore able to face and solve medium-complexity technical business problems as a support to specialized figures with higher levels of training (Master's Degrees) and alongside figures of equal, but less applicative, educational level (Bachelor's degree).
Teaching methodology	- Studio-based

Evaluation methodologies	- Groupwork - Laboratory activity - Exam - Assignement
Language of course	- Italian
Website	- https://corsi.unife.it/tecnologie-industria-digitale/corso/esplora

Country	- Italy
Higher Educational institute	- Politechnic of Torino
Course name	- Introduction to web applications
Sector	- Computer Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Digital engineering - Creativity - Problem solving - Analytical Thinking
Course fruition modality (choose one or more)	- In class -
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- N.A.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignement
Language of course	- Italian
Website	- Computer engineering

Country	- Italy
Higher Educational institute	- Luiss (Milan)
Course name	- Digital Transformation & Emerging Technologies
Sector	- Law
Level of studies (choose)	- Master Degree
Length/duration	- 2 years
Keywords (select the keywords of the course)	- Digital engineering - Analytical Thinking
Course fruition modality (choose one or more)	- In class

In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The course will deepen the student's comprehension of the digital transformation analyzing the process that contributes to the transitions to a digital society. It will explore applied methods to tackle society problems and technologies, applications, and processes for data management
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam
Language of course	- English
Website	- https://www.luiss.it/ammissione/offerta-formativa/laurea-magistrale/law-digital-innovation-sustainability?utm_source=google_ads&utm_medium=search&utm_campaign=Magistrali_2023_Law_Digital_Innovation_and_Sustainability_Search_GA_MKT_LGCMAG23_&gclid=Cj0KCQiApKagBhC1ARIsAFc7Mc6jgi-ZJ31Qo26kIH5TExn3CZYiLeGwdNwsgZIEZT5CwGRGaIwNtXIaAjFSEALw_wcB

Country	- Slovakia
Higher Educational institute	- "Academy of Arts in Banská Bystrica - The Faculty of Fine Arts"
Course name	- Intermedia digital media Spatial practice
Sector	- Art
Level of studies (choose)	- Bachelor degree -
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The graduate of the bachelor's study programme Intermedia-Digital Media-Spatial Creation acquires the professional competence to perform the profession of a visual artist at the level of Bachelor of Arts. On the basis of the acquired theoretical and professional knowledge of world and Slovak visual arts and technical-technological skills, he/she is prepared to carry out and organize his/her own creative activity or in team cooperation in the field of intermedia, digital media and spatial creation.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/au-intermedia-digitalne-media-priestorova-tvorba

Country	- Slovakia
Higher Educational institute	- Academy of Fine Arts and Design in Bratislava
Course name	- Digital Arts
Sector	- Art
Level of studies (choose)	- Bachelor degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The study program links fine art and design with computer technologies. It responds to a fast changing world in which it is important to be able to acquire new skills and where a wide range of modern digital technologies bring visual artists closer to programmers. Besides the practical use of computers in the creative process, the program also includes the social dimension of the impact of digital technologies on humans and innovative means of expression which digital technologies provide artists with.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak - English
Website	- https://www.portalvs.sk/en/studijny-program/digitalne-umenia

Country	- Slovakia
Higher Educational institute	- "Alexander Dubček University of Trenčín - Faculty of Industrial Technologies in Puchov"
Course name	- Computer-assisted Material Engineering
Sector	- Mechanical Engineering
Level of studies (choose)	- Bachelor degree -
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering, Analitycal Thinking, problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The graduate of Computer-assisted materials engineering study programme will obtain the needed important knowledge relating to computational modelling and materials simulation under the loading, resulting into the optimisation of design in terms of operational (in-service) loading. He/she has the basic knowledge in the area of production, testing methods of various materials, technological processing, selection as well as degradation, considering the main types of technical materials.

Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/tnuad-pocitacova-podpora-materialoveho-inzinierstva

Country	- Slovakia
Higher Educational institute	- "Slovak University of Agriculture in Nitra - Faculty of Engineering"
Course name	- Control Systems in Production Engineering
Sector	- Mechanical Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking, problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The content and forms of education are intended to teach the graduate the principles of scientific work, to formulate problems in the field of control systems in production technology and also how to solve them. This goal is achieved by guiding students to systematic work with scientific literature, participation in experimental work, analysis of the obtained experimental results, drawing conclusions and finding ways to implement the acquired knowledge in the further development of science and practice.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/riadiace-systemy-vo-vyrobnej-technike

Country	- Slovakia
Higher Educational institute	- "Slovak University of Agriculture in Nitra - Faculty of Engineering"
Course name	- Control Systems in Production Engineering
Sector	- Mechanical Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 2 years
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In-class

In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The content and forms of education are intended to teach the graduate the principles of scientific work, to formulate problems in the field of control systems in production technology and also how to solve them. This goal is achieved by guiding students to systematic work with scientific literature, participation in experimental work, analysis of the obtained experimental results, drawing conclusions and finding ways to implement the acquired knowledge in the further development of science and practice.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/riadiace-systemy-vo-vyrobnej-technike0

Country	- Slovakia
Higher Educational institute	- "Slovak University of Agriculture in Nitra - Faculty of Engineering"
Course name	- Control Systems in Production Engineering
Sector	- Mechanical Engineering
Level of studies (choose)	- Ph.D course
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking, Problem solving -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The content and forms of education are intended to teach the graduate the principles of scientific work, to formulate problems in the field of control systems in production technology and also how to solve them. This goal is achieved by guiding students to systematic work with scientific literature, participation in experimental work, analysis of the obtained experimental results, drawing conclusions and finding ways to implement the acquired knowledge in the further development of science and practice.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak

Website	- https://www.portalvs.sk/en/studijny-program/riadiace-systemy-vo-vyrobnej-technike0

Country	- Slovakia
Higher Educational institute	- "Slovak University of Technology in Bratislava - Faculty of Materials Science and Technology in Trnava"
Course name	- Computer-Aided Design and Production
Sector	- Mechanical Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- "Graduates master the complex issue of CA systems and Ca technologies used in preparation and management of production and with the ability of their creating, modification for special requirements and creation of specialised applications and superstructures, they are able to perform and lead teams realising Enginineering computer analysis, simulation of production processes, project production units using computer support, they can work as heads of working teams using computer technology in the area of technical preparation of production and work as managers of companies anc private entrepreneurs in the area of applying computer technology and CA systems priorly in the area of production support - Graduates of the programme Computer Aided Manufacturing Technologies are being prepared for leading professions focused on working with CA software. They are able to deal with technological and organizational issues as well as design and innovate production processes and systems. They are familiar with CA systems and CA technologies used in the preparation and management of production also with the ability to complete them, adjustments for special requirements and creation of specialized applications and superstructures. They are able to lead teams conducting engineering computer analysis, simulation of production processes, designing production units using computer support.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak - English

Website	- https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-navrhu-a-vyroby - https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii2e

Country	- Slovakia
Higher Educational institute	- "Slovak University of Technology in Bratislava - Faculty of Materials Science and Technology in Trnava"
Course name	- Computer-Aided Design and Production
Sector	- Mechanical Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 2 years
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- "Graduates master the complex issue of CA systems and Ca technologies used in preparation and management of production and with the ability of their creating, modification for special requirements and creation of specialised applications and superstructures, they are able to perform and lead teams realising Enginineering computer analysis, simulation of production processes, project production units using computer support, they can work as heads of working teams using computer technology in the area of technical preparation of production and work as managers of companies anc private entrepreneurs in the area of applying computer technology and CA systems priorly in the area of production support - Graduates of the programme Computer Aided Manufacturing Technologies are being prepared for leading professions focused on working with CA software. They are able to deal with technological and organizational issues as well as design and innovate production processes and systems. They are familiar with CA systems and CA technologies used in the preparation and management of production also with the ability to complete them, adjustments for special requirements and creation of specialized applications and superstructures. They are able to lead teams conducting engineering computer analysis, simulation of production processes, designing production units using computer support.
Teaching methodology	- Studio-based
Evaluation methodologies	- Lecture
Language of course	- Exam

Website	- https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-navrhu-a-vyroby - https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii2e

Country	- Slovakia
Higher Educational institute	- "The Technical University of Košice - Faculty of Manufacturing Technologies with a seat in Presov"
Course name	- Computer aided manufacturing technologies
Sector	- Mechanical Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- "Graduates of the programme Computer Aided Manufacturing Technologies are being prepared for leading professions focused on working with CA software. They are able to deal with technological and organizational issues as well as design and innovate production processes and systems. They are familiar with CA systems and CA technologies used in the preparation and management of production also with the ability to complete them, adjustments for special requirements and creation of specialized applications and superstructures. They are able to lead teams conducting engineering computer analysis, simulation of production processes, designing production units using computer support. - Graduates can work in the institutes of the Slovak Academy of Sciences, faculties of Technical universities and Technical universities using information technology and CA systems and technologies. Graduates possess deepened and expanded theoretical knowledge of technological disciplines in the field computer aided systems application in the field of chipless as well as chip formation machining of metals, automation of technological processes and their application in production enterprises taking into account aspects of automation of different types of production processes."
Teaching methodology	- Studio-based - lecture
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii9 - https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii11

Country	- Slovakia
Higher Educational institute	- "The Technical University of Košice - Faculty of Manufacturing Technologies with a seat in Presov"
Course name	- Computer aided manufacturing technologies
Sector	- Mechanical Engineering
Level of studies (choose)	- Master degree
Length/duration	- 2 years
Keywords (select the keywords of the course)	- Digital Enginneering, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- "Graduates of the programme Computer Aided Manufacturing Technologies are being prepared for leading professions focused on working with CA software. They are able to deal with technological and organizational issues as well as design and innovate production processes and systems. They are familiar with CA systems and CA technologies used in the preparation and management of production also with the ability to complete them, adjustments for special requirements and creation of specialized applications and superstructures. They are able to lead teams conducting engineering computer analysis, simulation of production processes, designing production units using computer support. - Graduates can work in the institutes of the Slovak Academy of Sciences, faculties of Technical universities and Technical universities using information technology and CA systems and technologies. Graduates possess deepened and expanded theoretical knowledge of technological disciplines in the field computer aided systems application in the field of chipless as well as chip formation machining of metals, automation of technological processes and their application in production enterprises taking into account aspects of automation of different types of production processes."
Teaching methodology	- Studio-based - lecture
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii9 - https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii11

Country	- Slovakia
Higher Educational institute	- "The Technical University of Košice - Faculty of Manufacturing Technologies with a seat in Presov"

Course name	- Computer aided manufacturing technologies
Sector	- Mechanical Engineering
Level of studies (choose)	- Ph.D course
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- "Graduates of the programme Computer Aided Manufacturing Technologies are being prepared for leading professions focused on working with CA software. They are able to deal with technological and organizational issues as well as design and innovate production processes and systems. They are familiar with CA systems and CA technologies used in the preparation and management of production also with the ability to complete them, adjustments for special requirements and creation of specialized applications and superstructures. They are able to lead teams conducting engineering computer analysis, simulation of production processes, designing production units using computer support. - Graduates can work in the institutes of the Slovak Academy of Sciences, faculties of Technical universities and Technical universities using information technology and CA systems and technologies. Graduates possess deepened and expanded theoretical knowledge of technological disciplines in the field computer aided systems application in the field of chipless as well as chip formation machining of metals, automation of technological processes and their application in production enterprises taking into account aspects of automation of different types of production processes."
Teaching methodology	- Studio-based - lecture
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii9 - https://www.portalvs.sk/en/studijny-program/pocitacova-podpora-vyrobnych-technologii11

Country	- Slovakia
Higher Educational institute	- "The Technical University of Košice - Faculty of Mechanical Engineering"
Course name	- Robotics and robototechnology
Sector	- Mechanical Engineering
Level of studies (choose)	- Master Degree

Length/duration	- 2 years
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking,
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Graduates of the study program have a complex combination of multiple knowledge in the field of robotics and robot technology. The graduate is able to coordinate development teams in the implementation of robotic cells in production organizations. The graduate is also able to deploy robotic devices in production cells, including the necessary peripheral devices and demonstrate functions and characteristics on a virtual 3D model, taking into account the requirements of Industry 4.0. The graduate is able to understand the problems related to the implementation of artificial intelligence in robotic systems.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- English
Website	- https://www.portalvs.sk/en/studijny-program/robotics-and-robototechnology-robotika-a-robototechnologie

Country	- Slovakia
Higher Educational institute	- "The Technical University of Košice - Faculty of Mechanical Engineering"
Course name	- Industrial engineering
Sector	- Mechanical Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering, Analitycal Thinking
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- A graduate of the Industrial Engineering programme in the 1st cycle of higher education possesses knowledge in the key areas of mechanical and industrial engineering. They can monitor, and control standard manufacturing processes and systems, identify process non-conformances, apply selected methods and techniques in the design, testing and validation of integrated parts of manufacturing and non-manufacturing processes, including the use of software support.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- English

Website	- https://www.portalvs.sk/en/studijny-program/industrial-engineering-priemyselne-inzinierstvo0

Country	- Slovakia
Higher Educational institute	- "The Technical University of Košice - Faculty of Mechanical Engineering"
Course name	- Smart technologies in industry
Sector	- Mechanical Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- A graduate of the study program Smart Technologies in Industry is able to apply methods and techniques of process digitization in all branches of production and business in accordance with the principles of the Fourth Industrial Revolution (Industry 4.0 concept).
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/smart-technologie-v-priemysle0

Country	- Slovakia
Higher Educational institute	- "The Technical University of Košice - Faculty of Mechanical Engineering"
Course name	- Intelligent technologies in industry
Sector	- Mechanical Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 2 years
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- A graduate of the study program Intelligent Technologies in Industry is able to integrate methods and techniques of process digitization in all branches of production and business in accordance with the principles of the Fourth Industrial Revolution (Industry 4.0 concept).
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam

Language of course	- Slovak
Website	- https://www.portalvs.sk/en/studijny-program/inteligentne-technologie-v-priemysle0

Country	- Slovakia
Higher Educational institute	- "The University of Žilina - Faculty of Mechanical Engineering"
Course name	- Computer aided design and simulations in mechanical engineering
Sector	- Mechanical Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 2 years
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The master´s study programme Computer Aided Design and Simulations in Mechanical Engineering graduates are able to creatively use methods of calculation, simulation and verification of model solutions in the design of mechanical systems and their constructions.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam
Language of course	- Slovak - English
Website	- https://www.portalvs.sk/en/studijny-program/aplikovana-mechanika1

Country	- Turkiye
Higher Educational institute	- Izmir Institute of Technology
Course name	- Sustainable Energy and Environment
Sector	- Environmental Engineering
Level of studies (choose)	- Master Degree - Bachelor degree -
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving, Climate
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Estimation and evaluation of energy resources will be covered following the relationship between sustainable energy and sustainable development. Local, regional and global environmental effects of energy and sustainability metrics for energy systems will be investigated. Fossil fuels, nuclear power,

		and renewable energy resources will be addressed in terms of developed technology and sustainability metrics. Sustainability model applications will be discussed over current scientific literature.
Teaching methodology	-	Lecture
Evaluation methodologies	-	Exam - Assignment - Presentation
Language of course	-	English
Website	-	https://enve.iyte.edu.tr/en/master-science-m-s-program/

