California State University, Northridge
Environmental and Occupational Health Department

EOH 101
INTRODUCTION TO ENVIRONMENTAL HEALTH

COURSE SYLLABUS

Course Objectives:

As a result of this course, the student will be able to:

1. Outline the fundamental concepts of food safety
2. Identify the major sources of food-borne pathogens and their control
3. Discuss the contributing factors for a food-borne illness to occur
4. Identify the control measures for maintaining public food safety
5. Outline the process of communicable disease control
6. List the control points for of air pollution in the automobile
7. Identify environmental risk factors and impacts on society.

SUMMARY OF TOPICS:

1. Food Sanitation
2. Food-Borne Illness
3. Canned and frozen foods
4. Communicable Disease
5. Insect Vector and Rodent Control
6. Bio Terrorism
7. Radiation
8. Air Pollution

COURSE REQUIREMENTS:

Three Exams of equal weight will be given. The exams are not cumulative. Exams will be based on lecture and reading material.

Grades will be distributed as follows:

A 90%
B 80%
C 70%
D 60%
F < 59 %

Plus or minus system will be utilized for individual students between grades.
No make-up exams will be given. The lowest grade will be doubled. Students must take the final exam. No exam will be given before the scheduled exam.

CONTACT INFORMATION:

Dr. Owen Seiver

Office: 2101 I
Office Hours: M W 9:00-9:30
M 1300-1600
F 1400 by appointment

818-677-2347
owen.seiver@csun.edu

Exam dates will be announced a minimum of one week before the exam.

SYLLABUS FOR EOH 101 (Class #12542), Fall 2005
Tuesday-Thursday, 1230-1345 (12:00 PM-1:45 PM) in JD1551

Instructor: Antonio F. Machado, Ph.D. e-mail: amachado@csun.edu
Office: JD1519 Telephone: (818) 677-2065 Office Hours: tba
Text: Our Global Environment (Fifth Edition) by Anne Nadakavukaren

EXAMS

Grading for this course will be based in equal parts on three midterm exams, and a **cumulative** final. The final exam will be on Thursday, December 15, 2005 at 1245 (12:45 PM). The format for all exams will be short answer and essay questions. Questions will be based on lecture and reading assignments. **No** makeup tests will be permitted.

GRADING

Midterm Exams.....200 points
Final Exam.....100 points
Paper.....100 points

Course grades will be based on the following scale:
A – A- = 90% and above
B+ - B- = 80% - 89%
C+ - C- = 70% - 79%
D+ - D- = 60% - 69%
F = 59% and below

ACADEMIC INTEGRITY

All forms of academic dishonesty (cheating, plagiarism, etc.) are expressly forbidden by District rules and will not be tolerated in this course. Any student who violates these rules will receive the grade of "F" and be subject to disciplinary action by the University. If you have any questions as to what constitutes cheating and/or plagiarism, make sure you ask me (and refer to Appendix C of the Student Catalog).

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
Department of Health Sciences College of Health & Human Development

H. Sci. 132 History of Preventative Medicine and Public Health
Fall 2005
Instructor: Dr. John Schillinger JD 1525, phone 677-3449
Email: john.schillinger@csun.edu

Office Hours: MW 1000-1100
Fri 0830-0930

Text: Rosen, G. A History of Public Health

Readings for History of Public Health

Course Description

The historical development of the disease processes, concepts, and the institutions concerned with public health.

Rationale

The course emphasis is on the importance of a population-based approach to the challenges of maintaining optimum health and well-being. How matters of individual health relate to the health of communities and nations is studied in historical context.

The importance of the physical environment and ecological factors such as zoonoses and water quality are the historical foundations for modern public health. The social, cultural and economic factors that shaped public health activity in this country are especially relevant today as the nation struggles with a financial medical care crisis and an obesity related epidemic of chronic disease. AIDs and other emerging diseases also pose serious threats to the health of the US population. Violence or the threat of mass violence also has reached a new level of threat for the health of large numbers.

How the nation and the public health community respond to these challenges is shaped in large part by past successes and failures. Without a basic understanding of that history and the evolution of our public health institutions, progress is very difficult. Important lessons can be learned from the actions of courageous men and women who have shaped public health thus far, and students who are not conversant with regard to that history may well be perceived as ineffectual.

Future trends in aging, population growth, environmental disruption, science and technology etc, will conclude the course and make clear the challenge to all who are interested in creating a safe and humane future.

Method of Evaluation

Exams - Three exams will be given consisting of multiple choice and short essay questions. They will be based primarily on lecture information. The exams will be scheduled about every four weeks and dates announced in class.

Papers - The papers will be judged on grammar, comprehensiveness and neatness. A rubric for grading will be developed with the class.

Grading –Grades will be assigned according to rank of total points accumulated from two quizzes (25% each , a final exam (30%), and the paper (20%).. Grades will be based generally on 90-100% = A, 80-89 % = B, 65-79% =C, 55-64% = D, and < 55 = F. Class attendance will be considered in assigning borderline grades and the +/- system will be used sparingly.

Academic dishonesty will not be tolerated. Advice on plagiarism must be obtained if any doubt exists before a paper is submitted. Phones and pagers will be silent during class.

End of the Dark Ages
- Second Agricultural Revolution
- Population Explosion
- Crusades & Islam
- Universities

Middle Ages
- More Ecological Disasters

Modern Europe (1500 AD)
- Agriculture
- Commerce & Technology
- Birth of Science

More Public Health Disasters
- Witches
- The Great Pox
- Sweats, Fevers, Plague
- The Smallpox

The Great Transition
- New Ecology
- Industrial Revolution

The Enlightenment (1750-1830 The Age of Reason)
- John Locke
- French Philosophers & Human Rights
- Humane Societies

Sanitary Reform in England
- Industrialization as Public Health Disaster
- Factory Reforms
- Jeremy Bentham – Philosophical Necessity
- Edwin Chadwick & The Report
- The Public Health Acts

Sanitary Reform in the United States
- Immigrants and Epidemics
- Quarantine vs Sanitation
- Lemuel Shattuck
- John Griscom, MD
- Department of Public Health in NYCity
- National Public Health Service

Epidemiology and Public Health

- Toxic Waste Crisis
- Global Health Threats

Occupational Health
- Early History
- Coal Mine Disasters
- OSHA
- Worker Right-to-Know

The Wellness Movement
- Fitness Fad?
- Major Health Risks
- Health Promotion Agenda

Public Health Futures
- Facts About the Future
- Unfinished Business

Meadows, D. et al. Beyond the Limits, 1992, Chelsea Green Pub.

