COURSE DESCRIPTION:

Prerequisites: Take DMA 010, 020, 030, 040, 050, 060 or satisfactory score on placement test
Corequisites: EHS 212

This course emphasizes the recognition, evaluation, and control of occupational health hazards. Topics include hazard recognition, health standards, air sampling, ventilation, noise exposure, and temperature stress. Upon completion, students should be able to identify and quantify common occupational health hazards. Course Hours Per Week: Class, 5. Semester Hours Credit, 5.

COURSE OBJECTIVES:

Upon completion of this course, the student will be able to:

a. Understand the basic principles of toxicology.
b. Evaluate the potential of chemical agents to produce dermatitis.
c. Understand the potential hazards of industrial dusts, mists, and fumes.
d. Understand the principles of personal air sampling.
e. Evaluate compliance with OSHA and ACGIH standards.
f. Select appropriate ventilation systems for a particular hazard.
g. Select appropriate respiratory protection for a particular hazard.
h. Implement an OSHA-mandated hearing conservation program.
i. Assist in the performance of an indoor air quality investigation.

OUTLINE OF INSTRUCTION:

I. Toxicology basics
   A. Classes of toxic effects
   B. Measuring toxicity
   C. Toxicokinetics

II. Occupational Skin Diseases
   A. Skin anatomy
   B. Irritant contact dermatitis
   C. Allergic contact dermatitis
   D. Other skin diseases
   E. Prevention of occupational dermatitis
III. Respiratory Hazards
   A. Anatomy and physiology of the respiratory system
   B. Particle deposition mechanisms
   C. Pneumoconioses
   D. Occupational asthma
   E. Hazards of gases and vapors

IV. Industrial Hygiene evaluation: air monitoring
   A. Units for air contaminants
   B. OSHA and ACGIH standards
   C. Area vs. personal sampling
   D. Personal sampling train
   E. Analytical methods
   F. Direct-reading instruments

V. Control of airborne hazards: ventilation
   A. Types of ventilation systems
   B. Components of local exhaust systems
   C. Types of hoods
   D. Air cleaners, fans, and stacks

VI. Respiratory protection
   A. Types of respirators
   B. Selection of respirators
   C. Respirator programs
   D. Confined space entry

VII. Confined space standard
   A. Definitions
   B. Examples of confined spaces
   C. Written program elements
   D. Duties of defined individuals
   E. Rescue

VIII. Occupational noise exposure
   A. Anatomy of the ear
   B. Physics of sound
   C. Measurement of sound
   D. Standards and Hearing Conservation Program
   E. Control of occupational noise hazards

IX. Temperature Stress
A. Control of body temperature  
B. Illnesses caused by temperature extremes  
C. Evaluating heat and cold stress  
D. Exposure standards

REQUIRED TEXTBOOKS AND MATERIALS:


American Conference of Governmental Industrial Hygienists, 2006 *TLVs and BEIs.* Cincinnati, Ohio: ACGIH, 2006 (or recent edition).

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 919-536-7207, ext. 1413 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1209.