SYLLABUS

Professionalism in Science
PHY 115

FALL 2004

Wayne State College
Physical Science and Mathematics
**COURSE DESCRIPTION:**

**PHY 115**
**Professionalism in Science**

*Fall 2004*

**Credits 2**

**Instructor:** Dr. J. Bauer
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**Office Hours:**
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**Description:** A course presenting professional issues pertinent to engineers and scientists along with an overview of the various engineering and science disciplines. A course primarily intended for pre-engineers. Case studies based on actual technical problems will be presented by practicing engineers and scientists.

The course is a requirement for pre-professional studies in engineering.

**Prerequisite:** None

**Class Meeting Time/Place:** 9:00-9:50 A.M. TR, CH 22

**COURSE COMPETENCIES:** The course will adhere to the Accreditation Board for Engineering and Technology (ABET) Engineering Criteria 2000. More specifically, the course will concentrate on criterion 3(a), 3(c), 3(e), and 3(k).

The student will demonstrate:

(a) An ability to apply knowledge of mathematics, science, and engineering,

(c) An ability to design a system, component, or process to meet desired needs,

(e) An ability to identify, formulate, and solve engineering problems, and

(k) An ability to use techniques, skills, and modern engineering tools necessary for engineering practice.

**COURSE GOALS:** It is the course’s intent:

- To provide a sound knowledge base in engineering analysis,
- To increase the student’s ability to rationalize and organize information,
• To provide the student with means for applying learned concepts to specific situations,
• To demonstrate the use of Microsoft Excel for analyzing and solving engineering and applied science problems,
• To develop students’ communication skills,
• To provide opportunities for collaboration and team building, and
• To develop motivation for self-responsibility, life-long learning, and self-development of a person of good character.

INSTRUCTIONAL MATERIALS:

Required Text:


References:


Recommended Equipment: Graphing calculator, downloaded version of Linux, Microsoft Excel.

Resources/Equipment: Excel (accessible from WSC network) and Linux (accessible from the MAT Linux-lab)

COURSE OUTLINE:

I. Engineering Success
II. Engineering Ethics
III. Dimensions and Units
IV. Analysis Methodology
V. Introduction to Excel
VI. Excel Functions and Matrix Operations
VII. Macros in Excel and VBA Programming
VIII. Project Example
IX. Excel Statistics and Data Analysis
X. Introduction to Team Project
XI. Technical Writing
XII. Introduction to Unix
XIII. Work on Team Project
XIV. Open Week
XV. Team Presentations

EVALUATION: Students may be evaluated on the basis of test scores, attendance, and a team project. Test Scores will be worth 40% of the student’s final grade, attendance will be worth 20%, and the team project will be worth 40%. Grades will be determined on 10% intervals, i.e. the 90s are an A, the 80s are a B, ... The team project will be in lieu of a comprehensive final.
WSC STATEMENT OF STUDENT RESPONSIBILITIES:

Wayne State College strives to develop students of a wide range of academic abilities through quality teaching and support. It is our desire to prepare students to accept the privileges, duties, and responsibilities of global citizens; to develop moral and ethical values, to encourage creative ability and develop aesthetic judgments, to encourage the ability to think critically about their world and work; and promote competence in and understanding of fields of knowledge which are required of educated people.

To this end we, the faculty and staff of WSC, have established a standard of student responsibilities in the following statement:

All students will:

Take responsibility for their education. This will include:

- Being knowledgeable of academic requirements and college policies concerning registration, academic standing, payment of tuition and fees, withdrawal and graduation.
- Initiating communication with faculty, advisors and administration regarding questions, concerns and intellectual dialogue.

Cultivate an attitude of integrity both in and out of the class. Integrity is demonstrated by:

- Showing courtesy, dependability, honesty, and respect for instructor expectations concerning attendance, assignments, deadlines and appointments.
- Showing courtesy and respect toward others with diverse points of view in and out of class.
- Displaying a positive work ethic and a genuine interest in welfare of others.