Mckeown, T. The Modern Rise of Population, 1976, Academic Press.

McNeill, W. H. Plagues and Peoples, 1977, Doubleday.

Meckel, R.A. Save the Babies: American Public Health Reform and the Prevention of Infant Mortality, 1850-1929, 1990, John Hopkins University Press.

Perlin, J. A Forest Journey: The Role of Wood in the Development of Civilization, 1989, N. N. Norton and Co.

Ponting, C. A Green History of the World, The Environment and the Collapse of Great Civilizations, Penguin Books.

Ring, M.E. Dentistry: An Illustrated History, 1985, Abradale Press.

Rhodes, P. An Outline History of Medicine, 1985, Butterworths.

Rosen, G. A History of Public Health, 1958, M.D. Publications Co.

Sigerist, H. E. Civilization and Disease, 1970, McGrath Publishing Co.

Silver, C.S. and R.S. DeFries. One Earth One Future: Our Changing Global Environment, 1990, National Academy Press.

Twigg, G. The Black Deatlh: A Biological Reappraisal, 1984, Pergamon Press.

Wadsworth, G. The Diet and Health of Isolated Populations, 1984, CRC Press, Inc.

Weisse, A. B. Conversations in Medicine: The Story of Twentieth-Century Medicine in the Words of Those Who Created It, 1984, Doubleday.

Winslow, C. A. The Conquest of Epidemic Disease, 1944, Princeton University Press.

Wohl, A.S. Endangered Lives : Public Health in Victorian Britain, 1983, Harvard University Press.

Zinser, H. Rats, Lice and History, 1935, Atlantic Monthly Press.

COURSE SYLLABUS

EOH 352, FALL 2005

Dr. Owen Seiver
818-677-2347
JD 1517

owen.seiver@csun.edu

OFFICE HOURS: Friday: 8-9am (By appointment)
Monday Wednesday: 12-1pm
Wednesday: 1-4pm

COURSE OBJECTIVES: Upon completion of the course students should be able to:

1. Identify major concepts of environmental management
2. Understand the concepts of organizational theory
3. Demonstrate an understanding of the concepts of environmental policy advocacy and analysis.
4. Understand Environmental Law and it's impact on environmental policy.

SUMMARY OF TOPICS:

1. Concepts in management
2. Organizational Theory
3. Policy Analysis
4. Environmental Law
5. Administrative Law
6. Environmental Policy from the international perspective
7. International environmental policy.

COURSE REQUIREMENTS:

1. Three exams each weighted equally based 80-90% on lecture and 10% on reading assignments. 80%
2. Attendance 5%
3. Class Participation 5%
4. Online Segment 10%

Grades will be assigned as follows: A= 90%
B= 80%
C= 70%
D= 60%
F= <59%

TEXT: "The Environmental Protection Agency", Landy.

Reading Assignment: Exam 1: Part 1
Exam 2: Part 2
Exam 3: Part 3

Exam Dates will be announced in class at least 1 week prior to the exam.

There are no make-up exams. Your lowest grade is doubled. Students must take the final exam.

COURSE SYLLABUS

EOH 353, FALL 2005

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818-677-2347
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OFFICE HOURS: Friday: 8-9am (By appointment)
Monday Wednesday: 12-1pm
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COURSE OBJECTIVES: Upon completion of the course students should be able to:

1. Identify major concepts of environmental protection.
2. Understand the concepts of environmental risk assessment.
3. Demonstrate an understanding of the concepts of environmental food protection and disease control.
4. Understand environmental impacts on their health and the impacts on individual life choices.

SUMMARY OF TOPICS:

1. Food Sanitation
2. Disease transmission and control
3. Vector control.
4. Air Pollution
5. Radiation and environmental impacts of nuclear energy

COURSE REQUIREMENTS:

1. Three exams each weighted equally based 80-90% on lecture and 10% on reading assignments. 80%
2. Attendance 5%
3. Class Participation 5%
4. Online Segment 10% (Includes undergraduate writing assignment)

Grades will be assigned as follows: A= 90%
B= 80%
C= 70%
D= 60%
F= <59%

TEXT: "Our Global Environment", Nadakavukarin. 6th edition

Reading Assignment: Announced each Monday in class.

Exam Dates will be announced in class at least 1 week prior to the exam.

There are no make-up exams. Your lowest grade is doubled. Students must take the final exam.

SYLLABUS FOR EOH 353 (Class #12546), Fall 2005
Tuesday, 1900-2150 (7:00 PM-9:50 PM) in JD1551

Instructor: Antonio F. Machado, Ph.D. e-mail: amachado@csun.edu
Office: JD1519 Telephone: (818) 677-2065 Office Hours: tba
Text: Our Global Environment (Sixth Edition) by Anne Nadakavukaren

EXAMS

Grading for this course will be based in equal parts on one paper (which is discussed below), two midterm exams, and a **cumulative** final. The final exam will be on Tuesday, December 13, 2005 at 1015 (8:00 PM). The format for all exams will be short answer and essay questions. Questions will be based on lecture and reading assignments. **No** makeup tests will be permitted.

THE PAPER

As indicated above, one-fourth of your final grade in this course will be derived from a paper. The paper will be on a subject in Environmental Health Sciences that you will choose but must be approved by me. By way of example, some possible topics are listed on the back of this syllabus. The paper must be typed, double-spaced, and must contain at least **five (5)** references. The minimum length is **five (5)** pages. I'll discuss the point breakdown for the paper after the first midterm exam. "Extra credit" will **not** be offered.