Country	-	Turkiye
Higher Educational institute	-	Pamukkale University
Course name	-	Biophysics
Sector	-	Biomedical Engineering
Level of studies (choose)	-	Master Degree - Bachelor degree - Master course
Length/duration	-	4 months
Keywords (select the keywords of the course)	-	Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving, Climate
Course fruition modality (choose one or more)	-	Blended
In case of online or blended modality please clarify which platform are you using		
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	-	Estimation and evaluation of energy resources will be covered following the relationship between sustainable energy and sustainable development. Local, regional and global environmental effects of energy and sustainability metrics for energy systems will be investigated. Fossil fuels, nuclear power, and renewable energy resources will be addressed in terms of developed technology and sustainability metrics. Sustainability model applications will be discussed over current scientific literature.
Teaching methodology	-	Lecture
Evaluation methodologies	-	Exam - Assignment - Presentation
Language of course	-	English
Website	-	https://enve.iyte.edu.tr/en/master-science-m-s-program/

Country	-	Turkiye
Higher Educational institute	-	Pamukkale University
Course name	-	Biophysics
Sector	-	Biomedical Engineering
Level of studies (choose)	-	Master Degree - Bachelor degree
Length/duration	-	4 months
Keywords (select the keywords of the course)	-	Creativity, Digital engineering, Analitycal Thinking, E-learning, Problem solving

Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Learning the basic physical concepts and laws encountered in medical sciences and physiological systems and used in understanding some biological mechanisms, gaining the ability to associate these laws and concepts with physiological systems.
Teaching methodology	- Tutorial - Groupwork
Evaluation methodologies	- Ecam - Assignment - Presentation
Language of course	- Turkish
Website	- https://www.pau.edu.tr/biyomedikalmuhendisligi

Country	- Turkiye
Higher Educational institute	- Akdeniz University
Course name	- Electromagnetic Field Theory
Sector	- Electrical-Electronics Engineering
Level of studies (choose)	- Master Degree - Bachelor degree - Master course
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity, Digital engineering, Artificial intelligence
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Develop knowledge in solving vector electrostatic problems in Cartesian, cylindrical and spherical coordinates. Explain electric and magnetic fields due to different source distributions. Defines the concepts of energy and power associated with static electromagnetic fields. Solve magnetic field intensity due to current distribution.
Teaching methodology	- Studio-based
Evaluation methodologies	- Emax - Presentation
Language of course	- English
Website	- https://eem.akdeniz.edu.tr/tr

Country	- Turkiye
Higher Educational institute	- Zonguldak Bulent Ecevit University
Course name	- Global Navigation Satellite Systems
Sector	- Geomatics Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking, problem solving

Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Global Navigation Satellite Systems, Satellite Based Augmentation Systems and their segments, properties of their signals, receiver and antenna systems, coordinate systems and time systems used in GNSS and SBAS. Observations and observables, error sources affecting observations, positioning and observing methods and accuracy criteria.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignment
Language of course	- English
Website	- https://geomatik.beun.edu.tr/

Country	- *Turkiye*
Higher Educational institute	- Hacettepe University
Course name	- Special Topics in Application of Nuclear Technique
Sector	- Nuclear Engineering
Level of studies (choose)	- Ph.D course
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking, Green transition
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- To have students gain in-depth information about application of nuclear techniques; examine current issues of interest; and study on improvements and/or development of alternatives
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- English
Website	- https://nuke.hacettepe.edu.tr/en

Country	- Turkiye
Higher Educational institute	- Iskenderun Technical University
Course name	- Carbonate Petrology
Sector	- Petrol and Natural Gases Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Analitycal Thinking, Problem solving, Green transition
Course fruition modality (choose one or more)	- In-class

In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Definition of carbonate components and textures, microscopic identification methods of minerals and grains, classification of carbonate rocks, definition of carbonate environments and reservoir properties of carbonates.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam
Language of course	- Turkish
Website	- https://iste.edu.tr/en/pdm

Country	- Turkiye
Higher Educational institute	- Tarsus University
Course name	- Aerospace Structures
Sector	- Aerospace Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Digital Enginneering, Artificial intelligence, Analitycal Thinking -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Main structural elements in aircraft. Loads on aircraft. V-N diagrams. Failure theories. Energy methods. Analysis of open and closed section stiffened box beams and torque boxes. Bending of unsymmetrical sections. Structural analysis of aircraft sub-structures: ribs, frames, wing box sections with cut-outs. Elastic stability: Column buckling, buckling of flat and curved panels, buckling analysis of stiffened closed section box beams, post-buckling behavior of stiffened flat and curved panels.
Teaching methodology	- Studio-based - Challenge-based
Evaluation methodologies	- Exam - Assignment
Language of course	- English
Website	- http://aero.tarsus.edu.tr/en

Country	- Turkiye
Higher Educational institute	- Yildiz Technical University
Course name	- Simulation Techniques
Sector	- Mathematical Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Artificial intelligence
Course fruition modality (choose one or more)	- In-class

In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The Simulation Techniques course is designed to complete the simulation modelling and analysis skill set of our students for them to be even better placed to run simulation projects of an industrial scale and, as such, will involve the use of additional commercial software products for simulation that are not covered by the introductory course.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam
Language of course	- English
Website	- https://mtm.yildiz.edu.tr/

Country	- Turkiye
Higher Educational institute	- Bursa Technical University
Course name	- Angiospermae
Sector	- Forest Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Analitycal Thinking, problem solving, Climate, Green transition -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- To enable students to identify broadleaved trees and shrubs in Turkey and to teach them distribution range, ecological features and the usage of their wood and non-wood product
Teaching methodology	- Studio-based - Groupwork
Evaluation methodologies	- Exam
Language of course	- Turkish
Website	- https://of.btu.edu.tr/en/orman

Country	- Turkiye
Higher Educational institute	- Mersin University
Course name	- MACHINE DYNAMICS
Sector	- Mechanical engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	

Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Static force analysis in machines, superposition principle, forces in compound mechanisms, friction forces, dynamic force studies, equations of motion and D'Alembert's principle, combined static-dynamic force studies, apparent work method, equivalence of mass systems, balancing of rotational and reciprocating masses, balancing machines, flywheels, swaying of shafts.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- Turkish
Website	- http://oibsr.mersin.edu.tr/bologna/?id=/course&program=323&sinif=3&sb_id=693075

Country	- Turkiye
Higher Educational institute	- Mersin University
Course name	- INTERNAL COMBUSTION ENGINES
Sector	- Mechanical engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Purpose: To teach the basic working principles of internal combustion engines and the main elements and functions of engines. Content: Thermal engines and thermodynamic engine cycles and efficiencies, engine characteristic curves, combustion, fuels and fuel systems, gasoline and diesel engines and calculations of their basic components.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignment
Language of course	- Turkish
Website	-

Country	- Turkiye
Higher Educational institute	- Mersin University
Course name	- MATERIAL SELECTION AND DESIGN
Sector	- Metallurgy Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Problem solving, Green transition
Course fruition modality (choose one or more)	- In-class

In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	
Teaching methodology	- Studio-based - Groupwork
Evaluation methodologies	- Exam - Assignment
Language of course	- Turkish
Website	- https://obs.mersin.edu.tr/oibs/bologna/index.aspx?lang=tr&curOp=showPac&curUnit=22&curSunit=1351#

Country	- Turkiye
Higher Educational institute	- Mersin University
Course name	- SURFACE TREATMENTS
Sector	- Metallurgy Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- With the developing technology, the need for materials that can be used/used in various industrial areas is also increasing. In terms of engineering, economical selection and design of materials suitable for service conditions is important. The aim of this course is to provide engineering candidates with a vision for the determination of material properties, design and selection by considering the costs, and to be able to choose the appropriate material by using software solutions related to material selection.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignment
Language of course	- Turkish
Website	- https://obs.mersin.edu.tr/oibs/bologna/index.aspx?lang=tr&curOp=showPac&curUnit=22&curSunit=1351#

Country	- Turkiye
Higher Educational institute	- Mersin University
Course name	- Introduction to programming
Sector	- COMPUTER ENGINEERING
Level of studies (choose)	- Bachelor degree
Length/duration	- 6 months

Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Artificial intelligence, Analitycal Thinking -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This course introduces the techniques of programming in C language to people who do not have any knowledge of programming. The aim of this course is to reveal the general concepts related to computer programming, the concept of algorithm, how to create algorithms and structural programming.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Assignment
Language of course	- Turkish
Website	- https://obs.mersin.edu.tr/oibs/bologna/index.aspx?lang=tr&curOp=showPac&curUnit=22&curSunit=1371#

Country	- Turkiye
Higher Educational institute	- Mersin University
Course name	- Logic Design
Sector	- COMPUTER ENGINEERING
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In class - online
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of this course is to provide students with the ability to analyze and design combined and sequential circuits and to consolidate this knowledge in the laboratory environment.
Teaching methodology	- Challenge-based
Evaluation methodologies	- Assignment - Presentation
Language of course	- Turkish
Website	- https://obs.mersin.edu.tr/oibs/bologna/index.aspx?lang=tr&curOp=showPac&curUnit=22&curSunit=1371#

Country	- Turkiye
Higher Educational institute	- Mersin University
Course name	- DATA STRUCTURES AND ALGORITHMS

Sector	- COMPUTER ENGINEERING
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Analysis of runtime and memory requirements of data structures and algorithms, analysis of basic sorting and search algorithms, analysis of sort and search algorithms in terms of memory requirement and runtime, linked lists, stack, queue, tree and graph data structures, and array and graph data structures of these data structures. pointer based programming. Programming applications with data structures.
Teaching methodology	- Studio-based - Challenge-based - Groupwork
Evaluation methodologies	- Exam - Assignment
Language of course	- Turkish
Website	- https://obs.mersin.edu.tr/oibs/bologna/index.aspx?lang=tr&curOp=showPac&curUnit=22&curSunit=1371#

Country	- Turkiye
Higher Educational institute	- Ege University
Course name	- FLUID MECHANICS
Sector	- Bioengineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 6 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Static and dynamic properties of fluids and their engineering applications
Teaching methodology	- Studio-based - Challenge-based
Evaluation methodologies	- Assignment - presentation
Language of course	- English

Website	- https://ebp.ege.edu.tr/DereceProgramlari/Detay/1/46/2641/932001

Country	- Turkiye
Higher Educational institute	- Ege University
Course name	- BIOANALYTICAL INSTRUMENTATION
Sector	- Bioengineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Analytical chemistry basic terms and information, instrumentation methods and measurement fundamentals, properties and requirements of analytical methods, atomic spectroscopy and its applications, molecular spectroscopy and its applications, electroanalytical chemistry methods and applications, separation methods and applications
Teaching methodology	- Studio-based - Lecture - Groupwork
Evaluation methodologies	- Exam
Language of course	- English
Website	- https://ebp.ege.edu.tr/DereceProgramlari/Detay/1/46/2641/932001

Country	- Turkiye
Higher Educational institute	- Ege University
Course name	- Mechatronics Systems
Sector	- Bioengineering
Level of studies (choose)	- Master Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, E-learning, Problem solving
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Background and general mechanical descriptions, spatial descriptions and transformations, manipulator kinematics, inverse manipulator kinematics, Jacobians: velocities and static forces. Basic electric and electronic components review, digital electronic components and circuits, digital storage, programmable logic devices, data converters, anolog and digital signal processing, digital actuators. continuous-drive actuators,

	power electronic devices and converters. common digital and analog sensors.
Teaching methodology	- Challenge-based - Lecture
Evaluation methodologies	- Assignment
Language of course	- English
Website	- https://ebp.ege.edu.tr/DereceProgramlari/Detay/2/61130/8230/932001

Country	- Turkiye
Higher Educational institute	- Ege University
Course name	- Mechatronics Engineering and Space Applications
Sector	- Bioengineering
Level of studies (choose)	- Master degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Definition of space, historical and technological developmets to date, basi Robotics and chronology, Basis space economics and politics, From point of Mechatronics Engineering view; a) Lunar and planetary research rovers and applications (visual, environmental, physical, chemical analysis sensors), b) Orbital applications, c) Cubesat applications, brief chracterization of materials that used in space applications and test stages, Asteroid Mining and Mechatronics Engineering applications, short look for the softwares used in Mechatronics Engineering, existing and future job opportunities in Mechatronics Engineering.
Teaching methodology	- Lecture
Evaluation methodologies	- Presentation
Language of course	- Turkish
Website	- https://ebp.ege.edu.tr/DereceProgramlari/Detay/2/61130/8230/932001

Country	- Turkiye
Higher Educational institute	- Ege University
Course name	- Product Development in Functional Garments
Sector	- Textile Engineering
Level of studies (choose)	- Ph.D course
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking, Green transition -
Course fruition modality (choose one or more)	- In-class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- With the help of increase in interdisciplinary studies in recent years, various features have been gained to the garments and the usage comfort is enhanced. The variety of materials used in clothing production makes the manufacturing methods different from conventional production. In this concept of this lecture, manufacturing stages of functional clothing, machinery and apparatus will be reviewed.
Teaching methodology	- Lecture - Groupwork
Evaluation methodologies	- Assignment - Presentation
Language of course	- Turkish
Website	- https://ebp.ege.edu.tr/DerecePrograml ari/Detay/3/60448/4689/932001

Country	- Turkiye
Higher Educational institute	- Ankara University
Course name	- Introduction to Computer Science
Sector	- Software engineering
Level of studies (choose)	- Master Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of the course is to introduce the basic and current knowledge areas of software engineering and to prepare students for further courses, studies and research areas.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- Turkish
Website	- http://bbs.ankara.edu.tr/Ders_Bilgileri.aspx?dno=1023080&bno=4523&bot=2165

Country	- Turkiye
Higher Educational institute	- Ankara University
Course name	- Petrogenesis
Sector	- Geological engineering
Level of studies (choose)	- Ph.D course
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of the course is to reveal the formation conditions of the rocks that make up the Earth's crust, to explain the effect and importance of the chemical composition of the rocks in the formation of rock texture, the geochemical origin, settlement and classification of the rocks in terms of magmatotectonics with examples from the world.
Teaching methodology	- Studio-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Turkish
Website	- http://bbs.ankara.edu.tr/Ders_Bilgileri.aspx?dno=993308&bno=3925&bot=1489

Country	- Turkiye
Higher Educational institute	- Ankara University
Course name	- Physics of Semiconductor Structures
Sector	- Physics engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Creativity, problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of the course is to inform students about semiconductor structures.
Teaching methodology	- Challenge-based - Groupwork
Evaluation methodologies	- Assignment

Language of course	- Presentation
	- Turkish
Website	- http://bbs.ankara.edu.tr/Ders_Bilgileri.aspx?dno=992553&bno=3918&bot=1477

Country	- Turkiye
Higher Educational institute	- Ankara University
Course name	- Mathematical Modelling İn Transport Phenomena
Sector	- Energy Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Analitycal Thinking, Creativity, problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of this course is to provide students with knowledge and skills on formulation, regulation, simplification, evaluation/interpretation and use of mathematical models in Energy Engineering.
Teaching methodology	- Challenge-based
Evaluation methodologies	- Exam - Assignment
Language of course	- English
Website	- http://bbs.ankara.edu.tr/Ders_Bilgileri.aspx?dno=991989&bno=4289&bot=1905

Country	- Turkiye
Higher Educational institute	- Ankara University
Course name	- Fuel Cell Technologies
Sector	- Energy Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Analitycal Thinking, Creativity, problem solving, Digital Enginneering
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of the course is to introduce different fuel cell technologies, to establish chemical, thermodynamic and electro-chemistry equivalences in fuel cells, to evaluate the working principles of different types of fuel cells, to materials used in fuel cells, to design and analysis of single cell and fuel cell stack, to provide information about fuel cell system design.

