Aerospace Engineering **Division:**

Course Title: Design of Photovoltaic Solar Systems **Number of Credits: 3**

Course Topics:

- Introduction; solar panel structure and power electronic converters
- Structure and topology of various solar converters
- Maximum power point tracker algorithm
- Current leak in solar power inverters without transformer
- Controlling the solar power converters during grid fault
- Input and output filters for solar power converters
- Various methods of controlling current injection to the grid
- Standards and requirements of solar systems

Reading Resources:

- Teodorescu, R., Liserre, M., Rodriguez, P., "Grid Converters for Photovoltaic and Wind Power Systems", Wiley, 2011.
- Msters, G.M., "renewable and Efficient Electric Power Systems", Wiley, 2004.
- Mayfield, R., "Photovoltaic Design and Installation for Dummies", Wiley, 2010.