

# 16:332:468:04 Capstone Design - Optoelectronics Spring 2011

**Instructor:** Dr. Wei Jiang  
**Time:** Wednesday 9am-12noon  
**Classroom:** EE 205  
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**Prerequisites:** 332:382 Electromagnetic Fields and 332:466 Optoelectronic Devices.

**Course Description:** Students will design and implement an optoelectronic device or system. Four steps: (1) Design; (2) Implement; (3) Testing & improve design; (4) Final Report.

## Week-by-Week Syllabus (tentative)

**Week 1:** Introduction: project goal

**Week 2:** Design: (a) Obtain the spectra of LEDs of various colors

**Week 3:** Design: (b) Understand CIE Coordinates and color matching functions

**Week 4-6:** Design: (c) Select proper LEDs and compute the power ratio required for white light

**Week 7:** Implement: (a) Understand how lenses, beam splitters, collimators work

**Week 8:** Implement: (b) Basic setup of single lens and lens-tube, splitters; set up single LED circuitry.

**Week 9-10:** Implement: (c) Assemble the entire optical system and LED circuitry

**Week 11-13:** Testing & Improve design (recalculate power ratio)

**Week 14-15:** Complete final report