Teaching methodology	- Challenge-based
Evaluation methodologies	- Assignment - Presentation
Language of course	- English
Website	- http://bbs.ankara.edu.tr/Ders_Bilgileri.aspx?sdgNo=991988&dno=1052176&bno=4289&bot=1905

Country	- Turkiye
Higher Educational institute	- Ankara University
Course name	- Industrial Quality Control
Sector	- Agricultural Machinery and Technologies Engineering
Level of studies (choose)	- Ph.D course
Length/duration	- 3 months
Keywords (select the keywords of the course)	- Analitycal Thinking, Creativity, problem solving, green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The aim of the course is to give the students theoretical and practical information about the quality structure and applications of the sector that deals with the production of agricultural machinery in the industrial dimension, and to introduce the current applications.
Teaching methodology	- Studio based - Lecture
Evaluation methodologies	- Assignment - Presentation
Language of course	- Turkish
Website	- http://bbs.ankara.edu.tr/Ders_Bilgileri.aspx?dno=995656&bno=3941&bot=1518

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Master`s Degree in Industrial Computing and Robotic
Sector	- Computer and Robotic Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 1 year
Keywords (select the keywords of the course)	- Creativity - Digital Engineering - Artificial Intelligence - Analitycal Thinking - Problem Solving - Green transition
Course fruition modality (choose one or more)	- In class

In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- "The main objective of this Interuniversity Master's Degree between the University of Coruña and the University of La Laguna is to train researchers and professionals in the fields of industrial production environments and Information and Communication Technologies. - This Master covers the need for an interdisciplinary specialization in the common field of industrial production environments, and Information and Communication Technologies, both at the level of software and hardware tools: PLC's, robots, SCADA systems, field buses, simulation tools and other devices that are basic elements for the operation of current production systems."
Teaching methodology	- Studio based - Lecture - Tutorial - Gorupwork
Evaluation methodologies	- Exam - Assignement - Presentation
Language of course	- Spanish galician
Website	- https://estudos.udc.es/en/study/start/4538V01
	-
Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Embedded Systems
Sector	- Computer and Robotic Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 1 month
Keywords (select the keywords of the course)	- Creativity - Digital Engineering - Analitycal Thinking - Problem Solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Definition and types of embedded systems. Programming, configuration and apllication of an enbedded system. Acquisition and generation of signals in embedded systems. Connection of an embedded systems with an industrial system for its control.
Teaching methodology	- Studio based - Lecture - Groupwork - Challenge based
Evaluation methodologies	- Exam - Assignement - Presentation
Language of course	- Spanish galician

Website	https://estudos.udc.es/en/study/start/4538V01

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- High-level languages for industrial applications
Sector	- Computer and Robotic Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Engineering - Analitycal Thinking - Problem Solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Introduction to programming languages oriented to numerical calculation. Creating scripts and defining functions. Acquisition and generation of signals in high-level languages. Programming hardware systems using high-level programming languages. Connection of a real system and its control through high level languages.
Teaching methodology	- Studio based - Lecture - Groupwork - Challenge based
Evaluation methodologies	- Exam - Assignement - Presentation
Language of course	- Spanish galician
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=770&ensenyament=770538&assignatura=770538004&any_academic=2022_23&idioma_assig=

Country	- Spain
Higher Educational institute	- University of A Coruña
Course name	- Smart Robotics and Autonomous Systems
Sector	- Computer and Robotic Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Engineering - Analitycal Thinking - Problem Solving - Green transition - Artificial Intelligence
Course fruition modality (choose one or more)	- In class

In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Robots in industrial applications. Robots in open environments and their applications. Topologies, kinematics and principles of operation of different categories of robots. Sensorization and actuacion, principles and devices for each application. Intelligence and cognition, overview of principles and differences with traditional systems. Introduction to control systems and communications in intelligent robots. Principles of collaboration between robots and collaborative robotics.
Teaching methodology	- Studio based - Lecture - Groupwork - Challenge based
Evaluation methodologies	- Assignement - Presentation
Language of course	- Spanish galician
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=770&ensenyament=770538&assignatura=770538005&any_academic=2022_23&idioma_assig=&idioma=eng

Country	- Spain
Higher Educational institute	- Polytechnic University of Valencia
Course name	- Master's Degree in Automation and Industrial Computing
Sector	- Computer and automation Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 1 year
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The main objective of these Master's studies is to train specialists in these subjects so that they are capable of dealing with the design, implementation, operation and maintenance of automatic systems for the supervision, control, handling and management of production processes in which high performance dynamic behaviour, energy savings, pollution reduction or efficiency and safety are required.
Teaching methodology	- Studio-based - Challenge-based - Lecture

Evaluation methodologies	- Groupwork - Exam - Assignment - Presentation
Language of course	- Spanish
Website	- http://www.upv.es/titulaciones/MUAII/index-es.html

Country	- Spain
Higher Educational institute	- Polytechnic University of Valencia
Course name	- Computer Vision In Industry
Sector	- Computer Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 6 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The overall objective of the course is to introduce students to the general problem of computer vision (VxC), as a multidisciplinary tool for solving problems of automation of inspection processes in industrial environments and vision for robotics. For this purpose, the basic concepts of VxC are first introduced and the components of every vision system are briefly described: cameras, lenses, digitizers and lighting. Three blocks are then developed: A first block is dedicated to all the image processing and analysis techniques required to solve 2-dimensional VxC problems. Two blocks dedicated to 3D vision are developed below: Camera modeling and three-dimensional vision. Each block describes a broad set of techniques and algorithms that provide solutions to the sub-problems raised in each case. Finally, everything is put together showing examples of real applications in different industrial contexts.
Teaching methodology	- Studio-based - Challenge-based - Lecture - Groupwork
Evaluation methodologies	- Assignment
Language of course	- Spanish
Website	- http://www.upv.es/titulaciones/MUAII/menu_1013352c.html

Country	- Spain
Higher Educational institute	- Polytechnic University of Valencia
Course name	- Planification And Advanced Robot Control
Sector	- Computer Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 6 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- It is aimed at learning the basics ofmotion planning and dynamic controlof robotic systems. The basic concepts that will be addressed will be the following: a) Direct and reverse dynamic modeling of manipulator robots. b) Linear control and non-linear dynamic control of robots c) Planning of movements of robotic systems
Teaching methodology	- Studio-based - Challenge-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment
Language of course	- Spanish
Website	- http://www.upv.es/titulaciones/MUAII/menu_1013352c.html

Country	- Spain
Higher Educational institute	- Polytechnic University of Catalonia
Course name	- Master's degree in automatic control and robotics
Sector	- Robotic and automation Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 2 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking

	- Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This master`s degree focuses on engineering in the fields of automatic control and robotics. It combines knowledge of industrial engineering, such as electrical and mechanical engineering, industrial electronics and some aspects of artificial intelligence.
Teaching methodology	- Studio-based - Lecture - Groupwork - Other
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- English
Website	- https://mar.masters.upc.edu/en

Country	- Spain
Higher Educational institute	- Polytechnic University of Catalonia
Course name	- Industrial Scheduling
Sector	- Industrial Organization Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 6 months
Keywords (select the keywords of the course)	- Creativity - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Demand forecasting. Stocks management. Production planning. Operations programming.
Teaching methodology	- Studio-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation

Language of course	- English
Website	- https://guiadocent.etseib.upc.edu/guiadocent/profile/default/action/fitxa.php?code=240AR016&lang=en&degree=864

Country	- Spain
Higher Educational institute	- Polytechnic University of Catalonia
Course name	- Mobile Robots &Navigation
Sector	- Robotic Engeneering
Level of studies (choose)	- Master Degree
Length/duration	- 6 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The students will acquire theoretical and practical knowledge in Mobile Robotics techniques by the presentation of real applications that illustrate the interest and needs of the presented techniques. Mandatory Contents: - Probabilistic techniques for mobile robotics. - Stochastic estimation in mobile robotics. - Localization, maps generation and navigation
Teaching methodology	- Studio-based - Lecture - Groupwork - Other
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- English
Website	- https://guiadocent.etseib.upc.edu/guiadocent/profile/default/action/fitxa.php?code=240AR023&lang=en&degree=864

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Degree in electrical engineering
Sector	- Electrical engineering

Level of studies (choose)	- Bachelor degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving - Climate - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- It is the degree that allows dual training, in such a way that the fourth and last year of the degree can be taken with an academic training module or with one of paid training in a company. In the degree, in addition to the basic subjects (physics, calculus, chemistry, etc.), subjects such as materials science, thermodynamics, resistance of materials, facilities, circuits, plants, automation, transport of electrical energy, automation, graphic engineering or technical office are studied.
Teaching methodology	- Studio-based - Challenge-based - Lecture - Tutorial - Groupwork - Other
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish - Galician
Website	- https://estudos.udc.es/en/study/detail/770G02V02

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Engineering Drawing
Sector	- Engineering Graphics
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Problem solving - Green transition

Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Spatial vision development techniques. Metric and descriptive geometry. Graphic representation systems. Introduction to standardization. Computer aided drafting.
Teaching methodology	- Challenge-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- - https://guiadocente.udc.es/guia_docent/index.php?centre= - 770&ensenyament=770G02&assignatura=770G02005&fi - txa_apartat=7&any_academic=2022_23&idioma_assig=&any_ac ademic=2022_23

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Technical Office
Sector	
Level of studies (choose)	- Bachelor degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Analitycal Thinking - Problem solving - Climate - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- It is about developing the functions of a Technical Office and developing an Engineering Project. It is a subject where the methods, techniques, regulations, etc., used in the Technical Office are contemplated, among which the elaboration of the Engineering Project receives special attention.
Teaching methodology	- Studio-based - Lecture - Turoial - Groupwork

Evaluation methodologies	- Other - Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=770&ensenyament=770G02&assignatura=770G02131&any_academic=2022_23&idioma_assig=&idioma=eng&idioma=cast

Country	- Spain
Higher Educational institute	- Polytechnic University of Madrid
Course name	- Degree in electrical engineering
Sector	- Electrical engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The objective of this subject is thestudy of all these inefficiencies andabnormal operating regimes, ofelectrical installations and systems, so that techniques and devices are proposed that allow us to improve the efficiency of the facilities.
Teaching methodology	- Studio-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=770&ensenyament=770G02&assignatura=770G02136&any_academic=2022_23&idioma=cast&idioma_assig=cas

Country	- Spain
Higher Educational institute	- Polytechnic University of Madrid
Course name	- Industrial Automation
Sector	- Automation engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Automation and programming. Programmable automata programming (PLCs). Practical application of actuators and sensors. Design of manufacturing systems. Communication in industrial plants. Simulation of industrial processes
Teaching methodology	- Studio-based - Challenge-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.upm.es/comun_gauss/publico/guias/2022-23/1S/GA_56IE_565000256_1S_2022-23.pdf

Country	- Spain
Higher Educational institute	- Polytechnic University of Madrid
Course name	- High voltage underground lines and transformation centers
Sector	- Electrical engineering
Level of studies (choose)	- BAchelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving

Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- In this subject the student will learn the design and selection of insulated cables of measurement and high voltage to carry out projects of underground electrical networks, as well as different types of transformation centers. It will start in the calculation of three-phase short-circuit currents in MT networks.
Teaching methodology	- Studio-based - Challenge-based - Lecture - Groupwork - Other
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.upm.es/comun_gauss/publico/guias/2022-23/1S/GA_56IE_565000257_1S_2022-23.pdf

Country	- Spain
Higher Educational institute	- University of País Vasco
Course name	- Degree in electrical engineering
Sector	- Electrical engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This degree specializes in high voltageelectrical circuits and in de signingsystems for the generation, distributionand conversion of electrical energy, to power and activate equipment, electricity networks of buildings and cities, among others.
Teaching methodology	- Studio-based - Lecture - Groupwork

Evaluation methodologies	- Tutorial - Other
	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.ehu.eus/es/web/graduak/grado-ingenieria-electrica-bizkaia

Country	- Spain
Higher Educational institute	- University of País Vasco
Course name	- Project Management
Sector	- Industrial Organization Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The engineering. General Project Theory. Engineering projects and their standardized documentation. Project Managment.
Teaching methodology	- Studio-based - Lecture - Groupwork - Tutorial
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.ehu.eus/es/web/graduak/grado-ingenieria-electrica-bizkaia/creditos-y-asignaturas?p_redirect=consultaAsignatura&p_cod_proceso=egr&p_anyo_acad=20220&p_ciclo=X&p_curso=4&p_cod_asignatura=27684

Country	- Spain
Higher Educational institute	- University of País Vasco

Course name	- Simulation and Testing of Electrical Machines
Sector	- Electrical engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Develop different tests and simulations with electrical machines and deepenthe knowledge of both electrical machines and different software.
Teaching methodology	- Studio-based - Lecture - Groupwork - Other
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.ehu.eus/es/web/graduak/grado-ingenieria-electrica-bizkaia/creditos-y-asignaturas?p_redirect=consultaAsignatura&p_cod_proceso=egr&p_anyo_acad=20220&p_ciclo=X&p_curso=4&p_cod_asignatura=27731

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Mechanical Engeneering
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving

	- Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- All engineering degrees share a similar training system that promotes the support of specific knowledge on a solid basic training. This is perhaps one of the fundamental differences between engineering and middle grade studies (professional training). For this reason, among the own contents there are basic subjects that occupied the first years and specific or specific to the degree. Thus, graduates in mechanical engineering acquired knowledge in the theory of machines and mechanisms, vehicle dynamics, machine design and testing, electronics, fluid-mechanical systems and machines, automation and control methods, calculation and design of industrial structures and constructions, thermal engineering. , resistance of materials, production and manufacturing systems, environmental technologies and sustainability, business organization, project organization and management, graphic engineering techniques, elasticity and resistance of materials, materials engineering, manufacturing processes, metrology and quality control . To support this specific knowledge, the graduate in mechanical engineering receives basic training on the resolution of mathematical problems that may arise in engineering, on the general laws of mechanics, thermodynamics and their application to solve engineering problems, on the use and programming of computers, on the basic principles of general, organic and inorganic chemistry and their applications in engineering, on graphic representation techniques, both by traditional methods of metric and descriptive geometry, as well as by applications of computer-aided design, about the concept of business and its institutional and legal framework, about applied thermodynamics and heat transfer, about the basic principles of fluid mechanics and their application to solving problems in the field of engineering, on the fundamentals of science, technology and chemistry of materials and on the principles of circuit theory and electrical machines.
Teaching methodology	- Studio-based - Tutorial - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish - Galician
Website	

	https://estudos.udc.es/es/study/start/730G03V01

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Machine Technology
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Synthesis of mechanisms. Creep. Fatigue and fracture. Contact stresses. Friction, wear and lubrication. Machine dynamics.
Teaching methodology	- Studio-based - Challenge-based - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=730&ensenyament=730G03&assignatura=730G03028&idioma=cast&any_academic=2022_23

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Manufacturing Technologies
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months

Keywords (select the keywords of the course)	- Creativity - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Manufacturing engineering. Introduction to manufacturing engineering. Manufacturing processes and their technological characteristics. Introduction to manufacturing processes Characteristics of manufacturing processes.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=730&ensenyament=730G03&assignatura=730G03022&fitxa_apartat=4&any_academic=2022_23&idioma=cast&idioma_assig=cast

Country	- Spain
Higher Educational institute	- Univesity of A Coruña
Course name	- Interdisciplinary Project I
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Concepts of design and calculation in projects I. Concepts of design and calculation in projects I. Project management concepts. Project management concepts. Knowledge of the product development process. Knowledge of the product development process. Capacity for teamwork. Capacity for teamwork. Graphic, oral and written communication. Graphic, oral and written communication.

