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

Instructor: Dr. Wei Jiang
Time: Wednesday 9am-12noon
Classroom: EE 205
Office Hours: by appointment
Email: wjiangnj@rci.rutgers.edu
Phone: (732) 445-2164

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