**COURSE INFORMATION FORM**

**DISCIPLINE**    Environmental Health and Safety  
**COURSE TITLE**   Analytical Applications for EHS  
**CR.HR**    3  
**LECT HR.**  3  
**LAB HR.**  
**CLIN/INTERN HR.**  
**CLOCK HR.**  

**CATALOG DESCRIPTION**

This course covers some of the everyday problems and questions that confront EHS professionals, such as ergonomics, ventilation, noise abatement, radiation, thermal stress, hazardous material concentrations, and environmental sampling.

**PREREQUISITES**

MATH 103 or higher

**EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)**

Upon completion of this course, the student will be able to:
1. Demonstrate problem solving skills including ability to interpret problem situations.
2. Determine air concentration (Time-Weighted Average) based on multiple samples.
3. Explain the basic concepts of statistics including number of samples to be statistically significant.
4. Apply basic probability theory as it applies to probability of incidents occurring.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>ESO</th>
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PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1. Students will demonstrate the ability to apply foundational skill in an industrial setting, safely and to industry guidelines.
2. Students will think critically and apply problem-solving skills.
3. The program will graduate individuals who exhibit competence in the entry-level skills of technical profession environmental health and safety technology.
4. The program will graduate individual who can interact and communicate with managerial, supervisory, labor and external public using a combination of skills for a clear exchange of ideas and information.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes may be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

1. Assignments, (1-4)
2. Written examinations, (1-4)
3. Student participation and In-class discussions, (1-4)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Industrial Hygiene Chemistry
   A. Moles, Gram, Concentrations
   B. pH
   C. Pressure, Volume, Temperature

II. Air Sampling
   A. Sampling Rates and Volumes
   B. Time Weighted Average

III. Industrial Ventilation & Engineering Controls
   A. Total, Static and Velocity Pressure
   B. Air Flow, Velocity and Area
   C. Coefficient of Entry of Hoods
   D. Dilution Ventilation

IV. Noise
   A. Sound Pressure Level
   B. Time Weighted Average

V. Ionizing and Non-Ionizing Radiation
   A. Half-life
   B. Wavelength and Frequency

VI. Heat Exposures
   A. Wet Bulb Globe Temperature
   B. Heat Transfer
   C. Heat Stress Index

VII. Sampling Statistics and Probability