GRADING

Midterm Exams.....200 points
Final Exam.....100 points
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EXAMPLES OF PAPER TOPICS

SUBJECT	SAMPLE TOPICS
Toxicology	Metabolism of any drug or chemical Toxicity of a heavy metal or other environmental toxin
Air Pollution	Acid rain Oxides of nitrogen The greenhouse effect Asbestos Automobile pollution and controls
Water Pollution	Sewage treatment Schistosomiasis The Exxon Valdez disaster The Bhopal disaster (Union Carbide)
Bioterrorism/Environmental Terrorism	
Safety	Confined spaces safety Radiation safety Laser safety
Hazardous Waste Disposal	Any specific waste, including medical wastes
Food-Borne Illness	*Salmonella* *Staph aureus* Botulism
Radiation	Ionizing radiation Ultraviolet radiation
Pests and Pesticides	Control of a specific vector Environmental fate and transport of a pesticide
Noise Pollution	
Deforestation	
Vector-Borne Diseases	Malaria, Cholera, Dysentery (Amoebic or Bacillary), Encephalitis, Lyme Disease, Typhoid Fever, Typhus, Yellow Fever, Dengue Fever, Plague, Rocky Mountain Spotted Fever

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Tuesday, 1900-2150 (7:00 PM-9:50 PM) in JD1551

Instructor: Antonio F. Machado, Ph.D. e-mail: amachado@csun.edu
Office: JD1519 Telephone: (818) 677-2065 Office Hours: tba
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Vector-Borne Diseases	Malaria, Cholera, Dysentery (Amoebic or Bacillary), Encephalitis, Lyme Disease, Typhoid Fever, Typhus, Yellow Fever, Dengue Fever, Plague, Rocky Mountain Spotted Fever

California State University, Northridge
Department of Environmental and Occupational Health

ENVIRONMENTAL HEALTH II (EOH 356B)

Instructor: Tom Hatfield, R.E.H.S., Dr.P.H.
Hours: Office: MW 12:30-1:45
Phone: Office: 818-677-4708
FAX: 818-677-2045
Internet: Thomas.Hatfield@csun.edu
http://www.csun.edu/~vchsc006/hatfield.html

COURSE DESCRIPTION:

An analysis of physical, chemical, and biological influences on human health with the aim of controlling them.
Prerequisite: Completion of basic science background.

COURSE OBJECTIVES:

The purpose of Health Science 356A and 356B is to introduce basic terms, core concepts, and fundamental skills used by environmental health professionals. In 356B, the major content areas are: 1) air quality, 2) water quality, 3) wastewater, and 4) radiation.

For each of the above content areas, on completion of this course the student should be able to:

1. analyze environmental agents in terms of their sources, basic attributes, and fate;
2. identify adverse effects from each agent on human health (acute and chronic), ecosystems, and other risks (including economic and psychological); and
3. select protective measures for each effect with systematic controls consistent with laws (emphasizing risk communication and management).

GRADING: 3 objective exams (equal weight, non-cumulative)
2 hypernews assignments (to be discussed in class)
11 online quizzes (to be discussed in class)

TEXT: Salvato J., Environmental Engineering and Sanitation, John Wiley and Sons, 1992.

ENVIRONMENTAL HEALTH II (EOH 356B)
Scheduled Lectures

Week #		Readings (Salvato)
	Air quality:	
1.	Introduction	
2.	Exposures	pp. 767-797
3.	Health effects	pp. 800-816
4.	Controls	pp. 767-777
5.	**EXAM #1**	
	Water quality:	
6.	Introduction	pp. 221-226, 487-489
7.	Controls, treatment	pp. 231-238, 249-284 333-343, 362-368, 394-396
8.	Cross connections, swimming pools	pp. 424-428, 1209-1212, 1045
9.	Wastewater	pp. 477-480, 586-594, 604-606 626-631
10.	**EXAM #2**	
	Wastewater treatment:	
11.	Large systems	pp. 424-428, 499-506, 512-538 647-651, 1044-1046
12.	Individual systems	pp. 499, 505 516-517, 531
	Radiation:	
13.	Ionizing radiation	pp. 846-861, 869-871
14.	Other radiation (fission, non-ionizing, etc.)	pp. 890-896, 914-915 877-881, 1218-1220
15.	Review	
16.	**EXAM #3**	

Environmental Health II

Selected References

--, "Radiation health impacts studied at DOE sites," Environmental science and technology 30(12): 526A, 1996.

--, The Role of Short-Term Tests in Evaluating Health Effects Associated With Drinking Water, Journal of the American Water Works Association v 82 n 10 pp. 48 OCT 1990.

Bobak, M. and Feachem, R. G. A.
Air pollution and mortality in Central and Eastern Europe: an estimate of the impact.
European journal of public health, v 5 n 2 82, 1995.

Brunekreef, B., Dockery, D., and M. Krzyzanowski
Epidemiologic Studies on Short-term Effect of Low Levels of Major Ambient Air Pollution Components.
Environmental health perspectives v 103 supp2 3, 1995.

Constantinou, E., M. Gerath, and L. Levin
Mercury from Power Plants: A Probabilistic Approach to Evaluation of Potential Health Risks.
Water, air, and soil pollution v 80 n 1/4 p. 1129, 1995.

Eisenbud M, Environmental Radioactivity, Harcourt-Brace-Jovanovich, 1987.

Fabrikant JI, Factors That Modify Risks of Radiation-Induced Cancer, Health Physics v 59 n 1 pp. 77, JUL 1990.

Fagliano J, Berry M, Bove F, Drinking Water Contamination and the Incidence of Leukemia: An Ecologic Study, American Journal of Public Health v 80 n 10 pp. 1209 OCT 1990.

Hatfield T.H., "The Failure of Sanitarians," Journal of Environmental Health 53(5):23-25, 1991.

Hatfield T.H. and L. Schierow, "Risk Assessment and Ground Water Pollution from Agricultural Chemicals," In: Proceedings of a National Symposium on Agricultural Chemicals and Ground Water Pollution Control, Larry Canter, ed., pp. 183-190, June 1987.