Teaching methodology	- Studio-based - Challenge-based - Lecture - Groupwork - Tutorial - Other
Evaluation methodologies	- Assignment - Presentation
Language of course	- Spanish
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=730&ensenyament=730G03&assignatura=730G03079&idioma=cast&any_academic=2022_23

Country	- Spain
Higher Educational institute	- Technical University of Madrid
Course name	- Mechanical Engeneering
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This degree aims to train professionals capable of: Drawing up and implementing technical projects, expert appraisals and reports in the field of Mechanical Engineering. Directing and coordinating production, operation and maintenance activities in their chosen field. Directing all types of industries or operations associated with mechanical engineering, and managing activities associated with bringing the products of such companies onto the market. Acquiring skills associated with quality, the environment and workplace hazard prevention necessary to prepare specific plans for management, coordination and monitoring of these factors; undertaking measurements, calculations, valuations, assessments, expert appraisals and studies, and preparing reports with full responsibility within the integrated systems of a company.
Teaching methodology	- Studio-based

Evaluation methodologies	- Tutorial - Lecture - Groupwork - Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.etsidi.upm.es/Estudiantes/EstudiosTitulaciones/ETTitulosGrado/ETTitulosOficialesGrado/GradIngMecanica

Country	- Spain
Higher Educational institute	- Technical University of Madrid
Course name	- Computer Aided Manufacturing
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Introduction to automatic manufacturing systems. Analysis of milling operations. Manual programming of CNC milling machine. Automatic programming of CNC milling machine.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignment
Language of course	- Spanish
Website	- https://www.upm.es/comun_gauss/publico/guias/2022-23/2S/GA_56IM_565000367_2S_2022-23.pdf

Country	- Spain
Higher Educational institute	- Technical University of Valencia
Course name	- Mechanical Engeneering
Sector	- Mechanical Engeneering

Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Artificial intelligence - Analitycal Thinking - Problem solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Mechanical Engineering studies consist of a basic training module; a training module shared by industrial branch; a specific training module in mechanics and a final module specific to the student's choice. The Degree in Mechanical Engineering enables students to exercise the profession industrial engineer. This degree offers the following options: Vehicle Design and Engineering; Design and Manufacture of Machines and Prototypes; Project Engineering; Design and Calculation with Materials; Polymeric and Compounds.
Teaching methodology	- Studio-based - Tutorial - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.upv.es/titulaciones/GIM-A/indexc.html

Country	- Spain
Higher Educational institute	- Technical University of Valencia
Course name	- Mechanical Design Engineering
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class

In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Introduction to parametric modelling. Work environment and visualization. Sketching. Design operations. Surfaces. Assemblies of parts. Generation of plans from 3d geometry.
Teaching methodology	- Studio-based - Challenge based - Groupwork
Evaluation methodologies	- Exam - Assignment
Language of course	- Spanish
Website	- https://www.upv.es/pls/oalu/sic_asi.Busca_Asi?p_codi=12664&p_caca=2022&P_IDIOMA=c&P_VISTA=MSE&p_tit=170

Country	- Spain
Higher Educational institute	- Technical University of Valencia
Course name	- Manufacturing Process Engineering
Sector	- Mechanical Engeneering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Metrology and quality control. Forming processes.
Teaching methodology	- Studio-based
Evaluation methodologies	- Exam - Assignment
Language of course	- Spanish
Website	- https://www.upv.es/pls/oalu/sic_asi.Busca_Asi?p_codi=12656&p_caca=2022&P_IDIOMA=c&P_VISTA=MSE&p_tit=170

Country	- Spain
Higher Educational institute	- Polithecnic University of Valencia
Course name	- Advanced Conceptual Design for Industrial Product Development
Sector	- Industrial Design Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The course will focus on the study of systemic methodologies (ID-Think), for the development of industrial products based on Imagenary Design, the Design ThinKing and the New Models for Innovation in Product Design. The design process will be worked on from the phase corresponding to the capture of the voice of the client, analysis of the fundamental variables of conceptual design, creativity techniques and the study of the requirements for the design concept, with the aim of generating innovative products that are viable from a business and technical point of view. Development of functional, ergonomic and formal geometric models of the products. Creation of the design space. 3D thinking. Designing concepts. carrying out tasks for the investigation of products and their applications. Virtual presentations (exhibition).scientific writing (posters and articles for magazines).work exhibitions (exhibition halls and design events).
Teaching methodology	- Studio-based - Challenge based - Lecture
Evaluation methodologies	- Assignment - Presentation
Language of course	- Spanish
Website	- https://www.upv.es/titulaciones/GIDIDP/menu_1012938i.html

Country	- Spain
Higher Educational institute	- Polithecnic University of Valencia
Course name	- Master's Degree in Design Engineering

Sector	- Industrial Design Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 1,25 year
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This master's degree is aimed at training university postgraduates interested in obtaining a high level of specialisation and skills in processes and tools that promote innovation, improvement and creativity in the resolution of projects on different scales and for different types of product. The different subjects offered in this master's degree constitute an indispensable conceptual and instrumental update for design in the face of the challenges posed by society, the environment and the demands of contemporary business. On the left are the projects developed in the master's degree programme. The first of these corresponds to the Coe Ted project, winner of the ETSID first prize for Inclusive Design 2010. The objectives of the master's degree are focused on training postgraduates and researchers specialising in the following areas: design and innovation, new product management, updating of market analysis techniques, decision-making, rapid product development and optimisation of corporate communication techniques of companies.
Teaching methodology	- Studio-based - Lecture
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish (Valencian)
Website	- http://www.upv.es/titulaciones/MUID/

Country	- Spain
Higher Educational institute	- Polithecnic University of Valencia
Course name	- Ecodesign
Sector	- Industrial Design Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The Ecodesign subject is part of the Master's Degree in Design Engineering and aims to make students consider the role of design with respect to environmental, health and safety objectives throughout the complete life cycle of the product and process. Starting with an initial analysis of the most well-known environmental concepts such as Sustainable Development, Eco-efficiency, Industrial Ecology, students will apply one of the most widespread Ecodesign methodologies in Europe. Specific techniques and tools will also be applied, such as Life Cycle Analysis and Design for Recycling and for Disassembly, and the importance of the application of ecodesign in products for manufacturing companies will be seen. - This subject enables students to learn about and apply environmental and sustainability criteria in the conception and development phase of new products, in order to be able to adopt measures that reduce environmental and social impacts in the different phases of their life cycle, from the selection of raw materials, through manufacturing, to their elimination. This will ensure that students consider the environmental factor as another requirement of their product and with the same importance as other factors such as quality, cost or safety. The contents of this subject will also lead students to consider all those environmental impacts inherited from previous stages to which the product has been subjected. For example, the manufacture of the different components that form it, the amount of water and energy necessary for its manufacture and the obtaining of the raw materials for its elaboration. From the point of view of the Sustainable Development Goals (SDGs), this subject works specifically on goals 9 (Industry, Innovation and Infrastructure) and 12 (Responsible Production and Consumption).

Teaching methodology	- Studio-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment
Language of course	- Spanish
Website	- http://www.upv.es/pls/oalu/sic_asi.Busca_Asi?p_codi=32505&p_caca=2022&P_IDIOMA=i&p_vista=MSE&p_tit=2160

Country	- Spain
Higher Educational institute	- Polithecnic University of Valencia
Course name	- Doctoral Program in Design, Manufacturing and Management of Industrial Projects
Sector	- Industrial Design Engineering
Level of studies (choose)	- Ph. D course
Length/duration	- 3 years
Keywords (select the keywords of the course)	- Digital Enginneering - Analitycal Thinking - Problem solving - Green transition
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Description is not available
Teaching methodology	- Challenge-based - Individual research
Evaluation methodologies	- Assignment - Presentation
Language of course	- Spanish - English
Website	- http://www.upv.es/entidades/EDOCTORADO/info/1004540normalc.html

Country	- Spain
Higher Educational institute	- Polithecnic University of Madrid
Course name	- Degree in Industrial Design and Product Development Engineering
Sector	- Industrial Design Engineering

Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- To train professionals capable of: Designing, directing and coordinating all the activities associated with managing the entire process in the life of a product. Applying industrial design innovatively to generate added value for products and increase their competitiveness by highlighting the brand and range of design and providing new solutions for use, assembly, maintenance and repair and new responses to consumer functions or requirements. Applying new methods and theories and adapting to new situations, on the basis of wide-ranging training in fundamental and technological areas.
Teaching methodology	- Studio-based - Challenge-based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish
Website	- https://www.etsidi.upm.es/Estudiantes/EstudiosTitulaciones/ETTitulosGrado/ETTitulosOficialesGrado/GradIngDisInd

Country	- Spain
Higher Educational institute	- Polithecnic University of Madrid
Course name	- Design Methodology and Creativity
Sector	- Industrial Design Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Analitycal Thinking

Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The course exposes the different methodologies and tools available in the development of the industrial design process, with special emphasis on problem-solving tools and the promotion of creativity. process, with special emphasis on problem-solving tools and the promotion of creativity. In addition, as a practical complement, the course develops the student's ability to approach the basic design process of an innovative product or service process of designing an innovative product or service by developing a design project to be presented at an international design competition. an international design competition.
Teaching methodology	- Lecture - Groupwork
Evaluation methodologies	- Exam - Presentation
Language of course	- Spanish
Website	- https://www.upm.es/comun_gauss/publico/guias/2022-23/2S/GA_56DD_565000543_2S_2022-23.pdf

Country	- Spain
Higher Educational institute	- Polithecnic University of Madrid
Course name	- Design Workshop I
Sector	- Industrial Design Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Design Workshop I is aimed at introducing the student to the processes necessary for the realisation of a design project, from its conception to its presentation.

Teaching methodology	- Studio-based - Challenge based - Lecture - Groupwork
Evaluation methodologies	- Assignment - Presentation
Language of course	- Spanish
Website	- https://www.upm.es/comun_gauss/publico/guias/2022-23/1S/GA_56DD_565000557_1S_2022-23.pdf

Country	- Spain
Higher Educational institute	- Polithecnic University of Madrid
Course name	- Master's Degree in Industrial Design Engineering
Sector	- Industrial Design Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 1 year
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The purpose of this Master's Degree is advanced training and qualification in technological and engineering applications in the field of industrial design. It provides a global understanding of the life phases of a product, especially those that provide greater added value, develops skills to integrate design and manufacturing, provides the necessary knowledge to manage and plan the production of new products, their launch and marketing, as well as the ability to adapt and innovate in a changing industrial world.
Teaching methodology	- Studio-based - Challenge based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish - English
Website	- https://www.etsidi.upm.es/Estudiantes/EstudiosTitulaciones/ETTitulosPostgrado/ETTitulosOficialesMaster/M%c3%a1ster%20en%20Ingenier%c3%ada%20en%20Dise%c3%b1o%20Industrial

Country	- Spain
Higher Educational institute	- Polithecnic University of Madrid
Course name	- Ecoeffciciency And Ecoinnovation
Sector	- Industrial Design Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Introduction. Ecodesign, ecoefficiency and ecoinnovation in Industrial Design. - R+D+i integrated in the different stages of the life cycle of products. - Entrepreneurship and business models. - Projects and real cases of eco-innovative industrial designs.
Teaching methodology	- Studio-based - Challenge based - Lecture - Groupwork
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- English
Website	- https://www.upm.es/comun_gauss/publico/guias/2022-23/2S/GA_56AC_563000074_2S_2022-23.pdf

Country	- Spain
Higher Educational institute	- Polithecnic University of Madrid
Course name	- PhD Programme in Production Engineering and Industrial Design
Sector	- Industrial Design Engineering
Level of studies (choose)	- Ph. D. Course
Length/duration	- 3 years

Keywords (select the keywords of the course)	- Digital Enginneering - Analitycal Thinking - Problem solving
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Current lines of research in the field of Production Engineering and Industrial Design include the design and development of supply, manufacturing and distribution processes and systems, quality management, life cycle analysis, energy efficiency, modelling and optimisation of complex production systems, process automation and the incorporation of intelligent systems, sensorisation, monitoring and diagnosis of production processes, knowledge of polymeric, metallic, advanced composites and nanomaterials, etc. Advances in these areas are the driving forces for the evolution from a traditional production model to the so-called Industry 4.0, which will allow faster, more efficient and more flexible processes for the manufacture of higher quality products at a lower cost. The PhD Programme in Production Engineering and Industrial Design of the UPM aims to provide students with the knowledge, skills, tools and qualifications necessary to innovate and provide different solutions to transform production systems towards the new demands and challenges of today's society: sustainability, energy efficiency, profitability, minimisation of impact, interconnectivity, etc. To achieve these objectives, the programme provides students with the means and opportunities to finally take the initiative in researching new options in a world in continuous technological and social change. The different lines of research developed by the ETSIDI groups in the fields of mechanical engineering, chemical engineering, energy engineering, clean production and environment, metrology, materials, electrical engineering, industrial design engineering, additive or automatic manufacturing and robotics, among others, converge naturally in this PhD Programme in the field of Production Engineering and Industrial Design, which draws on all of them.
Teaching methodology	- Lecture - Individual research
Evaluation methodologies	- Assignment - Presentation
Language of course	- Spanish - English
Website	- https://www.etsidi.upm.es/Estudiantes/EstudiosTitulaciones/Doctorado/Programa%20de%20Doctorado%20en%20Ingenier%C3%ADa%20de%20la%20Producto%20y%20Dise%C3%B1o%20Industrial

Country	- Spain
Higher Educational institute	- University of A Coruña
Course name	- Master´s degree in energy efficiency and sustainability
Sector	- Energy and sustainability
Level of studies (choose)	- Master Degree
Length/duration	- 1 year
Keywords (select the keywords of the course)	- Digital Enginneering - Analitycal Thinking - E-learning - Problem solving - Climate - Green transition
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This master's degree offers the possibility of acquiring the necessary knowledge and experience on the definition, design, exploitation and management of renewable energies with a minimum impact and guaranteeing sustainable development. Knowledge will be acquired on energy auditing, energy rating of buildings, bioclimatic architecture, definition of intelligent and sustainable buildings, BIM, installation legislation, electricity markets and pricing, micro-grids, smart grids, electric mobility, among others. In addition, the necessary capacities will be provided to carry out energy policies, investment analyzes and, of course, all the management of projects based on energy efficiency or renewable energies from a sustainable point of view. To ensure being able to compete in the current and future labor market in this thriving and growing field of professional activity. Graduates will be able to: Advise, guide and offer optimal solutions to optimize resources and achieve efficiency and energy use in any sector. Evaluate the application of emerging technologies in the field of energy and the environment under criteria such as efficiency, sustainability or cooperation. Continue their research training and write a doctoral thesis.
Teaching methodology	- Not available
Evaluation methodologies	- Not available
Language of course	- Spanish (Galician)
Website	- https://estudos.udc.es/en/study/detail/4547V01

