



## PHOTOVOLTAIC SYSTEMS MANAGEMENT

Enrollment year	2019/2020
Academic year	2020/2021
Regulations	DM270
Academic discipline	ING-INF/01 (ELECTRONICS)
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRICAL ENGINEERING
Curriculum	Sistemi elettrici
Year of study	2°
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"><li>1. Solar energy</li><li>2. Photovoltaic cells.</li><li>3. The production of electricity from a photovoltaic source.</li><li>4. The inverter for photovoltaic applications.</li><li>5. The design of the photovoltaic system.</li></ol>

	<p>6. The design of outdoor equipment.</p> <p>7. The connection of PV systems to storage systems.</p> <p>8. The connection of PV systems to other generation systems in isolated grids (microgrid).</p> <p>9. New architectures of PV systems and applications.</p>
<b>Teaching methods</b>	<p>Lectures (hours/year in lecture theatre): 23</p> <p>Practical class (hours/year in lecture theatre): 0</p> <p>Practicals / Workshops (hours/year in lecture theatre): 0</p>
<b>Reccomended or required readings</b>	<ul style="list-style-type: none"> <li>- Course notes 2020-2021 (Ing. Torri)</li> <li>- Mohan-Undeland-Robbins_ "Power Electronics",</li> <li>- (recommended for consultation):</li> </ul> <p>Teodorescu, Liserre, Rodriguez: "Grid Converters for photovoltaic and Wind Power Systems"</p>
<b>Assessment methods</b>	<p>The final exam involves an oral examination on the course topics and can include a written exercise on the sizing methods of photovoltaic systems.</p>
<b>Further information</b>	<p>The final exam involves an oral examination on the course topics and can include a written exercise on the sizing methods of photovoltaic systems.</p>
<b>Sustainable development goals - Agenda 2030</b>	<p><a href="#">\$lbl legenda sviluppo sostenibile</a></p>