Juutilainen J., Hatfield T., and E. Laara
"Evaluating Alternative Exposure Indices in Epidemiologic Studies on ELF Magnetic Fields," Bioelectromagnetics 17(2):138-143, 1996.

Hatfield T.H., "Computers and Environmental Health," Journal of Environmental Health 57(3):33-34, 1994.

Jones TD, Protection of Human Health from Mixtures of Radionuclides and Chemicals in Drinking Water, Archives of Environmental Contamination and Toxicology, v 20 n 1 pp. 143 1991.

Katsouyanni, Klea
Health Effects of Air Pollution in Southern Europe: Are There Interacting Factors?
Environmental health perspectives v 103 supp2 23 1995.

Katsouyanni, K., "Short-term effects of air pollution on health: A European approach using epidemiologic time series data. The APHEA project," Public health reviews 25(1):7, 1997.

Matsui T, Kyosai S, Takahashi M, Application of biotechnology to municipal wastewater treatment, Water science and technology 23:10/12 pp. 1723, 1991.

Rensink JH, Eggers E, Donker HJGW, High biological nutrient removal from domestic wastewater in combination with phosphorus recycling, Water science and technology v 23 n 4/6 pp. 651, 1991.

Revich, B.A.
Public health and ambient air pollution in Arctic and subarctic cities of Russia.
Science of the total environment, v 160 / 161 p. 585 1995.

Saldiva, P., C. Arden, and G. Bohm
Air Pollution and Mortality in Elderly People: A Time-Series Study in Sao Paulo Brazil.
Archives of environmental health v 50 n 2 p. 159, 1995.

Seaton, A., MacNee, W., and Godden, D.
Particulate air pollution and acute health effects
The Lancet v 345 n 8943 p. 176, 1995.

Smith, I., "Electromagnetic Radiation and Health Risks: Cell Phones and Microwave Radiation in New Zealand," Journal of environmental health, 59(1):19, 1996.

Vezina, A., Ayotte, P., and Dewailly, E.
Arctic air pollution and human health: what effects should be expected?
Science of the total environment, v 160 / 161 p. 529, 1995.

Yoon, K. S., Yoo, K. H., and Soileau, J. M., "Nonpoint Source (NPS) Model Simulation of Tillage Effects on Water Quality," Journal of Environmental Science and Health 32(5):1491, 1997.

Air Pollution

I. Introduction

II. Exposures

A. Primary pollutants (sources, behavior, fate, detection)

1. sulfur oxides
2. particulates
3. carbonmonoxide
4. hydrocarbons
5. nitrogen oxides
6. lead

B. Secondary pollutants -- ozone, photochemical smog

III. Human health effects

A. Evidence: acute episodes
toxicological studies
chronic effects

B. Respiratory tract

1. regions: nasopharyngeal
trachobronchial
bronchial tree

2. factors determining site of entry
3. defense mechanisms

C. Effects of criteria pollutants

1. sulfur oxides
2. particulates
3. carbon monoxide
4. hydrocarbons
5. nitrogen oxides
6. lead
7. ozone

IV. Other Effects

A. Effects on plants and animals
B. Physical effects

1. effects on inert materials
2. meteorological effects
3. global effects

Air Pollution: Controls

I. Controls

A. Natural Controls
B. Man-made controls: generic classification
C. Sources to be controlled

1. area source
2. stationary point sources

a. particulates: cyclone separators
wet scrubbers
electrostatic precipitators
fabric filters
others

b. sulfur oxides: fuel desulfurization
fuel substitution
flue gas desulfurization (FGD)
tall stacks (acid rain)

c. carbon monoxide: alter combustion process
afterburners

d. hydrocarbons

evaporation sources: vapor recovery systems
controlled loadings/unloadings
floating roof storage tanks
improved valves and seals
design new chemicals

combustion sources: catalytic afterburners
adsorption
absorption
higher combustion temperatures

e. nitrogen oxides: lower peak combustion temperatures
less oxidizing atmospheres
slower cooling
reducing catalysts

3. mobile sources

a. evaporative emissions: positive crankcase ventilation (PCV)
vapor collection systems

b. exhaust emissions: combustion modifications
exhaust gas recirculation (EGR)

II. Laws

A. Clean Air Act
B. Responsibilities

Water Quality

I. Introduction

II. Sources

- A. rainfall
- B. desalination
- C. reclaimed wastewater
- D. groundwater
- E. surface water

III. Effects

IV. Criteria for Water Quality

- A. biological quality
- B. chemical quality
- C. physical quality

Water Quality: Controls

I. Introduction

II. Initial treatment steps

- A. aeration
- B. mixing
- C. coagulation / flocculation
- D. sedimentation
  1. clarification
  2. primary settling tank

III. Filtration

- A. terms: static head, effective particle size, backwash
- B. types: slow sand filter, rapid sand filter, mixed media filters, pressurized sand filters, diatomaceous earth filters

IV. Chlorination

- A. terms: free residual, chlorine demand

breakpoint
hypochlorinators

B. detection: DPD, OTA, SNORT, etc.

C. problems: virus inactivation, Giardia, THMs

D. alternatives: ozone, quaternaries, U.V.
chlorine dioxide, iodine

V. Other treatment

A. taste and odor
B. flourides
C. ion exchange
D. reverse osmosis
E. water softening
F. activated carbon

VI. Laws

A. Safe Drinking Water Act
B. Final considerations

Wastewater

I. Introduction

A. Risks
B. Sources

II. Characteristics

A. Physical

1. total solids content: suspended solids
settleable solids
filterable solids
colloidal solids
dissolved solids
2. temperature
3. color
4. taste and odors

B. Chemical (organics, inorganics)

C. Biological

1. bacteria, algae, enteric viruses
2. bioassays

Wastewater Controls

I. Municipal systems

A. Treatment

1. primary: bar screen
grit chamber
comminuter
sedimentation

2. secondary: activated sludge
trickling filters
rotating biological contactor
intermittent sand filter

