ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

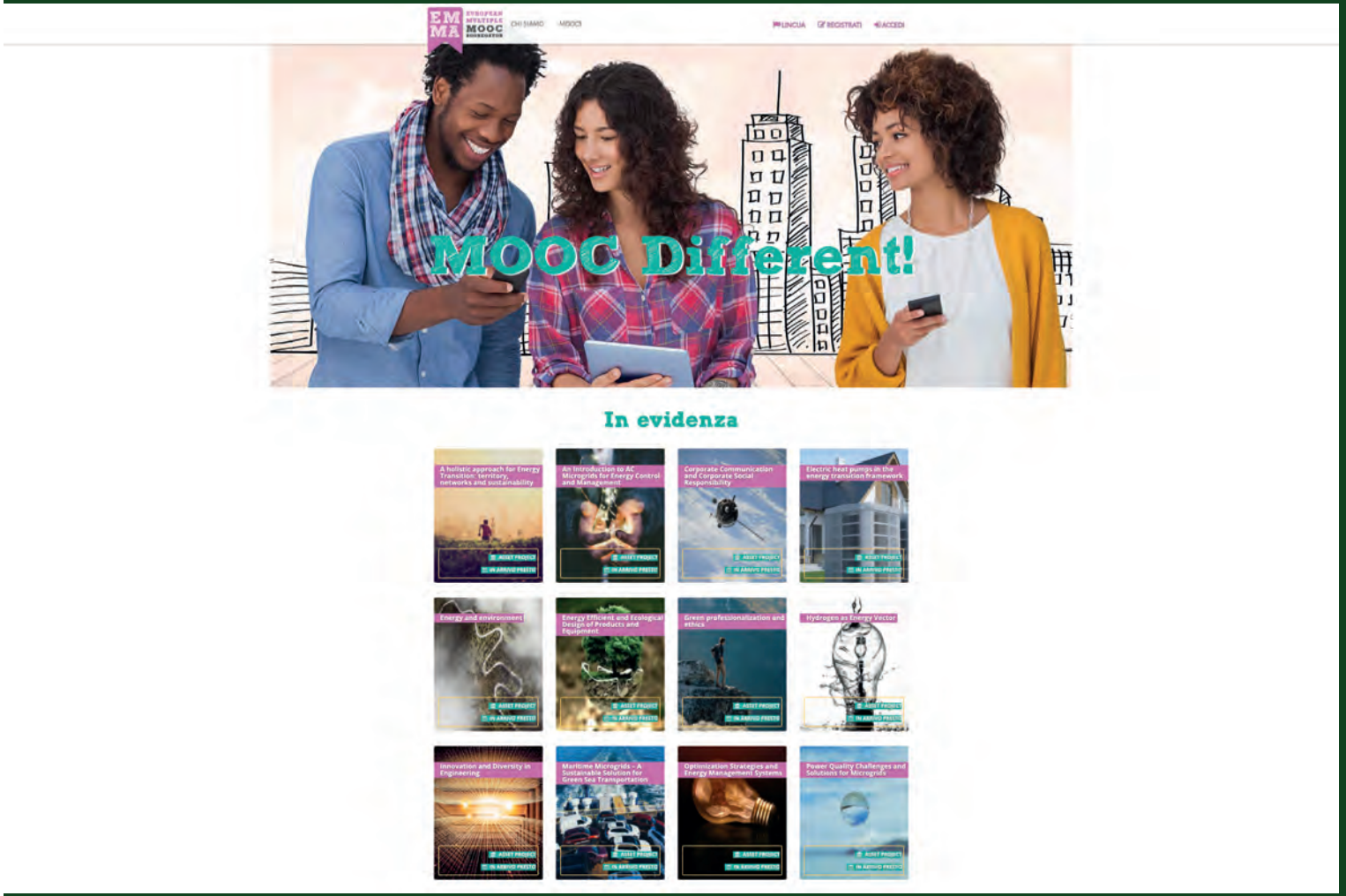
energytransition.academy

duration 24 months

EU funded H2020

EUROPEAN MULTIPLE MOOC AGGREGATOR

www.europeanmoocs.eu



ASSET MOOCs to foster energy transition

A HOLISTIC APPROACH FOR ENERGY TRANSITION: TERRITORY, NETWORKS AND SUSTAINABILITY

course held by Anna Maria Zaccaria, Università degli Studi di Napoli Federico II

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

21/04/2020

duration 6 weeks

free

English

This course, promoting a holistic approach, is aimed to reach all individuals interested in the topic and willing to promote a sustainable participatory planning of Energy Transition. The course focuses on the socio-territorial and environmental perspective in order to understand Energy Transition as a social construction process. The first two modules of the course are dedicated to clarify the concept of ET and to understand it as a social construction process in order to territorial, social and environmental perspective. In the third and fourth modules we will address the issue of the Sustainable Participatory Planning of Energy Transition.

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ASSET Grant Agreement No 837854

AN INTRODUCTION TO AC MICROGRIDS FOR ENERGY CONTROL AND MANAGEMENT

course held by Josep Guerrero, Aalborg University

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

15/10/2020

duration 4 weeks

free

English

This course focuses on the modeling, operation and control design of AC microgrids for resilient and efficient integration of renewable/non-renewable energy resources and storage technologies. The simulation handbook and exercises provided in the course are based on real-use cases and will be extremely useful to develop insights into AC microgrid control and management for industry practitioners and researchers.

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AN INTRODUCTION TO DC MICROGRIDS FOR ENERGY CONTROL AND MANAGEMENT

course held by Josep Guerrero, Aalborg University

