# PHOTOVOLTAICS, GRADUATE CERTIFICATE

**Required courses:**

| Code | Title | Hours |
|---|---|---|
| PHYS 6280 | Photovoltaic Materials And Device Physics Laboratory | 3 |
| PHYS 6630 | Semiconductors I | 3 |
| PHYS 6640 | Fundamentals of Solar Cells | 3 |
| Take one elective course of: | | 3 |
| PHYS 6250 | Classical Electrodynamics I | |
| PHYS 6320 | Quantum Mechanics I | |
| PHYS 6450 | Statistical Mechanics | |
| PHYS 6980 | Special Topics | |
| **Total Hours** | | **12** |

- Demonstrate an understanding of foundational concepts in chemistry, physics, and engineering as applied to photovoltaics.
- Demonstrate an understanding of the PV materials and devices, including\noptical, electrical, structural, and defect properties, phase transformations, and growth, materials characterization, device working principle, or applications.
- Communicate technical information clearly and accurately in written, oral, and visual formats.
- Locate and use information in the primary literature and research databases.
- Critically read, assess, and evaluate scientific publications, presentations, and data.
- Understand and observe proper safety, ethical, and professional practices.
- Apply scientific skills in an interdisciplinary scientific context.