3. tertiary: chemical coagulation
adsorption
ion exchange
ultrafiltration (reverse osmosis)
electrodialysis
ammonia stripping

B. Disposal

1. treated water: land disposal

dilution into receiving waters: assimilative capacity
aerobic stabilization
groundwater recharge

2. sludge disposal

II. Individual systems

A. Retention containers
B. Pit privy
C. Septic tank

1. perc test
2. other systems

"Other" Water Quality

I. Cross connections

A. Definitions: 1. cross connections
2. backflow
3. psi
4. back siphonage
5. back pressure

B. Siphon theory

C. Sources:
1. overhill flow
2. constricted flow
3. dynamically reduced pressure
4. pumps, boilers

D. Backflow prevention devices:
1. air gap
2. vacuum breakers
3. reduced pressure backflow prevention
4. barometric loop
5. 4-way plug valve

II. Swimming pools

III. Laws

A. Federal Water Pollution Control Act (FWPCA)

B. Clean Water Act Amendments

Ionizing Radiation

I. Introduction

A. definitions

1. radiation
2. ionizing radiation
3. ion
4. radioactive isotope
5. free radical

B. elementary particles

C. fundamental interactions

II. Types

A. directly ionizing

1. alpha radiation
2. beta radiation
3. other charged particles

B. indirectly ionizing

1. gamma rays

2. X-rays
3. neutrons

III. Units of measurement

IV. Sources

A. natural sources
B. artificial sources

Radiation Effects and Controls

I. Effects

A. High dose
B. Low dose

1. effects

a. somatic
b. genetic

2. probabilities
3. factors affecting sensitivity
4. dose response models

a. linear
b. quadratic
c. linear-quadratic

5. epidemiological studies

II. Controls

A. distance -- inverse square law
B. time
C. monitoring
D. shielding -- half value layer
E. contamination prevention
F. testing of equipment

III. Laws

A. Occupational versus general population
B. Federal agencies

1. Nuclear Regulatory Commission
2. Environmental Protection Agency
3. Department of Energy
4. Others

Nuclear Power

I. Nuclear bombs

A. fission
B. bomb design
C. historical perspective

II. Nuclear power plants

A. The process

1. mining
2. milling
3. refining/conversion
4. enrichment
5. fuel fabrication
6. power production: fuel rods
moderators
coolant
control rods
turbine, generator

B. designs

1. LWR (light water reactor)

BWR (boiling water reactor)
PWR (pressurized water reactor)

2. HTGR (High temperature gas-cooled reactor)
3. Breeder reactors
4. Others

C. Nuclear Wastes

1. spent fuel
2. high level
3. transuranic
4. low level waste
5. uranium mine tailings
6. others

California State University, Northridge
Department of Health Sciences

ENVIRONMENTAL HEALTH I (Health Science 356A)

Instructor:	Tom Hatfield, R.E.H.S., Dr.P.H.
Office hours:	MW 12:15-1:15 (Room H101-H)
Phone:	Office: 818-677-4708
	FAX: 818-677-2045
Internet:	thomas.hatfield@csun.edu
	http://www.csun.edu/~vchsc006/hatfield.html
Lectures:	Sect. 1: MW 11-12:15; Sect. 2: M 4-7

COURSE DESCRIPTION:

An analysis of physical, chemical, and biological influences on human health with the aim of controlling them.
Prerequisite: Completion of basic science background.

COURSE OBJECTIVES:

The purpose of Health Science 356A and 356B is to introduce basic terms, core concepts, and fundamental skills used by environmental health professionals.

In 356A, the major content areas are:
1) population, energy use, and economic influences on environmental health;
2) communicable diseases; 3) commercial food protection;
4) pests and pesticides; and 5) solid and hazardous wastes.

For each of the above content areas, on completion of this course the student should be able to:

1. analyze environmental agents in terms of their sources, basic attributes, and fate;
2. identify adverse effects from each agent on human health (acute and chronic), ecosystems, and other risks (including economic and psychological); and
3. select protective measures for each effect with systematic controls consistent with laws (emphasizing risk communication and management).

GRADING: 3 objective exams (equally weighted, non-cumulative)
1 journal article summary: presentation is both oral (in class) and written (hardcopy and on internet)

TEXT: Salvato J., Environmental Engineering and Sanitation, John Wiley and Sons, 1992.

ENVIRONMENTAL HEALTH I (H. Sci. 356A)

Scheduled Lectures

Week #		Readings *	
1.	Introduction	pp. 3-31	WWW: G
2.	Communicable Diseases: concepts	pp. 31-57	
3.	Communicable Diseases: air, water	pp. 57-77	WWW: H
4.	Communicable Diseases: other	pp. 77-93	
5.	**EXAM**		
6.	Food: Sanitation	pp. 898-953	WWW: I
7.	Food: Additives	pp. 960-1010	
8.	Vectors: pests, diseases	pp. 1099-1137	WWW: J
9.	Vectors: pesticides, controls	pp. 1137-1158	
10.	**EXAM**		
11.	Solid Wastes: concepts	pp. 662-696	WWW: K
12.	Solid Wastes: methods		
13.	Hazardous Wastes: concepts	pp. 696-765	WWW: L
14.	Hazardous Wastes: methods		
15.	Review		
16.	**EXAM**		

* -- Text: Salvato J., Environmental Engineering and Sanitation, John Wiley and Sons, 1992.

WWW: see lettered sections on world wide web home page: http://www.csun.edu/~vchsc006/356a/356a.html

Environmental Health I
Selected References

--, Infectious diseases: a treatise of infectious processes, Philadelphia: Lippincott, 1994.

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Carr J. Hatfield T.et al., A Consumer's Guide To Hazardous Waste, Southern California Hazardous Waste Management Project, 1985.

Carter, D.E., Pena, C., Suk, W.A., "Environmental Health and Hazard Waste Issues Related to the U.S.-Mexico Border," Environmental Health Perspectives, 104(6):590, 1996.

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Ewald, Paul W., Evolution of infectious disease, New York, Oxford University Press, 1994.