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

15/10/2020

duration 4 weeks

free

English

This course focuses on the modeling, operation and control design of DC microgrids for resilient and efficient integration of renewable/non-renewable energy resources and storage technologies. The simulation handbook and exercises provided in the course are based on real-use cases and will be extremely useful to develop insights into DC microgrid control and management for industry practitioners and researchers.

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CHALLENGES AND SOLUTIONS IN FUTURE POWER NETWORKS

course held by Gianluca Lipari, Aachen University

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

01/10/2020

duration 6 weeks

free

English

If you are looking for a program that keeps you up with new innovative solutions for the power network of the future, then this course is for you. Learn about the challenges in and solutions for frequency control, voltage control, simulations, and monitoring.

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CORPORATE COMMUNICATION AND CORPORATE SOCIAL RESPONSIBILITY

course held by Ivano Scotti, Università di Pisa

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

21/04/2020

duration 6 weeks

free

English

Social and environmental responsibility has become a common issue in corporate communication, but how to design an efficient communication plant? Why did the subject of 'responsibility' become a relevant topic? Which role is playing ICT in corporate communication? Are they suitable for communication of corporate social responsibility? This course offers insight on the corporate social responsibility and communication reporting the connections among organizational models, communicational functions, consumptions trends, new communication technologies and socio-environmental crises.

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ELECTRIC HEAT PUMPS IN THE ENERGY TRANSITION FRAMEWORK

course held by Alfonso William Mauro, Università degli Studi di Napoli Federico II

