



PHOTOVOLTAIC SYSTEMS MANAGEMENT

Enrollment year	2020/2021
Academic year	2020/2021
Regulations	DM270
Academic discipline	ING-INF/01 (ELECTRONICS)
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRICAL ENGINEERING
Curriculum	Energetica
Year of study	1°
Period	2nd semester (08/03/2021 - 14/06/2021)
ECTS	3
Lesson hours	23 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	TORRI GIORDANO (titolare) - 3 ECTS
Prerequisites	Basic knowledge about photovoltaic plants and control theory. Principle of operation of the inverter.
Learning outcomes	<p>To provide the necessary knowledge for the design of photovoltaic plants of any power size: from small residential to large utility scale plants.</p> <p>To provide the knowledge for the integration of the photovoltaic systems with the energy storage systems and with other electric power generators, either grid connected or isolated (microgrids).</p>
Course contents	<ol style="list-style-type: none">1. Solar energy2. Photovoltaic cells.3. The production of electricity from a photovoltaic source.4. The inverter for photovoltaic applications.5. The design of the photovoltaic system.

	6. The design of outdoor equipment. 7. The connection of PV systems to storage systems. 8. The connection of PV systems to other generation systems in isolated grids (microgrid). 9. New architectures of PV systems and applications.
Teaching methods	Lectures (hours/year in lecture theatre): 23 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0
Reccomended or required readings	- Course notes 2020-2021 (Ing. Torri) - Mohan-Undeland-Robbins_ "Power Electronics", - (recommended for consultation): Teodorescu, Liserre, Rodriguez: "Grid Converters for photovoltaic and Wind Power Systems"
Assessment methods	The final exam involves an oral examination on the course topics and can include a written exercise on the sizing methods of photovoltaic systems.
Further information	The final exam involves an oral examination on the course topics and can include a written exercise on the sizing methods of photovoltaic systems.
Sustainable development goals - Agenda 2030	\$lbl legenda sviluppo sostenibile