UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

MICROGRIDS

Enrollment year	2021/2022
Academic year	2021/2022
Regulations	DM270
Academic discipline	ING-IND/32 (POWER ELECTRONIC CONVERTERS, ELECTRICAL MACHINES AND DRIVES)
Department	DEPARTMENT OF ELECTRICAL,COMPUTER AND BIOMEDICAL ENGINEERING
Course	
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	2nd semester (07/03/2022 - 17/06/2022)
ECTS	3
Lesson hours	22 lesson hours
Language	English
Activity type	ORAL TEST
Teacher	ANGLANI NORMA (titolare) - 3 ECTS
Prerequisites	Models and algorithms for energy planning, power systems, energetics, machines and plants (it’s a plus)
Learning outcomes	The learning outcomes is the knowledge of microgrids (definition and configurations) and how to model sizing issues for an improved penetration of RES, the resilience concept and identification of KPIs (key performance indicators) for the implementation of a decision-support system with concurrent objectives
Course contents	Introducing the challenges of future energy systems. Definition of microgrid. Configurations (connected or islanded, AC, DC). Sizing of PV systems and storage in hybrid microgrids. Battery degradation.

	Identification and assessment of specific KPIs Resilience concept and suitable KPIs Overview on software Case study: formulation implementation and analysis of scenarios
Teaching methods	Lectures and exercises carried out together in the classroom. Hybrid delivery: in presence (sanitary conditions permitting) and simultaneously in streaming. Video recordings of the streaming available for the full lenght of the course.
Reccomended or required readings	Materials suitably made and offered on KIRO
Assessment methods	The exam consists of an interview on the full lessons/exercises taught in class
Further information	Technical integrating talks
Sustainable development goals - Agenda 2030	SDGs 7 and 11 $lbl_legenda_sviluppo_sostenibile