

TXMI 8170 - Color Science  
FALL 2003

INSTRUCTOR: Dr. Helen H. Epps  
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CLASS SCHEDULE: Tuesday and Thursday - 12:30-1:45

OFFICE HOURS: Monday, 1:00 - 3:00  
Tuesday and Thursday, 2:00 - 4:00  
Other times by appointment if needed.

I. Catalog Description:

Development of color order systems and color theory in relation to color vision, light and optics; problems in visual and instrumental color measurement of materials with emphasis on textile materials.

II. Objectives of the Course

- A. To understand the historical development of major color order systems.
- B. To understand tristimulus color theory and the development of CIE systems (and other systems) of color measurement.
- C. To understand principles of color vision.
  - D. To understand relationships among color order systems, color measurement systems, and major theories of color vision.
  - E. To compare visual and instrumental methods of color assessment.
  - D. To evaluate coloration problems of consumer products, including textiles, with emphasis on color matching, metamerism, and color change.

III. Textbook

R. S. Berns, Billmeyer and Saltzman's Principles of Color Technology, Third Edition, John Wiley and Sons, Inc. New York, 2000.

Several supplemental readings may be required or recommended on specific topics.

IV. General Topical Outline

Light and review of optics  
Appearance of Color  
Color Vision  
Development of Color Order Systems  
Use of Color Order and Color Measurement Systems  
    Ostwald  
    Munsell  
    NCS  
    OSA  
    CIE  
    CMC  
Color and Color Difference  
Color Matching and Color Difference Calculations  
Special Problems in Color Measurement

#### V. Grading and Course Information

Course grades will be based on class participation (5%), a written midterm exam (35%), preparation and class presentation of a research paper (25%) and a comprehensive written exam (35%).

Although class assignments and laboratory assignments will not be graded specifically, they will be included in the class participation grade, and their completion will aid in preparation for the written exams.

Class attendance is expected. Students will be held responsible for all information discussed in class, regardless of attendance. There will be no provision for making up missed class lectures, demonstrations, or scheduled labs.

Make-up exams will be given only in cases of documented illness or documented emergencies.

Academic dishonesty will not be tolerated.

Dishonesty includes plagiarism in research papers and other written assignments as well as dishonesty on exams.

#### VI. Dates

Thurs, Oct 9 - Exam 1

Thurs, Dec 4 - Exam 2 (Comprehensive)

Thurs, Nov 20 & Tue, Nov 25 - student

**Tuesday, December 16 - 12:00 noon - All assignments due**