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

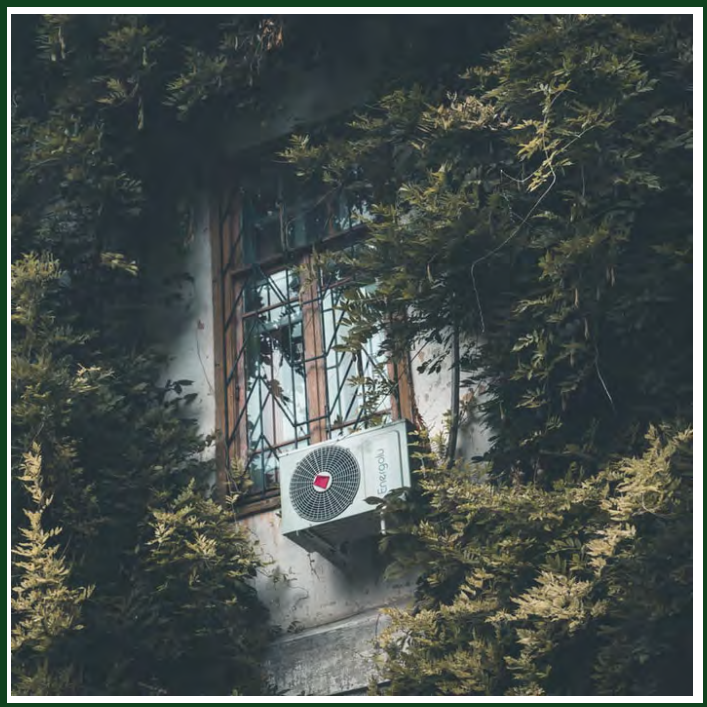
10/09/2020

duration 7 weeks

free

English

The MOOC aims to give an overview of the heat pump technologies application in the context of the energy transition. In particular, using a case based approach, the course will start with examples of the heating and cooling needs of the buildings then moving to the working principle and technologies of the electrically driven heat pumps. After examples of energy performance indicators calculations and dynamic simulation of the heat pump coupled to a building, the integration of the heat pumps into more complex systems (smart grids) is discussed, introducing the tools allowing heat storage and strategies for control (demand side management).



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ENERGY AND ENVIRONMENT

course held by Costantinos Psomopoulos, University of West Attica

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

21/04/2020

duration 10 weeks

free

English

The MOOC aims to give an overview and the knowledge for the interconnection of the production and consumption of energy with the environment under the context of the energy transition. In particular, using a case based approach, and tools' analysis, the course will start with the basic and core presentation of the impact of the energy generation and consumption to the environment on terms of resources consumption, gasses emission, impact on land and water. After examples of energy and environmental performance indicators calculations and presentation of different approaches and case studies, the implementation of energy efficiency and RES in the environment is evaluated.

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ASSET Grant Agreement No 837854

ENERGY EFFICIENT AND ECOLOGICAL DESIGN OF PRODUCTS AND EQUIPMENT

course held by Costantinos Psomopoulos, University of West Attica

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

21/04/2020

duration 12 weeks

free

English

The MOOC aims to give an overview and the knowledge for the implementation of the eco-design in every product or system design in the context of the energy transition. In particular, using a case based approach, and tools' analysis, the course will start with the basic and core legislation then moving to the economics and working principle and methodologies used for implementing eco-design and energy efficient design. After examples of energy and environmental performance indicators calculations and presentation of different approaches and case studies, the implementation in every potential product or system is presented and discussed, under the context of smart, affordable and sustainable energy context.

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GREEN PROFESSIONALIZATION AND ETHICS

course held by Dario Minervini, Università degli Studi di Napoli Federico II

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

21/04/2020

duration 3 weeks

free

English

Energy transition is having an impact on the world of occupations and professions. Some job profiles are emerging, others are being innovated, incorporating sustainability sensitivity and values. This societal innovation involves different fields, from research, to industry and consumption. "Green collars" have a pivotal role in translating socio-technical innovation "in practice" and in different territories (i.e., green energy facilities). In order to face this complexity, skills and knowledge are more and more hybrid, connecting technical skills with social ones. This set of knowledge and competences will be investigated with reference to some empirical case studies (i.g., the wind farm developers). In particular ethical sustainability issues will be addressed and discussed.

