

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

INDUSTRIAL HYGIENE
ENV 2030

Class Hours: 2.0

Credit Hours: 3.0

Laboratory Hours: 3.0

Date Revised: Summer
01

Catalog Course Description:

A study of the general considerations in industrial hygiene with emphasis on topics such as air contaminants, ionizing and nonionizing radiation, light, heat, noise, and microbiological hazards.

Entry Level Standards:

Students entering this course must have basic skills in reading comprehension, and written communication.

Prerequisites:

None

Textbook(s) and Other Reference Materials Basic to the Course:

Fundamentals of Industrial Hygiene: The National Safety Council, 1988.
NIOSH Pocket Guide to Chemical Hazards: U.S. Department of Health and Human Services

I. Week/Unit/Topic Basis:

| Week | Topic |
|-------------|---|
| 1 | History and Development, An overview of Industrial Hygiene. |
| 2 | Anatomy, Physiology, and Pathology. The Lungs |
| 3 | Anatomy, Physiology, and Pathology. The Skin |
| 4 | Anatomy, Physiology, and Pathology. The Ears |
| 5 | Anatomy, Physiology, and Pathology. The Eyes |
| 6 | Solvents |
| 7 | Particulates |
| 8 | Respiratory Protective Equipment |
| 9 | Industrial Noise |
| 10 | Temperature Extremes |

- 11 Ionizing Radiation
- 12 Ionizing Radiation
- 13 Nonionizing Radiation
- 14 Ergonomics
- 15 Monitors
- 16 Final Exam

II. Course Objectives*:

- A. Demonstrate an understanding of the history and importance of industrial hygiene and the personal responsibility for effective programs. I
- B. Demonstrate an understanding of nonionizing and ionizing radiation. IV
- C. Demonstrate an understanding of the effects of heat and noise on the worker. IV
- D. Demonstrate an understanding of microbiological hazards. I
- E. Demonstrate an understanding of the proper types ventilation. IV

*Roman numerals after course objectives reference goals of the CHT program.

III. Instructional Processes*:

Students will:

- 1. Prepare short research papers. *Communication. Outcome, Information Literacy Outcome, Active Learning Strategy*
- 2. Participate in classroom discussions which challenge the student' ability to think creatively and visualize complex spatial relationships. *Communication Outcome, Active Learning Strategy*
- 3. Emphasize individual and corporate environmental relationships in written assignments and discussions. *Personal Development Outcome, Transitional Strategy*

*Strategies and outcomes listed after instructional processes reference Pellissippi State' s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

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

- 1. Explain industrial hygiene. A
- 2. Describe the difference investigation program such as job safety analysis, safety training and identifying the hazards. A
- 3. Identify and explain the various types of air contaminants, such as dusts, gases, vapors, fumes and mists. E

4. Identify and explain the following terms: toxicity, toxic hazard, acute, chronic, LD, T.L.V., and T.W.A. A
5. Describe the sources of toxicological information. A
6. Identify the types of samples of air contaminants, short-term or grab sample and long-term samples. A
7. Combat the hazards for contaminated air. A
8. Identify and explain the types of nonionizing radiation. B
9. Describe the effects of nonionizing radiation. B
10. Evaluate and detect the hazards of nonionizing radiation. B
11. Identify and explain the types of ionizing radiation. B
12. Describe the effects of ionizing radiation. B
13. Evaluate and detect the hazards of ionizing radiation. B
14. Describe the factors affecting quality of vision. C
15. Describe the character, quantity, and quality of light. C
16. Evaluate and detect the hazards of heat. C
17. Describe, detect, and protect the hazards of noise. C
18. Identify and detect the microbiological hazards. D
19. Describe the types of ventilation. E

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures: 95 % of grade

Unit Exams (60 points)

There will be 5-8 unit exams during the course. They will include short answer questions, and true/false questions.

2. Laboratory Reports (25 points)

3. Comprehensive Final Exam (10 points)

B. Laboratory Expectations: 5% of grade

1. Participation (5 points)

After each Lab a report is due within the next week. Based on the instructor observation during the course, each student will be evaluated on participation activities. Evaluation parameters to include active participation in class discussions, being prepared, striving to achieve more than minimum requirements and regular attendance.

2. Make-up Exams: As a general rule, no make-up exams will be administered during the course.

3. Counseling: Counseling is available during posted office hours or by appoint. Laboratory tests will include the following.

1. Particulate sampling
2. Respirator Use and Fit testing
3. Gas Sampling
4. Noise sampling
- 5 Heat stress sampling
6. Radiation sampling

C. Field Work:

N/A

D. Other Evaluation Methods:

N/A

E. Grading Scale:

| | |
|----------|----|
| 92 - 100 | A |
| 88 - 91 | B+ |
| 83 - 87 | B |
| 79 - 82 | C+ |
| 74 - 78 | C |
| 65 - 73 | D |
| Below 65 | F |

VI. Policies:

Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course (Pellissippi State Catalog). Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent.