



Marshall University
College of Information Technology & Engineering
Safety Technology Department

Fall 2008

INDUSTRIAL HYGIENE I
SFT 454

LOCATION: Gullickson Hall, Room 5 (Basement Floor), Huntington Campus

TIME: Wednesdays, 4:00pm-6:20pm

INSTRUCTOR: J. Patrick Conlon, CSP
Safety Technology Department
Communications Bldg., Room 212-I
Huntington Campus
Office Phone – 304.696.3067
Department Fax – 304.696.3070
Email – conlonj@marshall.edu

OFFICE HOURS: Tuesdays – 1:30pm to 3:30pm, 6:30pm-8:30pm
Wednesdays – 1:30pm to 3:30pm
Thursday – 1:30pm to 3:30pm
Other times by appointment.

DESCRIPTION: This 3 credit course introduces the student to the theory and practice of industrial hygiene and the assessment of human exposures to chemical hazards in the workplace. As an applied science course the knowledge and skills from introductory biology, chemistry, math, and physics courses are essential for success. The student will become familiar with the legal requirements and management concepts applicable to the current practice of industrial hygiene, environmental assessment and worker protection.
Prerequisites – SFT 489, CHM 212, CHM 218, PHY 203 or PHY 212, PHY 204, all with a minimum grade of C
Corequisites – SFT 454L

TEXTBOOK: *Fundamentals of Industrial Hygiene*
Plog, Barbara, A., and Quinlan, Patricia, J., 5th Edition, 2002
National Safety Council, Itasca, IL, ISBN-13: 978-0-87912-216-4

- OUTCOMES:** Successful completion of the course will enable the student to:
- Discuss the scientific, technical, and management principles that define the practice of industrial hygiene;
 - Explain the legal requirements that impact the current practice of industrial hygiene in the U.S.A.;
 - Perform basic calculations relative to the evaluation and control of hazardous occupational health exposures;
 - Evaluate potential occupational health concerns using industrial hygiene assessment strategies; and
 - Recommend administrative controls, engineering controls, work practices, and personal protective equipment to eliminate or reduce worker exposures.

EVALUATION: Exams/200 points each – three per semester, each will include a combination of multiple choice, true/false, essay questions, and problem solving based on the textbook assignments and classroom activities.

Team Projects/100 points each – complete three case study projects in a group setting involving Internet research, problem solving skills, creative thinking skills, mathematical problem solving and effective management style report writing. Each team will present their results or findings during classroom discussions and submit written project reports.

Class Attendance & Participation/100 points – students are expected to attend all scheduled classes and participate in class discussions and activities.
[1st absence = -5 points, 2nd absence = -5 points, 3rd absence = -10 points, and each subsequent absence = -10 points]

Total Possible Points = 1,000

Note: Extensions to exam and assignment deadlines must be approved in advance by the instructor.

- GRADING:** Grades will be awarded according to the following scale:
- 90% - 100% = A
 - 80% - 89% = B
 - 70% - 79% = C
 - 60% - 69% = D
 - 59% or lower = F

- ACTIVITIES:** Classroom activities will include:
- PowerPoint Presentations & Lectures
 - Multimedia Presentations
 - Critical Thinking Exercises Using Case Studies
 - Industrial Hygiene Problem Solving

TECHNICAL

REQUIREMENTS: Ability to use basic computer software for Internet research, word processing, visual presentation and a calculator for mathematical problem solving.

SCHEDULE OF ASSIGNMENTS & ACTIVITIES:

1. 8/27/08:
Introductions & Course Overview
Multimedia: Careers in Industrial Hygiene
Assignment: Chapters 1 & 6
2. 9/3/08:
Lecture: Industrial Hygiene & Toxicology
Multimedia: Caution – Foundry at Work
The Silent Sniper – Hydrogen Sulfide
Assignment: Chapter 7
3. 9/10/08:
Lecture: Gases, Vapors, & Solvents
Multimedia: Leaded Gasoline – Trading IQ for Octane
Case Study #1 – Laboratory Hood Hazard
Assignment: Chapter 23 (The Industrial Hygienist)
4. 9/17/08:
Team Project: Case Study #1 – Laboratory Hood Hazard
Assignment: Chapter 8
5. 9/24/08:
Lecture: Particulates
Multimedia: Asbestos – Magic Mineral, Killer Dust
Team Project: Case Study # 1 – Laboratory Hood Hazard Reports
Assignment: Prepare for Exam #1 (Chapters 1, 6, 7, 8, & 23)
6. 10/1/08:
Exam # 1
Team Project: Case Study # 2 – Battery Plant Risk Assessment
Assignment: Chapter 15
7. 10/8/08:
Review Exam #1
Lecture: Evaluation
Multimedia: Hazard Communication
Team Project: Case Study # 2 – Battery Plant Risk Assessment
Assignment: Chapter 16

8. 10/15/08:
Lecture: Air Sampling
Multimedia: Benzene Safety
Team Project: Case Study # 2 – Battery Plant Risk Assessment Reports
Assignment: Chapter 17
9. 10/22/08:
Lecture: Direct-Reading Instruments
Multimedia: Confined Space Entry – Part 1
Assignment: Chapter 18
10. 10/29/08:
Lecture: Methods of Control
Multimedia: Confined Space Entry – Part 2
Assignment: Chapter 22
11. 11/5/08:
Lecture: Respiratory Protection
Multimedia: Respirators – Your TB Defense
Air Purifying Respirators
Supplied Air Respirators
Team Project: Case Study # 3 – Confined Space Entry
Assignment: Prepare for Exam #2 (Chapters 15, 16, 17, 18, & 22)
12. 11/12/08:
Exam # 2
Team Project: Case Study # 3 – Confined Space Entry
Assignment: Chapter 19
13. 11/19/08:
Review Exam #2
Lecture: Local Exhaust Ventilation
Essential Industrial Hygiene Concepts/Calculations
Team Project: Case Study # 3 – Confined Space Entry
Assignment: Chapter 20
14. 11/26/08:
Fall Break – No Class
15. 12/3/08:
Lecture: Dilution Ventilation
Essential Industrial Hygiene Concepts/Calculations
Team Project: Case Study # 3 – Confined Space Entry Reports
Assignment: Prepare for Exam #3
(Chapters 19, 20, & Essential Industrial Hygiene
Concepts/Calculations from exams 1, 2 and case studies)
16. 12/10/08:
Exam # 3

**ADDITIONAL
NOTICES:**

Plagiarism/Academic Honesty/Academic Integrity – cheating, fabrication/falsification, plagiarism, etc., shall be subject to University policy as described in the current Undergraduate and Graduate catalogs.

Student Disabilities – students entitled to academic accommodations during the course are encouraged to contact Disabled Student Services (304.696.2288/Prichard Hall Room 117) as soon as possible to ensure that reasonable accommodations can be provided.

Academic Support Services – students interested in academic support services (advising, tutoring, and writing) are encouraged to contact the University College’s Academic Advising Center for free programs and services to help them succeed in college courses (located in the Community and Technical College Building, lower level, 304-696-3169).

Weather-Related and/or Emergency Closings and Delays – students must adhere to the University policies for these events/conditions. Please contact the instructor by phone prior to class if you will miss class due to your local weather conditions if the University is still open. For information concerning the University status during inclement weather or emergencies will be available on local radio and television channels or call (304) 696-3170 or (304) 696-HELP.

Attendance – students are expected to attend all scheduled classes following the University policy for excused absence and weather related class cancellation as applicable. Students should notify the instructor of an absence prior to the class by voice mail or email. In the event of an excused absence class work can be made up within one week with scheduling and approval of the instructor.