Country	- Spain
Higher Educational institute	- University of A Coruña
Course name	- Solar systems
Sector	- Energy and sustainability
Level of studies (choose)	- MAster Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Digital Enginneering - Analitycal Thinking - Problem solving - E-learning - Climate
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The learning outcomes of this subject are evaluating the solar resource, knowing solar thermal and photovoltaic installations, their components and associated maintenance procedures, assessing the feasibility of solar installations and knowing the regulations applicable to solar installations
Teaching methodology	- Tutorial - Challenge based - Lecture - Groupwork - Lectures given by professionals from the field
Evaluation methodologies	- Exam - Assignment - Presentation
Language of course	- Spanish - Galician
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=730&ensenyament=730547&assignatura=730547002&any_academic=2022_23&idioma=cast&idioma=eng

Country	- Spain
Higher Educational institute	- University of A Coruña
Course name	- Wind, hydraulic and marine systems
Sector	- Energy and sustainability
Level of studies (choose)	- Master Degree
Length/duration	- 4 months

Keywords (select the keywords of the course)	- Digital Enginneering - Analitycal Thinking - Problem solving - E-learning - Climate
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Know the fundamentals that govern the behavior of the wind from a physical point of view, and familiarize the student with the conversion process of wind, hydraulic and marine energy. Know the elements and devices of a wind, hydraulic and marine generation system, as well as its characteristics and operating principles. Learn to determine the response of a wind system, especially from the point of view of energy generation, as well as determine the factors that influence said response and its impact on the conversion into electrical energy. Know the different techniques and technological processes for the transformation of wind, hydraulic and marine energy into electrical energy. Allow access to knowledge of the influence that the different processes and systems used have on the Environment, as well as the mechanisms to limit said influence. Train the student in the techniques for the study and development of wind, hydraulic and marine energy projects that can be used in the professional field. Provide the student with the knowledge and skills necessary to be able to carry out specific tasks in the field of wind, hydraulic and marine energy within the scope of companies in the sector
Teaching methodology	- Challenge based - Lecture - Tutorial - Guest lecture / keynote speech
Evaluation methodologies	- Assignment - Exam
Language of course	- Spanish - Galician
Website	- https://guiadocente.udc.es/guia_docent/index.php?centre=730&ensenyament=730547&assignatura=730547005&any_academic=2022_23&idioma=cast&idioma=eng

Country	- Spain
Higher Educational institute	- Charles III University (Madrid)
Course name	- Master in renewable energy in electrical systems
Sector	- Energy and sustainability
Level of studies (choose)	- Master Degree
Length/duration	- 1,5 year

Keywords (select the keywords of the course)	- Digital Enginneering - Analitycal Thinking - Problem solving - E-learning - Climate - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The subject pursues that students get to know the necessary knowledge to use drawing as a means to solve problems graphically throughout their professional lives, understanding the importance that this subject has as a language of communication. Acquire adequate knowledge of Renewable Energies: resources andtechnology. They should know in more detail those most frequent energies. In our environment: wind energy, solar thermal energy and photovoltaic solar energy. Acquire adequate knowledge of electrical engineering and areas that here have application. Acquire adequate knowledge of Industrial Project Management and renewable energy companies. Project, calculate and design products, processes, facilities and plants. Direct, plan and supervise multidisciplinary teams that design or execute renewable energy projects. Conduct research, development and innovation in products, processes and methods in relation to renewable energies. Carry out strategic planning and apply it to renewable energy systems. Technically and economically manage projects, facilities, plants, companies and technology centres related to renewable energies. Follow the technological evolution of renewable energies and have prospective knowledge of this evolution.
Teaching methodology	- Not available
Evaluation methodologies	- Not available
Language of course	- Spanish
Website	- https://www.uc3m.es/master/renewable-energy

Country	- Spain
Higher Educational institute	- Charles III University (Madrid)
Course name	- Photovoltaic solar energy
Sector	- Energy and sustainability
Level of studies (choose)	- Master Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Climate

	- Green transition - Problem solving
Course fruition modality (choose one or more)	
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Acquire adequate knowledge of renewable energies: resources and technology. They should know in more detail those most frequent energies in our environment: wind energy, solar thermal energy and photovoltaic solar energy. Project, calculate and design renewable energy products, processes, facilities and plants. Carry out research, development and innovation in products, processes and methods in relation to renewable energies. Follow the technological evolution of renewable energies and have prospective knowledge of this evolution. Have knowledge of the social and energy needs of renewable energies, as well as the advantages and disadvantages of photovoltaic solar energy in relation to those needs. Have knowledge of the basic technology associated with the use of the sun for electricity generation (constituent parts) and its evolution. Know how to project, calculate and size photovoltaic solar energy installations: students who pass this subject will be able to make a selection, analysis, and dimensioning of photovoltaic systems both those connected to the electricity supply network and autonomous photovoltaic systems. They will use or design specific software for each case. They will also know how to select the most appropriate components for each application within those commercially available. Conduct research, development and innovation in products, processes and methods in relation to photovoltaic solar energy. Technically and economically manage projects, facilities, plants, companies and technology centers related to photovoltaic solar energy. Have knowledge of the regulations that directly affect the use of photovoltaic solar energy. Acquire the ability to develop in practice a specific photovoltaic solar energy project: from the use of device selection, use of regulations, catalogs and commercial technical documentation, to its implementation in the field, using computer programs. Follow the technological evolution of photovoltaic solar energy and have prospective knowledge of this evolution. Knowledge of the social and energy needs of photovoltaic solar energy, as well as its advantages and disadvantages. Understanding the constituent parts of photovoltaic plants. - Ability to assess the solar resource at a given site, as well as to determine the environmental impact of the renewable energy project.
Teaching methodology	- Challenge based - Lecture - Groupwork
Evaluation methodologies	- Assignment
Language of course	- Spanish

Website	- https://aplicaciones.uc3m.es/cpa/generaFicha?est=266&anio=2022&plan=276&asig=16174&idioma=2

Country	- Spain
Higher Educational institute	- UPV/EHU Basque Country University
Course name	- Degree in Renewable Energy Engineering
Sector	- Energy and sustainability
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 years
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - E-learning - Climate - Green transition
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The Degree in Renewable Energy Engineering will train you as an interdisciplinary professional with solid knowledge in the basic and common subjects of industrial engineering and in the specific technologies of renewable energies. You will receive a solid theoretical and practical training in the fields of hydraulic, wind (onshore and marine), solar (photovoltaic, thermal, thermoelectric), geothermal, marine, as well as bioenergy, electric vehicles, etc. In addition, you will know the electrical, electronic and mechanical devices that are associated with renewable energy technologies, and also the measures of saving and efficient use of energy and their applications in transport, building or industry in general. You will acquire the necessary technical knowledge to carry out projects related to the generation, transport, distribution and storage of energy.
Teaching methodology	- Non available
Evaluation methodologies	- Non available
Language of course	- Spanish - Euskera
Website	- http://www.upv.es/titulaciones/MUID/

Country	- Spain
Higher Educational institute	- UPV/EHU Basque Country University
Course name	- Graphic Expression and Computer Aided Design

Sector	- Industrial Design Engineering
Level of studies (choose)	- Bachelor Degree
Length/duration	- 4 months
Keywords (select the keywords of the course)	- Creativity - Digital Enginneering - Analitycal Thinking - Problem solving green transition -
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The subject pursues that students get to know the necessary knowledge to use drawing as a means to solve problems graphically throughout their professional lives, understanding the importance that this subject has as a language of communication. Through its contents, it is intended that students acquire the ability to see space and knowledge of graphic representation techniques, both by traditional methods of geometry, and through computer-aided design applications.
Teaching methodology	- Studio-based - Challenge based - Tutorial
Evaluation methodologies	- Exam
Language of course	- Spanish - Euskera
Website	- http://www.upv.es/pls/oalu/sic_asi.Busca_Asi?p_codi=32505&p_caca=2022&P_IDIOMA=i&p_vista=MSE&p_tit=2160

Country	- Greece
Higher Educational institute	- IHU
Course name	- Computer Programming I
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving -
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course	- The course aims to provide the student with basic programming knowledge.

with a detail on how creative engineering it's faced inside the educational courses	The focus is on procedural programming, the main elements of which are the development of the program and the repeated use of subroutines, which either perform general tasks or address a part of the overall problem. The aim is to understand the principles of programming and to consolidate its philosophy, using the high level programming language C. After attending the course, students should: - Know and understand the basics of programming in the C programming language. - Analyze programming problems that require the use of variables, constants,moperators, iterations, and branches. - Perform data entry-exit procedures. - Create and manage multidimensional arrays, strings and character arrays. - They create their own data types. - Utilize the ability to write code, compile and run a program that provides a complete development environment (IDE, free software). - Understand and implement simple data management algorithms.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Computer Programming II
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	The course aims to introduce the student to the logic of structured programming. The main aims are language constructions (repetition and branching sentences), functions, complex data types, input -output for files, direct access to memory through pointers and the creation of interconnected programs using headers. The goal is to understand the design of integrated programs, using the high level programming language C. After attending the course, students should:

	- Know and understand the use of programming functions in the programming language C. - They are familiar with the properties of pointers and their applications in calling function values, dynamic memory assignment and arrays and string management. - Know the properties and operation of binary files and text files, as well as the random access of binary files. - Implement complex algorithms using recursive programming functions. - Create interface and header files, as well as divide the code into individual files - Utilize the ability to write code, compile and execute multiple programs provided by a comprehensive development environment (IDE, free software)
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Computer Networks
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Analitycal Thinking, E-learning
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	"The course provides an introduction to data networks. The basic principles and practices in computer networks are presented. Students are introduced to the concepts of: computer architectures,services and protocols, encapsulation,packet switching, data encoding, the data link layer,medium access techniques,Local area networks technologies (Ethernet, Token Ring, Wireless LANs) The laboratory part of the course introduces students to the concept of: - structured cabling - networking commands - Introduction to HTML"
Teaching methodology	- Lecture
Evaluation methodologies	- Exam

	- Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Data Structures
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The course provides a systematic analysis of data structures, including linear lists, stacks, queues, pointers and dynamic data structures such as linked lists. Non-linear data structures such as binary trees, B-trees, tries are also analyzed. Memory demand is analyzed, the restrictions and efficiency of data structures are discussed. Comprehensive analysis of fast and slow sorting algorithms is presented, including bubble sort, insertion sort, selection sort, quicksort etc. Searching and recursive algorithms are explained. Hashing tables and graphs are also introduced. Finally, students will be given the opportunity to design and implement a program in C, using large data structures with random numbers and various sorting algorithms, testing the efficiency of each sorting technique
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Numerical Analysis and Scientific Programming
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree

Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning,
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	The course aims to provide students with the tools needed to solve wellknown mathematical problems that cannot be solved in analytical ways (such as solving nonlinear equations, area calculation, data access problems, etc.). The use of the MATLAB software makes it possible to implement and study the methods which presented in the theory with scientific programming. After attending the course, the student will be able: - to manage floating point numbers in algorithms. - to identify types of errors in a problem - to choose the appropriate arithmetic method for solving a nonlinear equation. - to calculate interpolation values into data with the appropriate interpolation. - to predict values with the approximation - to calculate numerical integral (areas) with numerical integration. - to using MATLAB in scientific programming problems. - to select which is the appropriate method to use in each problem he faces
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Object oriented Programming
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning,
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This course provides students with a comprehensive study of the objectoriented programming characteristics. The course emphasizes on the object paradigm including classes, inheritance, polymorphism, virtual functions, friend functions and templates. Students will also be given the opportunity to design and implement a complete object oriented application using the C++ programming language.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Database Systems
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	General Description: This course includes: - introduction to the concepts, - Introduction to Databases (Introduction, the purpose of DB systems, History and Evolution DB). - Database Management Systems (DBMS, Data and users Advantages and - Disadvantages, relational and non-relational systems, Hierarchical, Network) - Architecture of database systems (external level, conceptual level, data independence) - Modeling The Entity - Relationship model (Notations, attributes, structural constraints, week entity types, Generalization) The Relational Model - Transformation Scheme, Relational (Formalism, domains, relations, properties and relationships, structural constraints, Variations) - ogical Design and Normalization (Keys and Functional dependencies, first, second and third normal form). - Relational Algebra (View, Select, Cartesian product, renaming, Union, Intert, Difference, Additional Operators) - The SQL language (Data definition language commands, Create, Alter, Drop) - Modifying Data with SQL, (Insert, Delete, Update, Select) - SQL (Select-from-where, arithmetic expressions, Operations with Strings,) - SQL (Rename, alias, Null Values) - SQL (Aggregate Functions, Grouping, having, subqueries, operators: some, all, exists) - SQL (Types domain, schema definition, Limitations) - Relational Database (Query by Example-QBE) architecture and basic principles of organization and management of Databases Systems, design models, theoretical background, Database implementation methodology and Structured Query Language.

	Contents • Introduction to Databases (Introduction, the purpose of DB systems, History and Evolution DB). - • Database Management Systems (DBMS, Data and users Advantages and Disadvantages, relational and non-relational systems, Hierarchical, Network) - • Architecture of database systems (external level, conceptual level, data
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Machine Learning
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Introduction and Basic Concepts. Supervised Learning Setup. Linear Regression. Weighted Least Squares. Logistic Regression. Netwon's Method Perceptron. Exponential Family. Generalized Linear Models. Gaussian Discriminant Analysis. Naive Bayes. Laplace Smoothing. Laplace Smoothing. Support Vector Machines. Neural Netw rks - 1 Evaluation Metrics Bias - Variance. Regularization. Feature / Model selection. Deep Learning K-Means. GMM (non EM). Expectation Maximization. Factor Analysis. Principal and Independent Component Analysis.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Programming Methodology
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-

Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The "Programming Methodology" module focuses on presenting solid programming principles and object oriented design techniques. A major part of the module is the discussion of good and bad object oriented designs and notions such as coupling and cohesion. Object oriented design patterns are also presented in this setting. The module makes a quick introduction to the Java language as well as UML, and uses them in order to present the examples discussed; the emphasis, however, is on design techniques and not programming language details. A major part of the module is the associated term project which is developed by teams of 3 or 4 people. Students will be requested to deliver a substantial piece of software that will showcase the design principles discussed. Optional assignments are also given that students can take in order to improve their final grades.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Special Topics in Databases
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative	- General Description: The aim of this course is to offer the appropriate knowledge for databases systems, special issues on Data Base Systems and

engineering it's faced inside the educational courses	new techniques. The students will be able to create and design applications with databases, manage, protect and transfer the data of databases. Contents Conceptual Models and Logic Models Implementation Normalization and Normal Forms, 1NF, 2NF, 3NF, NF -BC, 4NF, 5NF, Key NF Nested queries, integrity constraints and views in SQL. SQL Extensions (procedures, functions, triggers) DB systems recovery and transactions Concurrency Security Cryptography Methodology correlation and linking databases with visual programming applications. Object -oriented and Object -Relational Database Indexes Modern Issues on Database Systems XML and ISON Introduction Introduction to Data Mining on Big Data
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Software Engineering
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	-
Length/duration	-
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The "Software engineering" module focuses on presenting the software development activities that are often overlooked in other programming modules. Whereas other modules such as "Programming Methodology"

	focuses on design issues, and modules such as “Introduction to programming” focuses on implementation issues, this module takes a step back and looks into activities such as “testing”, “requirements gathering” and “software development methodologies”. Its main task is to show students how to organise their work and deliver a quality product at the end. To this end students are introduced to agile methodologies such as Scrum and learn how to follow them applying time-boxing, writing tests and implementing a continuous delivery workflow. A major part of the module is the associated term project which is developed by teams of 7 or 8 people. Students will be requested to deliver a substantial piece of software following a workflow that resembles as much as possible that of a professional setting. They are expected to use any tools for this (version control, build systems etc) in order to deliver, on time, a working product that has been tested thoroughly.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Internet ProgramminG Applications
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving,
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it’s faced inside the educational courses	- The main goal of this lesson is to introduce the main principles of web programming to students. During the lesson, (Hypertext Markup Language) and CSS (Cascade Style Sheet) are being introduced, as well as the programming language PHP and the main concepts of database

	design. Also, JavaScript is being introduced. Finally, content management systems such as WordPress and Drupal are taught. In the laboratory, students work with WAMP (Windows, Apache, MYSQL, PHP) platforms, and develop a full web -based application as a project.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Data Mining
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Data mining is usually associated with the analysis of the large data sets present in the fields of big data, machine learning and artificial intelligence. The process looks for patterns, anomalies and associations in the data with the goal of extracting value. Here is the list of important areas where data mining is widely used: Healthcare, Market Basket Analysis, Manufacturing Engineering, CRM, Fraud Detection, Intrusion Detection, Customer Segmentation, Financial Banking. Contents Introduction to data mining techniques. a) data types b) problems, c) applications, d) general data analysis and processing techniques. Data pre-processing: a) data cleaning, b) data transformation, Clustering: a) introduction to clustering methods, b) distance measures, c) kmeans, d) hierarchical clustering.

