



Marshall University
College of Information Technology & Engineering
Safety Technology Department

Fall 2007

INDUSTRIAL HYGIENE I
SFT 454

LOCATION: Smith Hall, Room 335, 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 – 2:00pm to 6:00pm
Wednesdays – 10:00am to Noon
Thursday – 2:00pm to 4:00pm
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. Human anatomy, physiology, and pathology with respect to occupational injury and illness will be reviewed. The student will become familiar with the legal requirements and management concepts applicable to the current practice of industrial hygiene 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; and
- Evaluate potential occupational health concerns using industrial hygiene assessment techniques;
- Recommend administrative controls, engineering controls, work practices, and personal protective equipment to eliminate or reduce worker exposures.

EVALUATION:

Exams/100 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/200 points – complete ten projects in a group setting involving mathematical problem sets and case studies. 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 = 600

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 and a calculator for mathematical problem solving.

SCHEDULE OF ASSIGNMENTS**& ACTIVITIES:**

1. 8/22/07:
Introductions & Course Overview
Multimedia: Careers in Industrial Hygiene
Assignment: Chapters 2, 3, 4, 5
2. 8/29/07:
Lecture: Human Anatomy, Physiology, & Pathology
Multimedia: Caution – Foundry at Work
Assignment: Chapters 1 & 6
3. 9/5/07:
Lecture: Industrial Hygiene & Toxicology
Multimedia: Leaded Gasoline – Trading IQ for Octane
Assignment: Chapter 7
4. 9/12/07:
Lecture: Gases, Vapors, & Solvents
Multimedia: Up From Zero – World Trade Center Disaster Response
The Silent Sniper – Hydrogen Sulfide
Team Project: Case Study #1
Assignment: Chapter 8
5. 9/19/07:
Lecture: Airborne Particulates
Multimedia: Asbestos – Magic Mineral, Killer Dust
Team Project: Case Study #2
Assignment: Prepare for Exam #1 (Weeks 1, 2, 3, 4, & 5)
6. 9/26/07:
Exam # 1
Team Project: Case Study #3
Assignment: Chapter 15

7. 10/3/07:
Review Exam #1
Lecture: Hazard Evaluation
Team Project: Case Study #4
Assignment: Chapter 16
8. 10/10/07:
Lecture: Air Sampling
Team Project: Case Study #5
Assignment: Chapter 17
9. 10/17/07:
Lecture: Direct-Reading Instruments
Team Project: Case Study #6
Assignment: Chapter 18
10. 10/24/07:
Lecture: Methods of Hazard Control
Team Project: Case Study #7
Assignment: Chapter 22
11. 10/31/07:
Lecture: Respiratory Protection
Multimedia: Respirators – Your TB Defense
Team Project: Case Study #8
Assignment: Prepare for Exam #2 (Weeks 7, 8, 9, 10, & 11)
12. 11/7/07:
Exam # 2
Team Project: Case Study #9
Assignment: Chapters 23 & 27
13. 11/14/07:
Review Exam #2
Lecture: The Industrial Hygienist & Industrial Hygiene Programs
Team Project: Case Study #10
Assignment: Chapters 25 & 26
14. 11/21/07:
Fall Break – No Class

15. 11/29/07:
Lecture: Occupational Medical Programs
Team Project: IH Calculations Review
Assignment: Prepare for Exam #3
(Weeks 13, 14, & IH Calculations/Exams 1 & 2)
16. 12/5/07:
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.