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HYDROGEN AS ENERGY VECTOR

course held by Elisa Peñalvo, Universitat Politècnica de València

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

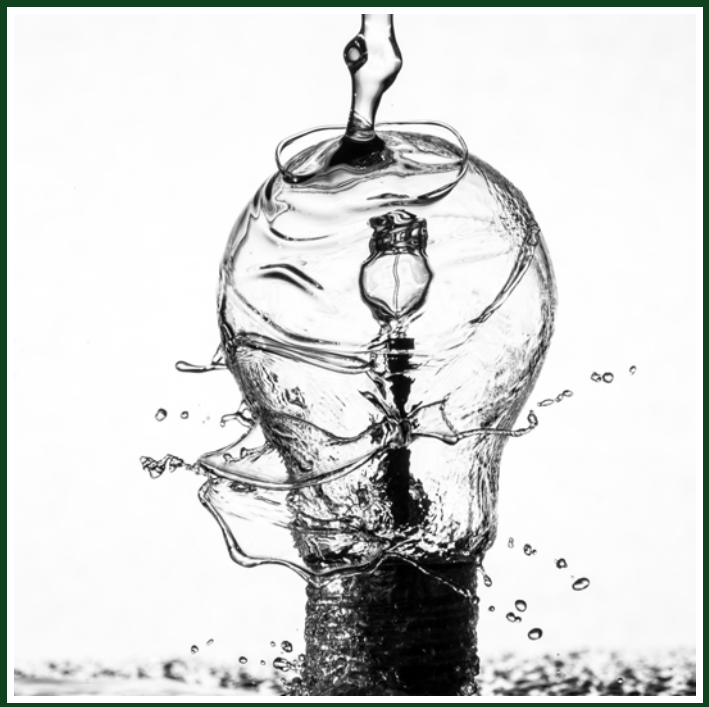
21/04/2020

duration 6 weeks

free

English

The course provides the fundamentals of the hydrogen technology, using it as a way to store energy. Hydrogen production methods are presented, but more special attention is paid to electrolysis as a mean for producing hydrogen from renewable energies. Hydrogen storage methods are described and it is explained process of electrical energy generation from hydrogen by using fuel cell technology.



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INNOVATION AND DIVERSITY IN ENGINEERING

course held by Julia Berg, Aachen University

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

01/10/2020

duration 6 weeks

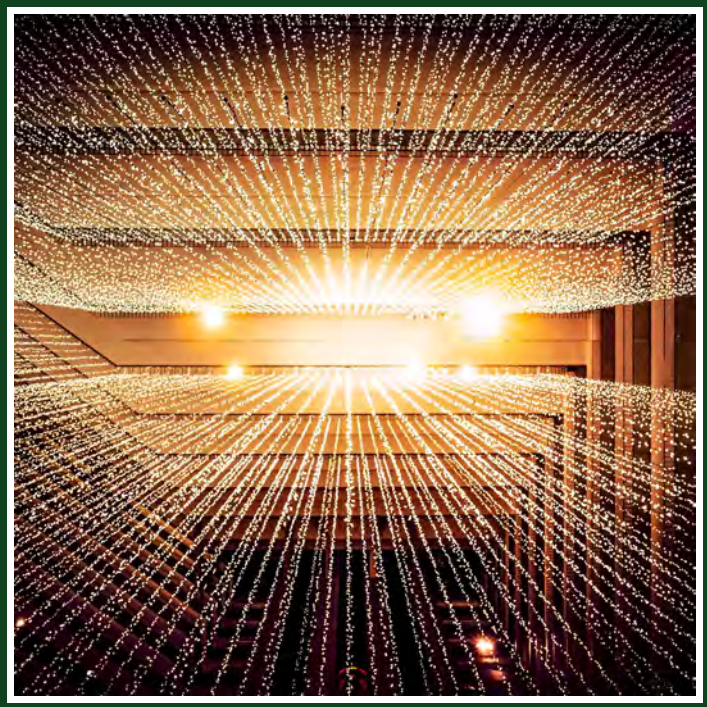
free

English

The course deals with the context between the development of sustainable innovations and diversity and with the question how culture shapes and impacts engineering.

A MOOC will be developed to understand the diversity among people with whom you work in technology-based enterprises, and for whom you design products and services.

We will not only have text but also group works and give room for discussions and the exchange of different views and ideas.



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MARITIME MICROGRIDS – A SUSTAINABLE SOLUTION FOR GREEN SEA TRANSPORTATION

