ENVIRONMENTAL PROGRAM/SAMPLING

SFT 454L

FALL 2002

TEXT: Fundamentals of Industrial Hygiene; Plog, Barbara, Ed.; 4th ed.; 1996, National Safety Council, Itasca IL.
COMPUTER REQUIREMENTS: Ability to use the Internet and Word Processing Software.
INSTRUCTOR: Dr. John A. Singley, 212C Communications Building
Office hours posted in the department, see Department Administrative Secretary.
Phone 696-3067
Email: Singley@marshall.edu.
COURSE DESCRIPTION: The course will cover the quantitative monitoring techniques for measuring air and water quality. The measurements of noise and chemical pollutants also will be covered. The evaluation of physical hazards will be covered.
PREREQUISITES: This course can be taken concurrently with SFT 454 or after completion of 454. Other prerequisites are: Chemistry 212 and Mathematics 140.
LEARNING OUTCOME: The course is designed to give the student the necessary information to establish and industrial environmental and/or industrial hygiene monitoring program. Areas covered will include information on manufacturers, models and designs of monitoring equipment. In addition, the course will include strategies of choosing the best monitoring devices and monitoring strategies. Why various strategies are used also will be studied. Also covered will be the theory and the science behind air sampling. Moreover, students will have an opportunity to have hands-on experience with the several monitoring devices that will be used during the semester.
EVALUATION AND MEASUREMENTS OF STUDENT PROGRESS: The student will be responsible for both lecture and reading material. A term paper about some aspect of Industrial Hygiene or Environmental monitoring is required. The paper is due the llth week of class. Late papers will result in a lower grade. Start your paper early. Since you have ll weeks, there are no excused late papers. Not even a broken computer or lost disk etc. etc. The paper needs to be no less than 10 pages in length and include at least 12 references. The style of the paper is that used for leading Industrial Hygiene journals or Environmental journals. The student will be expected to complete a series of hands on exercises and to turn in reports of these exercises on the week following the exercise. The format of the report should include a brief history of the subject, a description of the methods and materials used, the data obtained, the conclusions or results of the exercise and a brief discussion of what these results mean. Students will work in pairs for each exercise unless there is an odd number in which case a group may have three. The reports of the exercise are to be typed, although original handwritten numerical data may be part of the report. The grade for the exercise will be the same of all members of each team, so team work is important. The format for each week will be first class session a lecture and the next two sessions the students will work on the exercises for those weeks listed in the course outline.
GRADING POLICY: Exercises and reports 60% (10% each exercise), Term paper 20%, Quizzes 20%.

ATTENDANCE POLICY: Attendance at each scheduled class session is expected and lack of attendance will influence your final grade. Further, since students are preparing to enter a profession where they will be expected to be punctual for meeting and their reports, we will start the training early in the classroom. Tardiness for class and of reports could result in a lower grade. There will be no classes during a scheduled University break or holiday.

POLICY STATEMENT: Issues of Academic dishonesty, absenteeism and grading will be as specified in the University catalogs. Absences for medical reasons are allowed providing the student presents a written excuse from a Physician. Absences for business reasons or for an immediate family emergency may be considered if contact is made with the instructor on a timely basis. Business reasons require a letter from your employer on company letterhead stationary. Any exercise that is missed must be made up with the cooperation of your partner. The students will be responsible for completion of missed exercises on a timely basis. Laboratory reports are due one week following the completion of the exercise. No late reports are acceptable for any reason.

COURSE OUTLINE:

Wk 1 Monitoring. What's it all about? p 461-479, 485-494.
Wk 2 Hazardous Materials. p 7-21, 124.
Wk 3 Calibration p 496-507, 511-513
Exercise 1 and report.
Wk 4 Detector Tubes and Dosimeters. p 517-520.
Exercise 2 and report.
Wk 5 Hour Quiz 1
Wk 6 Combustible Gas Indicators. p 510-514.
Exercise 3 and report.
Wk 7 Detectors for Oxygen, Toxic Gases and Combustible Material. p 5-10-515.
Exercise 4 and report.
Wk 8 Photo Ionization Detectors. p 521-522.
Exercise 5 and report.
Wk 9 Flame Ionization Detectors. p 520-521, 524.
Wk 10 Hour Quiz 2.
Wk 11 Multi Specific Gas Detectors. p 510-515.
Wk 12 Radiation Detectors. p 258-264.
Exercise 6 and report.
Wk 13 Particulate Sampling. p 489-496.
Wk 14 Hour Quiz 3