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Giesecke, Johan, Modern infectious disease epidemiology, London: Edward Arnold, 1994.

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Hatfield T.H., "A Risk Communication Taxonomy for Environmental Health," Journal of Environmental Health 56(8):23-28, 1994.

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Hatfield T.H., "Risk Factors and Non-Differential Misclassification," American Journal of Public Health 80(8):1000-1001, August 1990.

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Jones, Julie Miller, Food safety, St. Paul, Minn., Eagan Press, 1992.

Lopez A, A Complete Course in Canning, The Canning Trade, 1981.

Mallory KL and RA Charo, "Federal and State Mandatory Beverage Container Deposit Legislation", Columbia Journal of Environmental Law II: 355-378, 1986.

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Chemical Sensitivity Attributed to Pesticide Exposure Versus Remodeling, Archives of environmental health v 50 n 2 119, 1995.

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Renner, Rebecca, "When Is Lead a Health Risk?" Environmental science & technology v 29 n 6 256A 1995.

Robinson C.L. and T.H. Hatfield, "Labeling of Microbial Risks," Journal of College Science Teaching 24(6):407-409, 1995.

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Schal C and Hamilton RL, Integrated suppression of synanthropic cockroaches, Annu Rev Entomol 35 p 521-51, 1990.

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hazardous materials, Boca Raton: Lewis Publishers, 1994.

Wilson, Mary E., A world guide to infections: diseases, distribution, diagnosis, New York: Oxford University Press, 1991.

Introduction

I. Introduction

A. Text readings
B. Lectures
C. Exams

II. Terms

A. Sanitation
B. Environmental Health
C. Public Health
D. Health
E. Environment

III. Risk Analysis -- Models for Environmental Health

A. Risk Assessment
B. Risk Management
C. Risk Communication

IV. Sustainability

A. Population
B. Resources (energy)
C. Economics

Communicable Diseases

I. Introduction

II. Respiratory Diseases

A. Common cold
B. Influenza
C. Tuberculosis
D. Coccidioidomycosis

III. Water-borne Diseases

A. Enteric diseases
B. Helminthic diseases

IV. Other Diseases

Food

I. Introduction

A. Definitions
B. Exposure factors

II. Foodborne Diseases

A. Infections
B. Intoxications
C. Poisonous plants/animals
D. Others

III. Controls

A. control concepts — sterilize, disinfect, sanitize
B. investigating outbreaks
C. enforcement
D. other: — canning, frozen foods, dishwashing

III. Food Additives

A. FDA definition
B. Selected additives
C. Laws

Vectors

I. Introduction

II. Pest Categories

III. Vector-borne diseases

A. Arthropod-borne diseases

1. Insect-borne diseases
2. Arachnid-borne diseases

B. Zoonoses

IV. Pesticide Categories

IV. Controls

V. Laws

Solid Wastes

I. Introduction

II. Exposures

- A. Relationship to nuclear and hazardous wastes
- B. Estimating quantities

III. Hazards

IV. Controls

- A. Collection
- B. Disposal: open dumps, sanitary landfills, other
- C. Treatment: incineration, pyrolysis biodegradation, composting
- D. Resource Recovery: reuse, recycling, reclamation
- E. Source Reduction

V. Laws

Hazardous Wastes

I. Introduction

II. Controls

- A. Resource recovery
- B. Treatment
  1. biological: landfarming, etc.
  2. chemical: neutralization/precipitation, etc.
  3. physical: organics recovery, etc.
     thermal: (incineration, pyrolysis, wet air oxidation)
- C. Isolation
  1. solidification, stabilization
  2. surface impoundments, deepwell injection
  3. residuals repository, landfills

III. Laws

- A. RCRA: Resource Conservation and Recovery Act
- B. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act ("Superfund")
- C. SARA: Superfund Amendments and Reauthorization Act

Health Science 365
Instructor: Tom Boxwell
Office Hours: Wed. 18:00 – 19:00
or by appointment

General Information

Grading Policy:	Students will be evaluated by their performance on one midterm examination and one final examination. Each examination will count as 50% of the final grade. Final grade will be based on a class curve. No make-up examinations will be given and no extra credit work will be assigned. The +/- grading system will not be used.
Examinations:	Material covered on the examinations will be from the class lectures and the textbook. The final examination will be approximately 25% cumulative.
Text:	"Safety A Personal Focus" by David Bever
Issue resolution:	University policy will be strictly followed in these matters which will include dropping the class and assigning incomplete grades.

HEALTH SCIENCE
365
ACCIDENT PREVENTION

DESCRIPTION: A qualitative and quantitative study of accident prevention concepts in several topics.

GOALS: The students that successfully complete the class shall be able to identify accident causes in the studied topics and techniques that can be used to prevent or mitigate accident results.

CLASS OUTLINE:

A. Class Introduction
   1. Accident Definition
   2. Accident causes
   3. The three Es of safety
   4. Factors affecting safety
B. Systems Safety
   1. Description
   2. Analysis Models
C. Accident Statistics
   1. Data collection problems
   2. Calculations
D. Fire Prevention and Control
   1. Fire chemistry
   2. Classification of Fires
   3. Fire detection and control
E. Industrial Accident Prevention
   1. Historical Review
   2. Program Goals
   3. Regulatory Agencies
F. Recreational Safety
   1. General information
   2. Cold weather activities
   3. Hot weather activities
G. Automobile Safety
   1. Statistics
   2. Accident causes and analysis
   3. Government Involvement
H. Consumer Safety
   1. Consumer Product safety Commission
   2. Legislation
I. Product Liability
   1. Negligence
   2. Warranty
   3. Strict Liability
J. Disaster Preparedness
   1. Planning
   2. Natural and man-made disasters
K. Electrical Safety
   1. Definitions
   2. Protection devices
   3. Grounding
L. Home Security and Firearm Safety
   1. Statistics
   2. Alarm systems
   3. Gun Safety
M. Home safety
   1. Accident Causes
   2. Appliances, Tools...
N. Farm Safety
   1. Statistics
   2. Accident Causes
O. School Safety
   1. Teacher Liability
P. Future?

