**Course Topics**

**EEE 565: Solar Cells**

**Catalog Description:** To introduce the basic concepts of the operation of photovoltaic devices, the major technologies, and the impact of materials and device structure on the conversion efficiency. Students will gain knowledge of the physics of operation of the major commercial solar cell technologies, and how they are integrated into solar cell systems.

**Prerequisites by Topic:**

Basic background in electronic properties of materials

**Course Topics:**

1) Photovoltaic Energy Conversion, Solar Spectrum, Light Absorption

2) Background on Semiconductor Material/Optical Properties

3) pn Junctions and Device Physics

4) Homojunction Solar Cells

5) Heterojunction Solar Cells

6) Multi-junction Solar Cells

7) Light Management

8) Organic PV/Advanced Concept Devices

9) Photochemical/Dye Sensitized Solar Cells

10) Commercial Solar Cell Technologies

11) Module and Grid Integration Issues