



20<sup>th</sup>  
year

ISTANBUL

OKAN UNIVERSITY

# Istanbul Okan University Master's Program in Power Electronics and Clean Energy Systems Issue Date

**Program:** Power electronics plays a very important role in generating and efficient usage of electrical energy from clean energy sources. Power electronics is a science that constantly evolves and has a broad range of growing applications. It is a combination of electrical, electronics and control theory fields that are processed together in a way that relies on control and conversion of electrical energy. Power electronics which has found a significant place in modern technology has been used in a wide variety of applications where electrical energy is produced and distributed such as wind turbines, photovoltaic solar panels, piezoelectric systems, fuel cells and high voltage direct current generation. It has also been used in some other important applications such as robot technologies, airplane-space technologies, automotive technologies, communication systems, electric motor drives, uninterruptible power supplies, drive-trains of electrical and hybrid electric vehicles, temperature, illumination and position controls, factory automations, etc.

## Curriculum

- Fundamentals of Engineering Mathematics
- Advanced Power Electronics
- Clean Energy Technology and Energy Storage Systems
- Harmonic Analysis and Partial Differential Equations
- Electric and Hybrid Electric Vehicles
- Theory and Design of Advanced Control Systems
- Advanced Modelling and Simulation of Dynamic Systems
- Analysis and Design of Switch-Mode Power Supplies
- DSP-Based Electromechanical Motion Control
- Real-Time Systems
- Electric Power Quality
- Dynamics of Electrical Machines
- Advanced Electric Drives



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