HSCI 390 – Introduction to Biostatistics (3.0 units)
Syllabus – Spring 2006

Instructor:
Lawrence Chu, Ph.D.
Assistant Professor of Biostatistics and Epidemiology
Office: Jacaranda 2534
Phone (voicemail): (818) 677-2485
Email: lawrence.chu@csun.edu

Lectures:
Section 12259, Tuesdays & Thursdays, 9:30–10:45 am, JD 2522
Section 12257, Tuesdays & Thursdays, 12:30–1:45 pm, JD 2528

Computer Labs:
Section 12260, Tuesdays and Thursdays, 11:00 am–12:15 pm, JD 2521
Section 12258, Tuesdays and Thursdays, 2:00–3:15 pm, JD 2521

Office Hours:
Tuesdays and Thursdays, 11:00 am–12:00 pm,
Wednesdays, 3:00–4:00 pm, or by appointment

Textbook:
Witte RS & JS Witte, *Statistics, 7th edition,* John Wiley & Sons, Inc., 2004

Course Objectives:
This course is designed to give students a basic understanding of the principles and methods of biostatistics. No previous experience with statistics is necessary, although you should be able to use basic algebra in solving problems.

At the successful completion of this course, students should be able to:

- Calculate measures of central tendency and variability
- Construct histograms, frequency tables, and other graphs and tables
- Apply properties of the normal distribution
- Formulate a null hypothesis and problem statement
- Compute p-value and confidence interval estimates and explain their meaning
- Calculate different types of test including t-tests, chi-square tests, and analysis of variance and identify the proper usage of these tests
- Perform correlation and regression statistics
- Use computer software to apply statistical tests to data

Instruction:
Information is presented both in the classroom and through the text. Classroom meetings will be in a lecture format such that the instructor will lecture on important material to be learned. He will not attempt to cover all aspects of the text. Rather, he will focus on difficult areas or on topics of special interest. While the class meetings are relatively structured lectures, there is a substantial amount of time set aside for questions and answers. Students are encouraged to ask questions and to interrupt the lecturer for points of information and clarification.

Students are expected to attend all class meetings, complete the assigned readings and homework, and print out the notes before lecture, which are found at www.csun.edu/faculty/lawrence.chu/hsci390 Food and drinks are allowed in class so long as they do not interfere with the instructor or other students in the class. All cell phones and pagers should be turned off or set to "silent" mode.

Exam Policy: All exams are designed to test students' understanding of basic course concepts including topics covered in computer lab. Exams will be open-book and open-notes and students should bring a calculator to the exams. No cell phones or PDAs will be allowed during exams.

A missed exam will result in a grade of zero (0). No make-up exams will be allowed unless the instructor is notified at least one week prior to the exam date with a valid reason for the student's absence. Evidence of personal injury, illness, or the observance of religious holidays are the only valid reasons for missing exams. Any make-up exams granted will be closed-book, closed-notes oral exams in the instructor's office.

Homework Policy: Homework will generally be assigned on a weekly basis and are due one week after they are assigned. Homework must be turned in class on the due date; late homework will not be accepted. In the event students are unable to attend class that day, they can turn in their homework either via e-mail or to the instructor's mailbox by class time for credit. For course grade calculations, one homework assignment with the lowest grade will be dropped.

Cheating: Cheating and plagiarism will not be tolerated. Students caught cheating or plagiarizing in any form will receive a failing grade and be reported to the university for appropriate disciplinary action as outlined in section 41301, Title 5 of the California Code of Regulations. For more information on academic dishonesty, refer to the University Catalog.

Course Evaluation: The grade for this course is independent of the computer lab grade and is calculated as follows:

1st midterm	25%	Homework	15%
2nd midterm	25%	Attendance	5%
Final Exam	30%		

Grading:

93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	Below 60	F

Class Schedule

Date		Topic	Text readings	HW due
January	31	Introduction	Ch 1, pp. 3-14	
February	2	Descriptive Statistics – Tables	Ch 2, pp. 21-38	
	7	Descriptive Statistics – Averages	Ch 3 & 4, pp. 45-61, 66-76	
	9	Descriptive Statistics – Variability	Ch 5, pp. 81-95	HW #1
	14	Populations and Sampling	Ch 12, pp. 201-210	
	16	Probability	Ch 13, pp. 213-223	HW #2
	21	Bayes' Theorem		
	23	Sampling Distributions / Review	Ch 14, pp. 229-241	HW #3
	28	**FIRST MIDTERM EXAM**		
March	2	Exams returned / Statistics using Calculators		
	7	Normal Distributions	Ch 6 & 7, pp. 99-110, 113-126	
	9	Normal Distributions (continued)		
	14	Hypothesis Testing – z Test	Ch 15 & 16, pp. 245-257, 261-272	HW #4
	16	Hypothesis Testing		
	21	P-values and Estimation	Ch 18, pp. 293-304	HW#5
	23	One-sample T-test	Ch 19, pp.309-322	
	28	Independent Two-sample T-test	Ch 20, pp. 327-341	HW #6
	30	Paired T-test	Ch 21, pp. 345-362	
April	4	Synopsis of Statistical Tests / Review		HW #7
	6	**SECOND MIDTERM EXAM**		
	11	SPRING BREAK (no class)		
	13	SPRING BREAK (no class)		
	18	Exams returned		
	20	Special Topic		
	25	Analysis of Variance	Ch 23, pp. 381-403	
	27	Analysis of Variance (continued)		
May	2	One Variable Chi-Square Test	Ch 27, pp. 469-488	HW#8
	4	Two Variable Chi-Square Test	Ch 27, pp. 469-488	
	9	Correlation	Ch 9, pp. 141-163	HW #9
	11	Regression	Ch 10, pp. 167-179	
	16	Regression (continued)		HW #10
	18	Review for Final		
	23	**FINAL EXAM**		

This class schedule will be followed closely but may be modified at the instructor's discretion.