	Data classification: (a) introduction to classification methods, (b) decision trees, (c) statistical techniques, (d) overfitting, (c) missing values, (d) model evaluation indexes, (e) classifiers Bayes classifiers, k-nearest neighbors f) classification in multidimensional time series data Association rules: a) item sets b) support b) confidence c) a-priori algorithm Dimensionality reduction techniques: Feature selection algorithms a) wrappers, b) filters, c) embedded. Knowledge discovery with Data Warehouses Applications: Data mining techniques on biomedical data, business data, images data, text data and the Internet data. Google Analytics, Bussiness Analytics
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Introduction to Robotics
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Digital Enginneering, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving,
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- The main goal of this lesson is to introduce the fundamental concepts of robotics to students. Students learn the basic notions of robotics, including concepts such as kinematics and inverse kinematics, robotic control systems, and robot dynamics. Also, the students get acquainted in the laboratory with different robots and robotic design/programming software
Teaching methodology	- Lecture

Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Digital Image Processing
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Introduction and organization, physics of vision, resolution, impulse response. Viewing digital images, bits and bytes, raster scan format, quantization. Linear systems, matrix transformations, scaling, translation and rotations. Scaling, translation and rotation, sums and differences. Contrast and grey levels, histograms, Gaussian and other non -linear stretches. Convolution, simple filters, edge detection. The frequency domain, power spectral density, the FFT. Digital filtering, image enhancement, noise. Fourier transforms and the frequency domain, filters. Color representation, RGB, HSI, 24 bit and 8 bit color tables. 3D information, perspective plots. Image morphing. Interpolation. Fitting smooth functions to sparse data, least - squares. False color images, principle components analysis
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Algorithms and Complexity
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Introduction of formal techniques to support design and analysis of algorithms. Emphasizing on both the underlying mathematical theory and practical considerations of efficiency. Asymptotic analysis of time complexity. Algorithms and advanced data structures for searching and sorting lists, Graph algorithms, Complexity of algebraic operations, Automata and string algorithms, Introduction to complexity theory, Parallel and distributed algorithms.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Compilers
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Bachelor degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- In class
In case of online or blended modality please clarify which platform are you using	-

Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- This course introduces a number of important concepts concerning the design and implementation of programming language compilers. Concepts that are discussed are compiler's structure, lexical analysis, parsing, syntax-directed translation, abstract syntax trees, semantic analysis, types and type checking, intermediate languages, program analysis, program optimization, symbol table, code generation and runtime systems. On successful completion of this course, students will be able to deeply understand how a program written in a high-level language is systematically translated into a program written in low-level assembly language more suited to machines. In addition, students will be able to construct small scale compilers by using a set of free tools.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- http://ict.ihu.gr/en/undergraduate-study

Country	- Greece
Higher Educational institute	- IHU
Course name	- Statistical analysis tools
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Artificial intelligence, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Purpose The aim of the course is, on the one hand, to familiarize graduate students with the concepts and methodology of statistical analysis and, on the other hand, to study and apply modern tools of statistical analysis. The study is both theoretical and practical, with emphasis on the use of analytical tools through projects. Outline Population, sample. Types of variables, frequency distribution, data clustering. Graphs (bar charts, histograms, pie charts, phylograms, thymograms, time series graphs, scatter plots, colour and multidimensional graphs). Positional and scatter measures, calculations from simple or clustered frequency tables. Sample distributions, distributions of sums of random variables, central limit theorem and its implications in statistics. Point and interval estimators, impartiality and adequacy. Unbiased minimum variance estimators, method of moments and method of maximum likelihood. Confidence intervals and hypothesis tests for one and two samples (independent or paired) for mean and variance. Confidence intervals and hypothesis tests for proportions. The X2 test (tests of goodness of fit, independence and homogeneity). Simple linear regression and correlation. Non-parametric tests (flow test, randomness tests, Kolmogorov-Smirnov test, Mann-Whitney test, Wilcoxon test, McNemar test, Kruskal-Wallis test). Hypothesis testing and related criteria. Fundamental lemma of Neymann-Pear-son, complex hypotheses, hypothesis tests of generalized likelihood ratio, hypothesis tests for the normal distribution of one or two samples. X2 test. Relevance tables. The characteristic function for multivariate random variables. The multivariate normal distribution and the distributions derived from it. Applications of the above results to statistical

	analysis (Cochran's theorem, ANOVA, regression, X2). Extraction of statistical inferences by both classical Neyman and Pearson theory, decision theory and generalized likelihood ratio. Sampling and Statistical Processing: Sampling and its Applications to Social and Economic Issues. Sampling methods and techniques. Polls from A to Z. Questionnaire design and reliability testing. Types of questions and specification of their uses. From questionnaire to random variables and recording their data in computer files. Processing of data after their recording. Content-specific sampling topics such as: "Detecting linear trend of data", "Detecting periodicity of data", "Generating Probability Function Equation (2-step model) from 2-dimensional data, etc.", "The Coefficient of Variability and its applications, e.g. Finding a binomial model of probability density function".
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- https://mscinformatics.ihu.gr/mathimata/

Country	- Greece
Higher Educational institute	- IHU
Course name	- E-learning systems
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Purpose Upon successful completion of the course, postgraduate students will be able to: Design infrastructures that support online knowledge management. Be familiar with advanced issues in the design and implementation of collaborative learning systems Be familiar with issues related to the design of technological multimedia environments for education and learning. Be able to carry out a comparative analysis and apply modern theoretical models to the design of multimedia applications use tools for the design-development of multimedia applications for learning, be familiar with qualitative methods of evaluation of technology-enhanced learning Be familiar with issues related to the design and implementation of virtual learning environments to have an introduction to modern educational practices such as constructivism. - Outline The course addresses the following specific topics: The role of Education in the learning society. The use of ICT to support knowledge management. The use of knowledge management in the support of the use of ICT for learning. - The production, transmission and use of knowledge in different sectors (e.g. education, health) Modern and asynchronous tele-education. Videoconferencing systems and synchronous tele-education protocols. - Protection of software products and educational material according to the Berne Convention, the relevant European Union Directives for the protection of intellectual property and the corresponding Greek laws. Information on Legal Informatics issues.

	- The change of the dominant "paradigm" in education. The introduction of ICT in schools: cultures in negotiation. Knowledge representations for learning in multimedia environments. Mayer's cognitive model for multimedia learning. Principles of designing multimedia teaching messages. The role of animation in learning. Design of learning interactions in multimedia environments. Principles and proposals of Epistemology (Active Learning, Social Interaction, Distributed Intelligence, Framework Learning). Structural Epistemology (Piaget, Papert) & Social Epistemology (Vygotsky, Leontiev). Model for designing a constructive learning environment on the Internet. Internet learning environments. Virtual learning environments. Virtual reality, virtual environments and their applications in education/learning. Web-based virtual environments. Virtual learning environments. The role of virtual representations and delegate transfers in collaborative virtual reality environments in education. Useful tools, technologies and standards for virtual learning environment systems. Systems of virtual learning environments. Particular emphasis is placed on the presentation of copyright protection issues for software products and learning objects.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- https://mscinformatics.ihu.gr/mathimata/

Country	- Greece
Higher Educational institute	- IHU
Course name	- Programming of Scientific Applications
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative	- Purpose The aim of the course is, on the one hand, to familiarize graduate students with the concepts and methodology of statistical analysis and, on the other hand, to study and

engineering it's faced inside the educational courses	apply modern tools of statistical analysis. The study is both theoretical and practical, with emphasis on the use of analytical tools through projects. Outline Population, sample. Types of variables, frequency distribution, data clustering. Graphs (bar charts, histograms, pie charts, phylograms, thymograms, time series graphs, scatter plots, colour and multidimensional graphs). Positional and scatter measures, calculations from simple or clustered frequency tables. Sample distributions, distributions of sums of random variables, central limit theorem and its implications in statistics. Point and interval estimators, impartiality and adequacy. Unbiased minimum variance estimators, method of moments and method of maximum likelihood. Confidence intervals and hypothesis tests for one and two samples (independent or paired) for mean and variance. Confidence intervals and hypothesis tests for proportions. The X2 test (tests of goodness of fit, independence and homogeneity). Simple linear regression and correlation. Non-parametric tests (flow test, randomness tests, Kolmogorov-Smirnov test, Mann-Whitney test, Wilcoxon test, McNemar test, Kruskal-Wallis test). Hypothesis testing and related criteria. Fundamental lemma of Neymann-Pear-son, complex hypotheses, hypothesis tests of generalized likelihood ratio, hypothesis tests for the normal distribution of one or two samples. X2 test. Relevance tables. The characteristic function for multivariate random variables. The multivariate normal distribution and the distributions derived from it. Applications of the above results to statistical analysis (Cochran's theorem, ANOVA, regression, X2). Extraction of statistical inferences by both classical Neyman and Pearson theory, decision theory and generalized likelihood ratio. Sampling and Statistical Processing: Sampling and its Applications to Social and Economic Issues. Sampling methods and techniques. Polls from A to Z. Questionnaire design and reliability testing. Types of questions and specification of their uses. From questionnaire to random variables and recording their data in computer files. Processing of data after their recording. Content-specific sampling topics such as: "Detecting linear trend of data", "Detecting periodicity of data", "Generating Probability Function Equation (2-step model) from 2-dimensional data, etc.", "The Coefficient of Variability and its applications, e.g. Finding a binomial model of probability density function".
Teaching methodology	- Lecture

Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- https://mscinformatics.ihu.gr/mathimata/

Country	- Greece
Higher Educational institute	- IHU
Course name	- Parallel Programming
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Purpose The aim of the course is for postgraduate students, after successfully completing the course, to be able to: (a) know the differences between classical serial programming versus Parallel Programming; (b) know how to convert serial algorithms into parallel ones, using the appropriate architecture as well as the appropriate programming model; (c) have the ability to create and execute parallel programs either on a supercomputer (grid computer) or on an array of computers with MATLAB software. - Outline Introduction: parallel programming in general, parallel architectures, performance measures, Flynn and Amdahl's law, directed non-cyclic graphs (DAGs) and Gantt charts. Parallel architectures: general overview and in-depth look at SIMD, MIMD shared and distributed memory classes. Parallel programming-tools: principles of shared memory and SIMD parallel programming, programming in the shared memory model, message-passing programming, client-server programming. - Parallel algorithms for matrix processing, sorting, searching, etc. for various architectures. Calculation of parallel complexity (processing, communication).
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- https://mscinformatics.ihu.gr/mathimata/

Country	- Greece
Higher Educational institute	- IHU
Course name	- Information and Network Security
Sector	- Department of Computer, Informatics and Telecommunications Engineering
Level of studies (choose)	- Master Degree
Length/duration	- 5 months
Keywords (select the keywords of the course)	- Creativity, Analitycal Thinking, E-learning, Problem solving
Course fruition modality (choose one or more)	- Blended
In case of online or blended modality please clarify which platform are you using	-
Short description of contents/scope of the course with a detail on how creative engineering it's faced inside the educational courses	- Purpose The security of information, computing and telecommunication systems is a highly topical and active - both scientifically and technologically - subject, with an increasing need for specialists in the global market. The aim of this course is to address information and network security holistically, as possible security gaps in any component of an information system can compromise the entire system. Thus, computing structures, operating systems, network technologies, data storage systems and software development processes are included. The course attempts to equip the graduate student with the latest tools, techniques and knowledge in one of the most interesting areas of modern computer science. The holistic perspective towards cybersecurity includes those technologies on which cyberspace is based, but also recognizes the role of psychology, sociology and linguistics in managing cyber challenges. - Outline The course covers topics such as: Foundations of Cybersecurity. Identity, Trust, Reputation and their applications. Computer, Network and Communications Security. Security mechanisms in operating systems: access control lists and their capabilities. Software-based attacks and countermeasures: e.g. sql code injection, memory overflow, etc. Cryptography and applications. Penetration testing. Event response. Intrusion detection. Digital forensics: Principles and Practice. Malware Analysis. Fraud Diagnosis. User Behavior and Privacy. Legal, Ethical and Professional Practice.
Teaching methodology	- Lecture
Evaluation methodologies	- Exam - Assignment
Language of course	- GREEK
Website	- https://mscinformatics.ihu.gr/mathimata/