course held by Josep Guerrero, Aalborg University

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

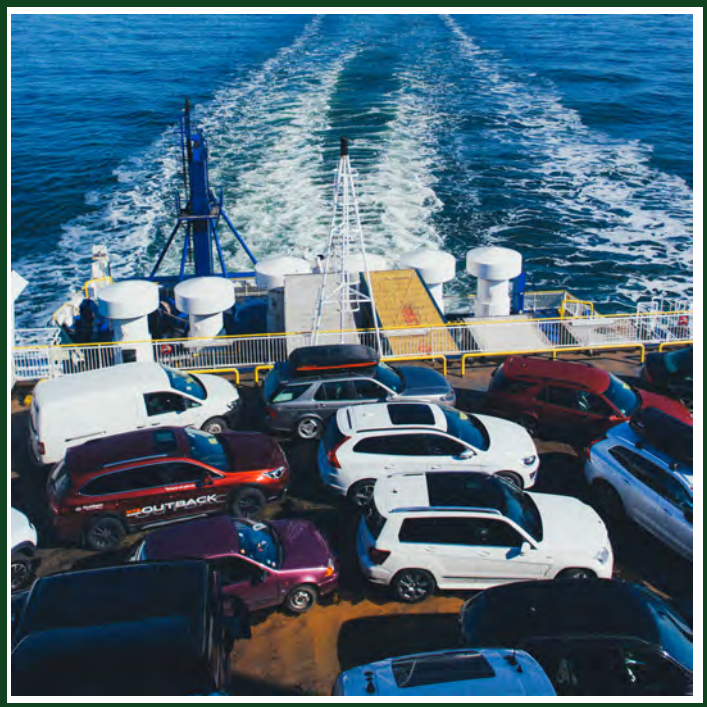
15/10/2020

duration 4 weeks

free

English

This course provides an overview of the present and future architectures of maritime microgrids, associated control technologies, optimization methods, power quality issues and state of the art solutions. The simulation handbook and exercises provided in the course are based on real-use cases and will be extremely useful to develop insights into the control, optimization and energy management of integrated power systems for maritime industry practitioners and researchers.



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NEW MATERIALS FOR SOLAR CELLS APPLICATIONS

course held by Theodore Ganetsos, University of West Attica

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

21/04/2020

duration 8 weeks

free

English

The objective of this course is to provide an insight into the fundamentals of solar cells and describe the manufacturing processes of different types of photo-voltaics (PV). Throughout the course, students will learn the physical principles of solar irradiation and solar cell operation. Emerging concepts of polymer, hybrid and quantum-dot-based solar cells will be described including device physics, manufacturing and technological development.

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OPTIMIZATION STRATEGIES AND ENERGY MANAGEMENT SYSTEMS

course held by Moisès Graells, Universitat Politècnica de Catalunya

ASSET

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21/04/2020

duration 4 weeks

free

English

Energy is a resource that needs to be managed and decisions need to be made on production, storage, distribution and consumption of energy. Participants attending this course will learn how to recognise and formulate different optimization problems in operation management, and control of energy systems, and how to solve them using existing software and solvers. Different principal algorithms for the linear, network, discrete, and dynamic optimization are introduced and related methodologies together with underlying mathematical structures are described accordingly.

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POWER QUALITY CHALLENGES AND SOLUTIONS FOR MICROGRIDS

course held by Alexander Micallef, University of Malta

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

15/10/2020

duration 4 weeks

free

English

Microgrids are deemed as one of the main building blocks of the smart grids; since they are able to facilitate the implementation of many smart grid functions. On the other hand, the proliferation of different nonlinear and single-phase loads in electrical systems has resulted in voltage harmonics and unbalance as two common power quality problems. In addition, harmonic resonances can be excited giving rise to a significant increase of the voltage distortion. These phenomena can cause variety of problems such as protective relays malfunction, overheating of motors and transformers and failure of power factor correction capacitors.

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RENEWABLE ENERGY TECHNOLOGIES

course held by Massimo Dentice Accadia,
Università degli Studi di Napoli Federicoll

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

10/09/2020

duration 8 weeks

free

English

Renewable energy sources play a key role in the transition toward a zero-carbon society: by 2050, they are expected to supply more than 2/3 of the global energy demand, strongly contributing to reduce greenhouse gas emissions and limiting the effects of global warming. The MOOC offers an up-dated and comprehensive overview of renewable energy technologies, from technical and economic perspectives.

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TRAIN THE TRAINER

course held by Nikos Agiotis, City University of New York-Baruch College

ASSET

A Holistic and Scalable Solution for Research, Innovation and Education targeting Energy Transition

21/04/2020

duration 6 weeks

free

English

"Train the Trainer" stands for a session, which is addressed to trainers who are willing to offer trainings in adults. It has a pedagogical background and participants will learn how to teach adults in a more effective way. The main purpose of the course is to improve the trainers' capabilities to engage their audience. More specifically, by the end of the course, participants will be able to discover how adults learn and what motivates adult learners, to design training sessions, prepare and deliver training sessions, practice proven training techniques, develop effective communication, manage and engage different audiences, improve standards of teaching and training by means of reflective practice.

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