SOUNDS & COLORS – Spring 2008

PHY 105-01 3.0 Credit Hours T, H 10:25 – 11:40 AM Rm. 116 Health Sciences Bldg.

Instructor: Mr. William Lohner Rm. 173 Brehm Lab 775-3614 Bill.Lohner@wright.edu

Office Hours: Tuesday & Thursday from 12:00 - 1:00 PM. Other times available by appointment.

Text: *Physics in the Arts*. P.U.P.A Gilbert /W. Haeberli. Academic Press, 2008.

Course Description: Study of wave motion with an orientation toward phenomena experienced by our senses, such as musical sounds, noise, and the colors occurring in nature. We will explore how these phenomenon are captured by technology for our personal uses.

Course Objectives:

- Understand wave properties and characteristics, and how they are related to sound and colors.
- Understand how sound is created, perceived, propagated, and recorded.
- Understand how colors are created, perceived, propagated, and recorded.

Course Organization: The primary method of instruction for this class will be lecture and demonstrations. **The lectures and demonstrations are meant to supplement the reading assignments and may include additional information not provided in the text.** Students are responsible for all materials presented in class and in the text.

Tests and Quizzes: There will be three exams and three quizzes during the course. Two exams out of three and two quizzes out of three are required. The third in-course exam will be a make up exam and will cover material from the first two exams. The Final Exam is required. All tests and quizzes will be multiple choice. Quizzes will be given during the last 20 minutes of the class. If a student is not present at the start of the quiz the student will not be allowed to take the quiz. No make-up quizzes will be given.

Grading:

Two exams @ 100 points each	200 points
Final Exam	100 points
Quizzes	30 points
TOTAL	**330 points**

Grading Scale:

A (90% and above)
B (80%-89%)
C (70%-79%)
D (60%-69%)
F (59% and under)

Tentative Course Schedule:

Week 1 Introduction; Wave Properties and Nature of Waves
Week 2 Sound Waves
Week 3 Wave Analysis & Harmonics; Quiz 1
Week 4 Human Ear & Voice
Week 5 Musical Instruments; Exam 1
Week 6 Properties of Light; Colors; Quiz 2
Week 7 Lenses & Image Formation
Week 8 Human Eye; Exam 2
Week 9 Conventional & Digital Camera; Video recorders; Quiz 3
Week 10 Sound Reproduction; Exam 3

Comprehensive Final Exam:

TBA

Student Code of Ethics

Please understand the policies of the university. They will be adhered to in this course.

LABORATORY: Concurrent registration in, or previous completion of, PHY 115 is required. See Mr. William Wagner, Laboratory Director, (Rm. 239 Fawcett) about problems related to the laboratory class.