3 COMPARATION OF LEVEL OF STUDY, KEY WORDS, SECTOR

3.1 SLOVAKIA

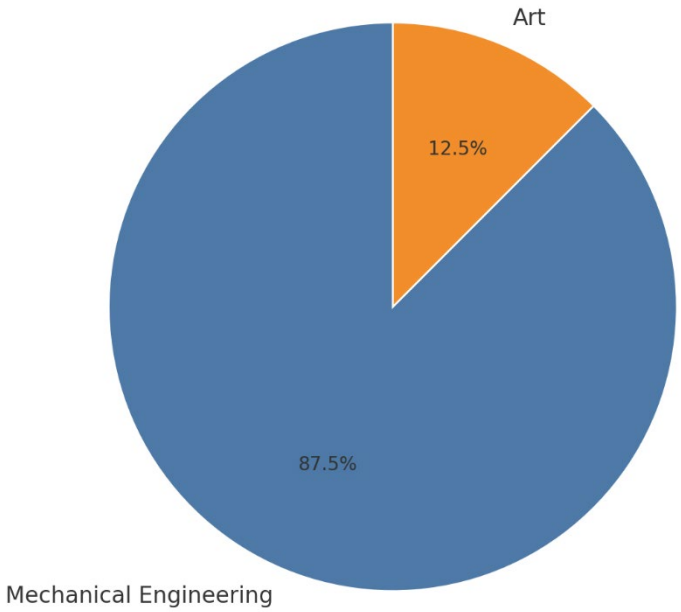

Figure 1 Courses by Sector

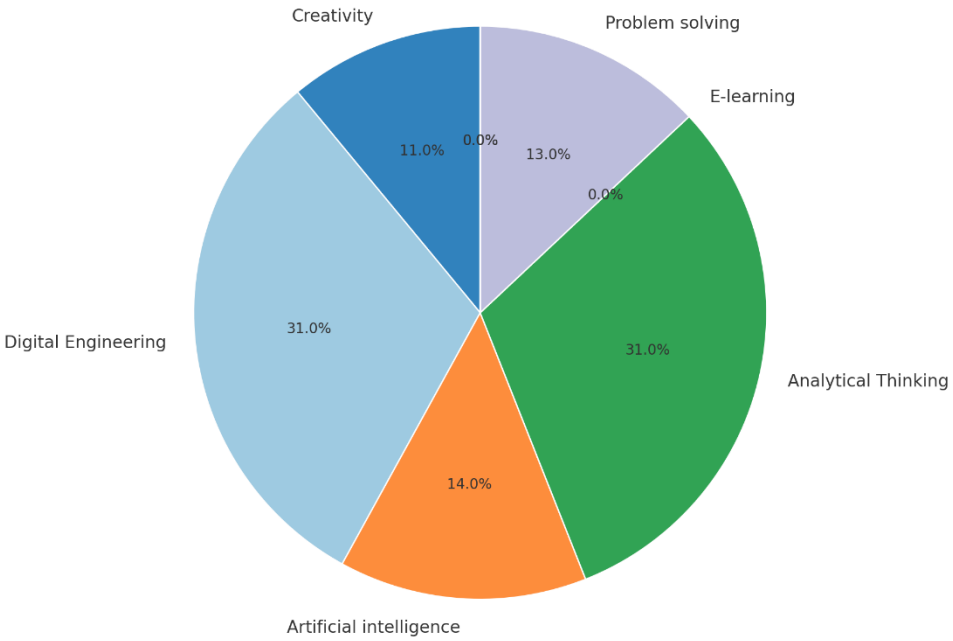

Figure 2 Courses by keywords

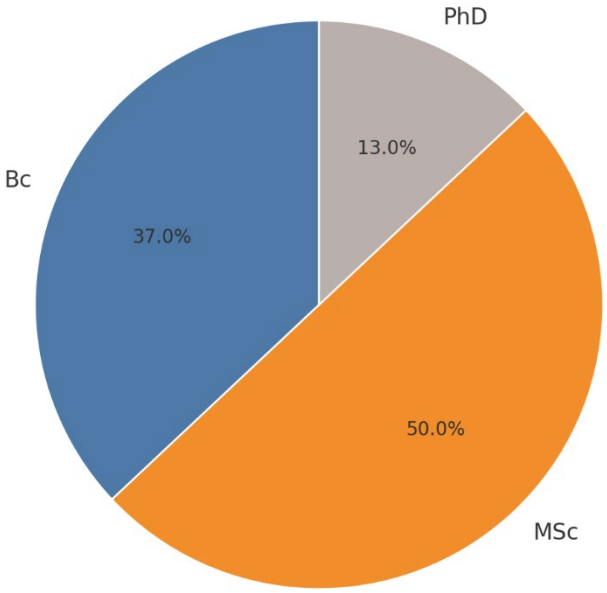

Figure 3 Courses by Level of Study

In Slovakia the most presented sector is Mechanical engineering, and the dominant keywords are Digital engineering and Analytical thinking. There are more master's degree courses than bachelor's courses.

3.2 ITALY

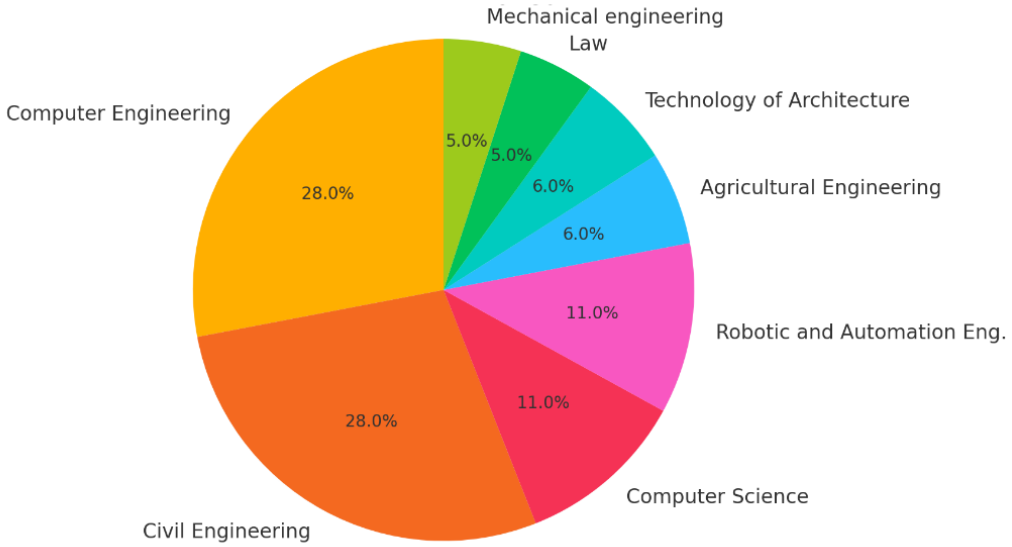

Figure 4 Courses by Sector

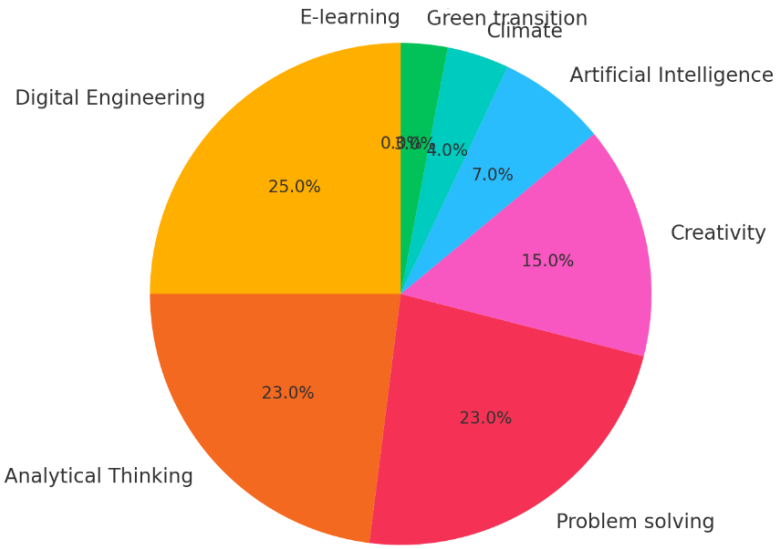

Figure 5 Courses by Keywords

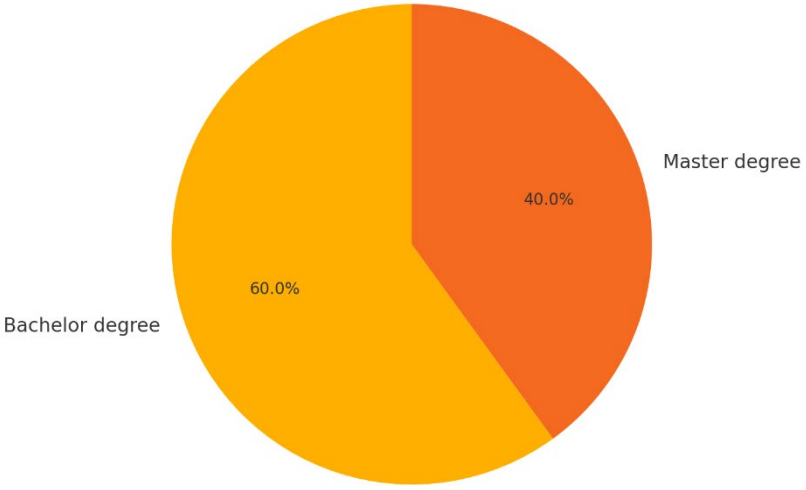

Figure 6 Courses by Level of Study

In Italy, the most presented sector is civil engineering and computer engineering, and the dominant keywords are Digital engineering and Analytical thinking. there are more bachelor's courses than master's courses.

3.3 GREECE

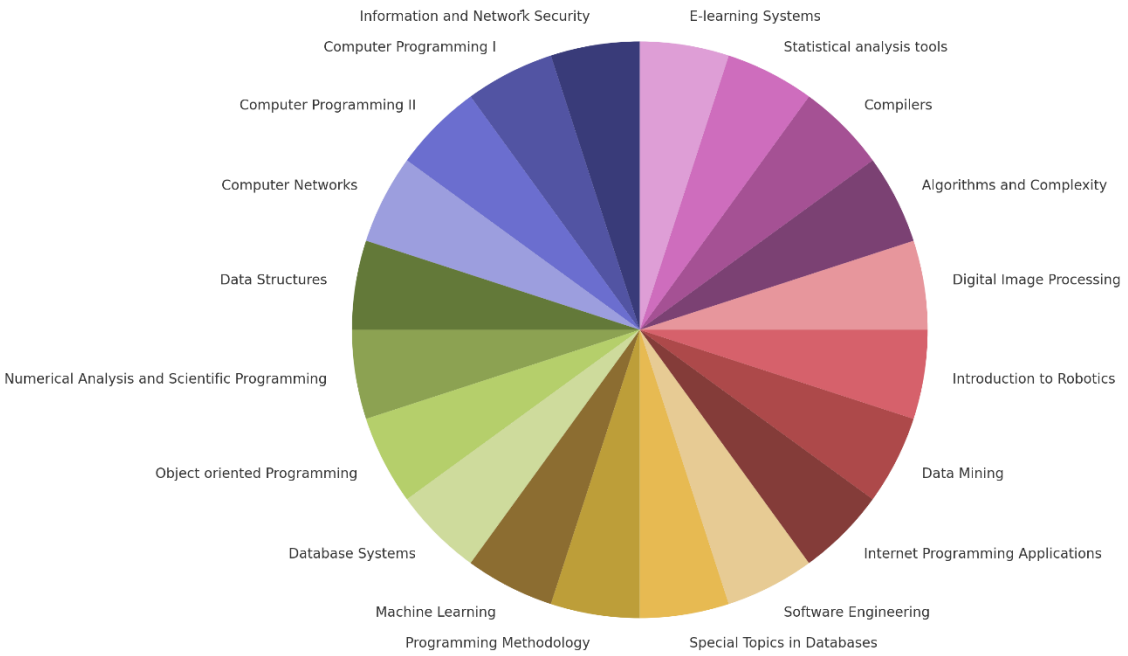

Figure 7 Courses by Sector

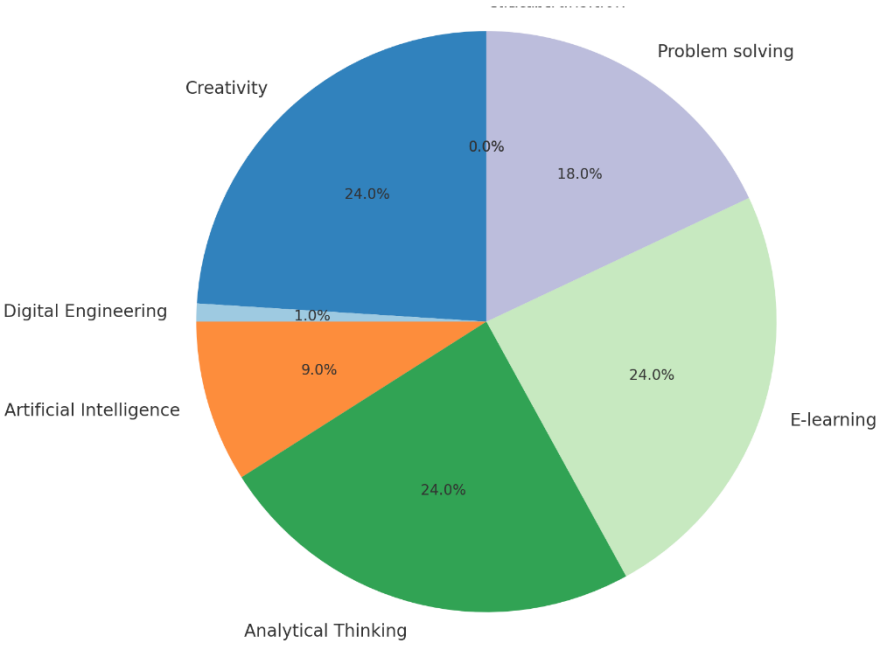

Figure 8 Courses by keywords

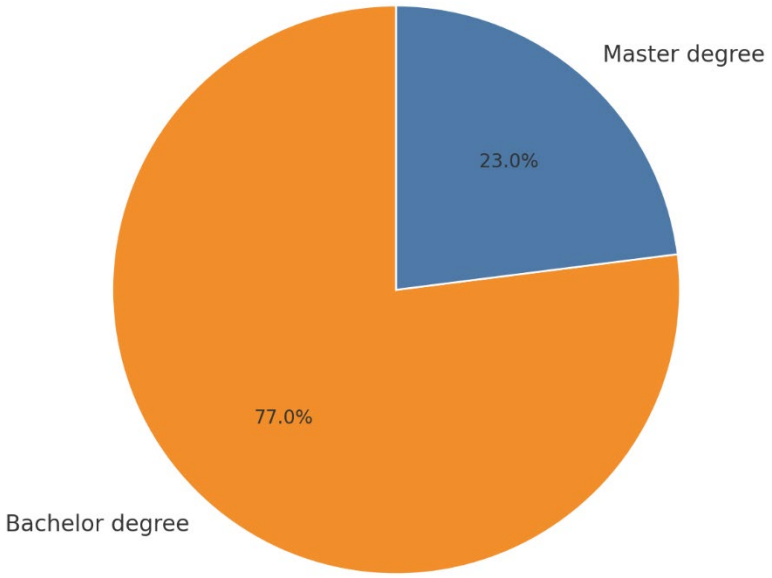

Figure 9 Courses by Level of Study

In Greece there are 22 sector of courses, and the dominant keywords are e-learning and Analytical thinking. There are more bachelor's courses than master's courses.

3.4 SPAIN

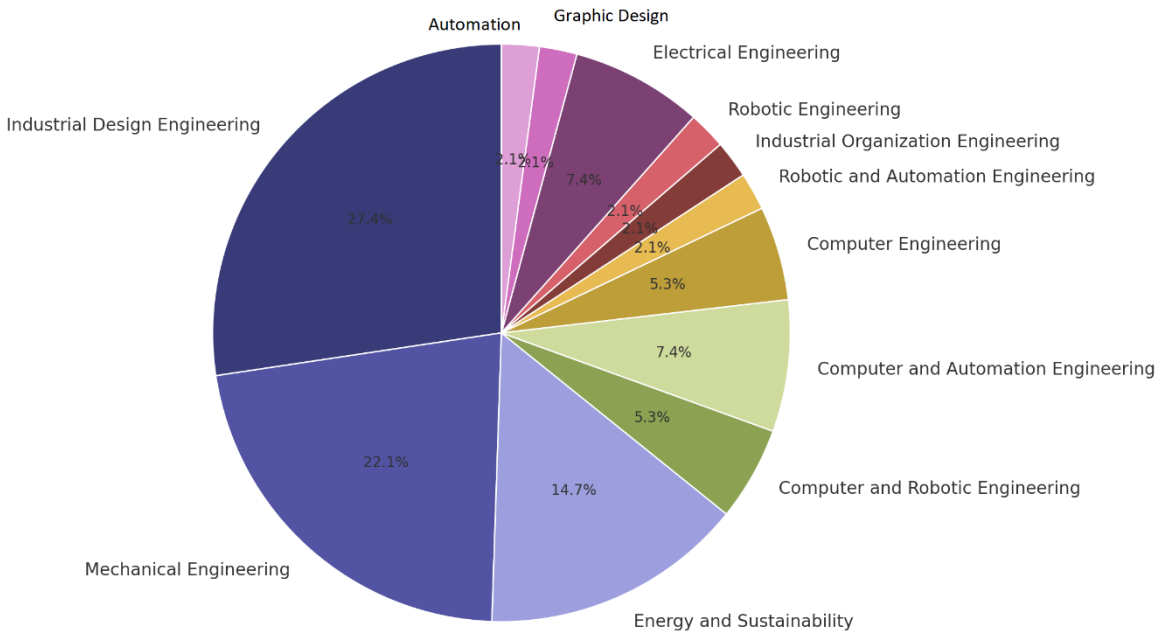

Figure 10 Courses by Sector

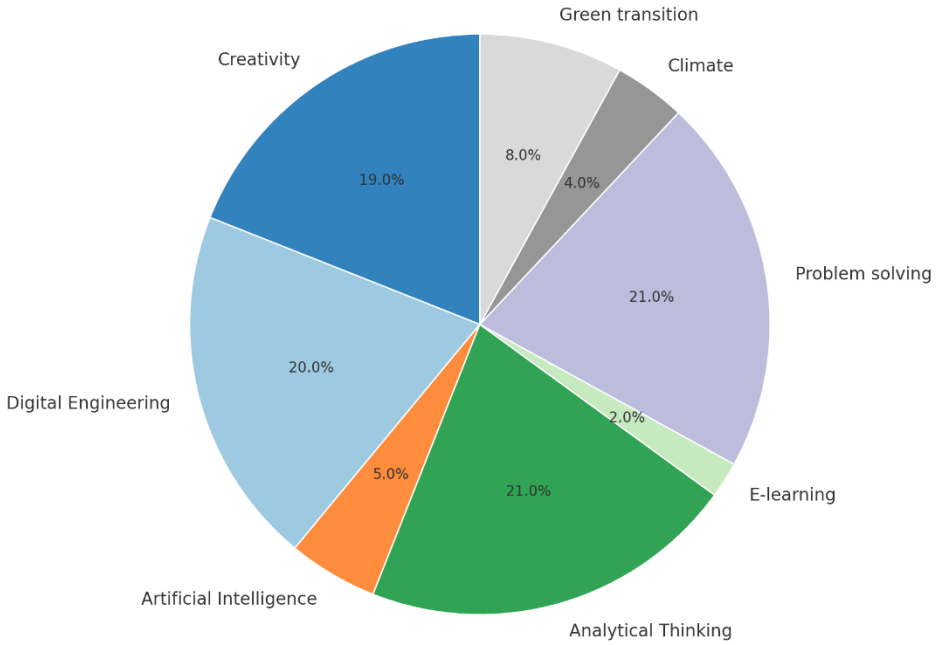

Figure 11 Courses by keywords

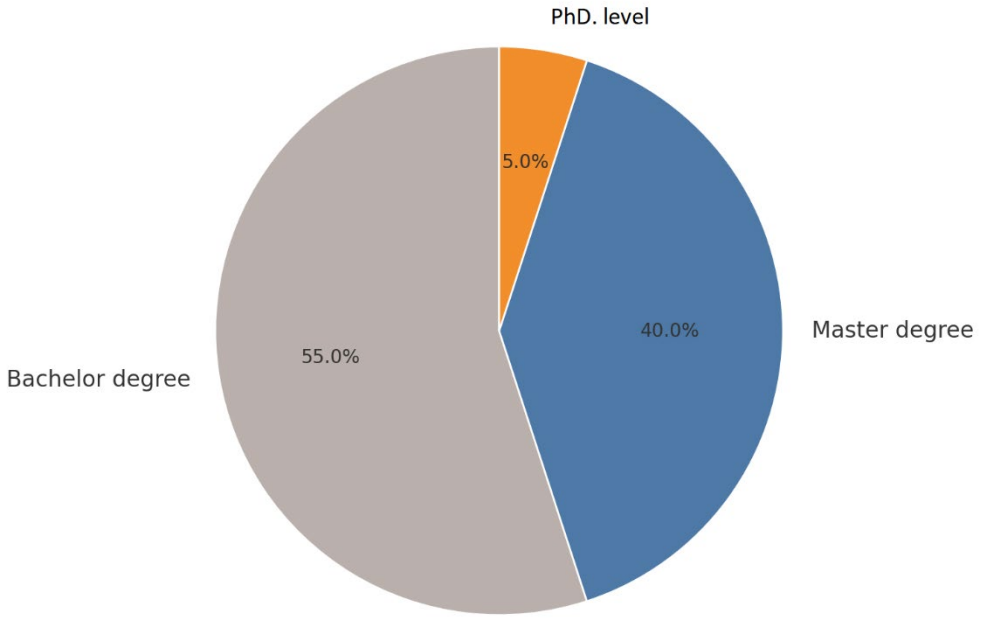

Figure 12 Courses by Level of Study

In Spain, the most presented sector are Industrial design engineering and energy and sustainability and the dominant keywords are problem solving, Digital engineering and Analitycal thinking. There are more bachelor's courses than master's courses.

3.5 TURKEY

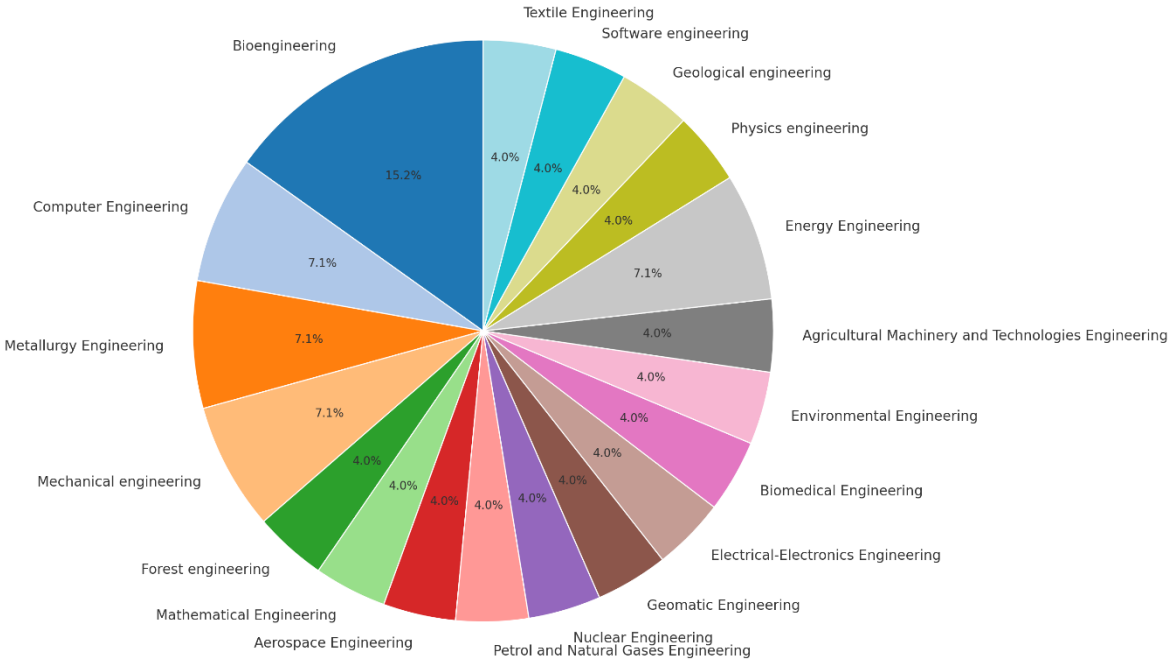

Figure 13 Courses by Sector

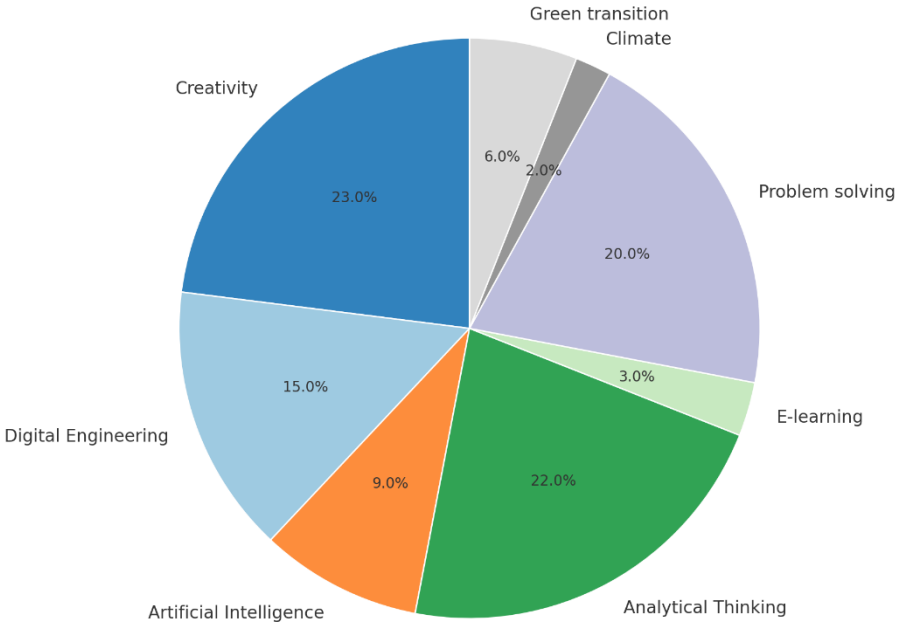

Figure 14 Courses by keywords

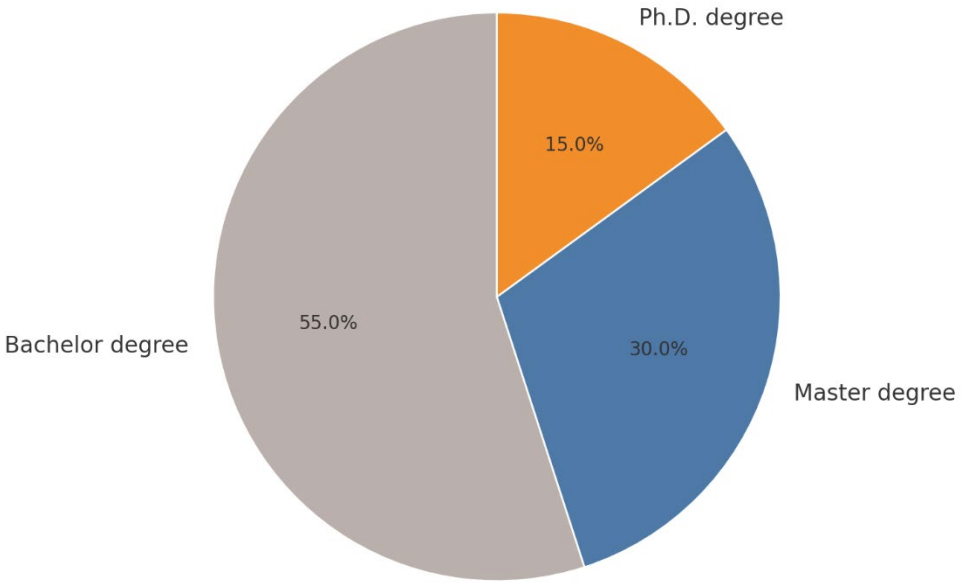

Figure 15 Courses by Level of Study

In Turkey, the most presented sector are Bioengineering and computer engineering. Dominant keywords are creativity, problem solving and Analytical thinking. There are more bachelor's courses than master's courses.

A comparison of individual course keywords shows that Spain has the most courses with keywords like Creativity, Digital Engineering, Artificial Intelligence, Analytical Thinking, E-learning, Problem solving, Climate and Green transition.

4 CONCLUSIONS

The report includes detailed information about the curricula of the courses in which the theme of creativity is studied in the field of engineering and shows many concrete examples of creative engineering courses already available in partner countries. This report put the basis and gather the contents for the elaboration of the creativity-oriented curriculum.

Some best practices identified are:

- In **Slovakia**, Digital Arts: The study program connects visual arts and design with information technologies. It responds to a rapidly changing world where it is important to be able to learn new skills and where a wide range of modern digital technologies brings visual artists closer to programmers. In addition to the practical use of computers in the creative process, the program content also addresses the social dimension of the impact of digital technologies on people and the innovative means of expression that digital technologies provide to artists. The interdisciplinary nature of the program connects students with academic and business subjects in the fields of art, computer science or data science, but also in the fields of humanities, social sciences and history. In addition to standard forms, studio creation focuses, for example, on interactive digital works, virtual reality and augmented reality (AR/VR) experiments, data visualizations, video games, interactive installations involving the visitor and others.
- In **Italy**, Agri-Tech: Technologies for a sustainable agriculture: The course focuses on advanced technological solutions in the agricultural field aimed at integrating a sustainable use of natural resources, a reduced impact on environmental sectors and the promotion of circular approaches, maximizing agricultural production, also in line with the EU Farm to Fork strategy and common agricultural policy. The course will introduce students to the key resources and

needs of agriculture, identifying critical aspects with potential negative environmental effects (e.g. water use, agrochemical contamination, soil depletion, etc.). The most advanced technological solutions available to overcome these critical issues will be presented. The advantage of the course concerns the organization of practical activities (including soil characterization and field measurement of the main soil parameters, installation of sensors and data uploading, drone monitoring) in the field, with which students will be able to:

- Develop an interdisciplinary approach to critical issues and technological solutions in agriculture;
- Develop key capabilities in the systemic design of approaches and technologies for monitoring and optimizing agricultural production;
- Identify and contextualise key issues associated with sustainable use of resources;
- Identify, compare and select the most effective technological solutions for reducing the impacts of agricultural production.

- In **Spain**, Master's degree in automatic control and robotics: The program lasts two academic years and includes a master's thesis and training in an industrial or research environment. It is divided into compulsory and free-optional subjects. The compulsory subjects provide students with multidisciplinary training in automatic control systems, robotics and robotic systems in various environments; computer vision; information technology and communication in the processing elements; and scientific and technological instruments. In free-choice subjects, students complete their education in the areas of their interest. This master trains graduates who have achieved a high level of excellence in the analysis, management and optimization of process control and robotics, industrial engineering and residential, social and service environments, activities essential for social progress, productivity economy and quality of life.
- In **Turkey,** Special Topics in Application of Nuclear Technique: The practices of this course are explored in depth starting from the 2nd year of the training

course, where each semester, students are required to attend a different project path and are encouraged to take an active part in research. Through the use of computer codes such as FLUENT, ANSYS, MCNP and ORIGEN; analyzes and simulations of engineering systems are performed and solutions to current problems related to nuclear technology are sought. Technological problems of energy production by fission receive primary emphasis.