COURSE SYLLABUS

EOH 453, FALL 2005

Dr. Owen Seiver
818-677-2347
JD 1517

owen.seiver@csun.edu

OFFICE HOURS: Friday: 8-9am (By appointment)
Monday Wednesday: 12-1pm
Wednesday: 1-4pm

COURSE OBJECTIVES: Upon completion of the course students should be able to:

1. Identify major concepts of Indoor Air Quality Assessments
2. Understand the theories and practical aspects of residential construction
3. Demonstrate the concepts involved in defect analysis.
4. Identify the risk assessment criteria in evaluating mold and indoor hazards.

SUMMARY OF TOPICS:

1. History of housing in the United States
2. Foundations
3. Building Construction
4. Electrical Aspects
5. Plumbing Aspects
6. Mold Contamination and construction defects.
7. Radon
8. EMF exposure risks
9. Heating, ventilation, emissivity and Infrared Camera Imaging

COURSE REQUIREMENTS:

1. Three exams each weighted equally based 80-90% on lecture and 10% on reading assignments. 80%
2. Attendance 5%
3. Class Participation 5%

Text: (none) Reading assignments will be passed out in class.

Grades will be assigned as follows: A= 90%
B= 80%
C= 70%
D= 60%
F= <59%

Graduate students are required to prepare a Term Paper on a topic of housing. (Instructor Approval Required).

Exam Dates will be announced in class at least 1 week prior to the exam.

There are no make-up exams. Your lowest grade is doubled. Students must take the final exam.

ENVIRONMENTAL HEALTH LAW
2006 Class Syllabus

EOH 454OL

Instructor: M. Harris
Office Hours: Mon. by Appt.
Wed. by Phone Between 11am –Noon
Phone: 909-396-2306
e-mail: mharris@aqmd.gov

READINGS: Environmental Law Handbook
Government Institutes, **18th Edition**
A list of weekly readings topics is set out below. In addition, I will hand out documents or articles from time to time in class.

EXAM: The class will include two mid-term exams and a final exam. Exams will include material from the reading, the lectures and any handouts provided in class. The exams will consist of both multiple choice questions and short essays. Only the final will be cumulative.

PAPER: Any student may elect to write a 15 page paper as an alternative to the second mid-term exam. Topics must be pre-approved by the instructor. Please feel free to ask me about possible topics.

CLASS PARTICIPATION:

During each class I will handout an optional assignment(s) related to the following week's topic. Each student is **required** to prepare and be ready to discuss with the rest of the class at least one of these optional assignments during the semester. Students in the Masters degrees program are expected to prepare and discuss at least two of these optional assignments. Students who prepare and discuss more than the required number of optional assignments will receive extra credit for each additional assignment.

GRADES: Grades will be based upon the total points accumulated from scores on the exams, papers, and class participation. The maximum possible points (assuming no extra credit) for undergraduate students is 1000 points. The maximum possible points (assuming no extra credit) for Master students is 1100 points.

The first mid-term is worth up to 200 points toward the final grade.

The second mid-term, or paper, is worth up to 300 points toward the final grade.

The final exam is also worth up to 400 points toward the final grade.

Completion of each **required** optional assignment(s) (class participation) is worth up to 100 points.

Completion of each extra credit optional assignment is worth up to 25 points.

EOH 454 FINAL GRADE BREAKDOWN

UNDERGRADUTES:

900 points or higher = A

800 – 900 points = B

700 – 800 points = C

600 – 700 points = D

600 points or less = F

MASTERS STUDENTS:

990 points or higher = A

880 – 990 points = B

770 – 880 points = C

660 – 770 points = D

660 points or less = F

EOH 454 COURSE OUTLINE

Week 1 and 2 (Jan. 2 and Feb. 10, 2006):
Introduction to Environmental Law

Week 3 (February 17):
The National Environmental Policy Act

Weeks 4 and 5 (February 24 and March 2):
The Clean Water Act

Week 6 (March 9):
The Clean Air Act

Week 7 (March 16)
EXAM

Week 8 (March 23):
Comprehensive Environmental Response Compensation and Liability Act (a.k.a. CERCLA or Superfund)

Week 9 (March 30):
Resource Conservation and Recovery Act/Underground Storage Tanks

Week 10 (April 6):
The Public Notification Laws: Emergency Planning and Community Right to Know (EPCRA), CERCLA, Safe Drinking Water Act, Proposition 65, and Environmental Justice

Spring Break (April 13)

Week 11 (April 20):
EXAM

Week 12 (April 27):
Toxic Substances Control Act

Week 13 (May 4):
Occupational Safety and Health Act

Weeks 14 and 15 (May 11 and 18)
Environmental Enforcement and Environmental Management

Final Exam Week of May 222.

EOH 457
Water and Waste Water
Spring, 2006
Tuesdays, 1900-2145 in JD 2520

Maurice Oillataguerre, M.S., M.P.A., R.E.H.S.
Phone: (661) 478-1107
Email: moillataguerre@ci.glendale.ca.us (refer to "EOH 457" in subject line)
Office: JD 1510 (phone x7918)

Office Hours: Tuesday: 6:00 pm – 7:00 pm and by appointment

Text: Water and Waste Water Technology (ISBN# 0-13-097325-4)
Fifth Edition, Mark Hammer & Mark Hammer, Jr.

Reading Assignments:		
	Exam 1: 2,4	(March 7, 2006)
	Exam 2: 5,9,10	(April 25, 2006)
	Final: 4,5,9,10,11,12,13	(May 23, 2006)

Exams: Three exams: 2 midterms (25% each) and a cumulative final (30%)
Please bring a Scantron. There are no make-up exams. Your lowest exam score will be utilized in place of a missing midterm if you miss an exam (the Final Exam will be converted to an equivalent 100-point score). The Final must be taken – no exceptions.

Course Grades: Grades will be assigned based on the following point system:

Midterm 1:	100 points (25%)
Midterm 2:	100 points (25%)
Final:	120 points (30%)
Attendance:	40 points (10%)
Oral Presen.:	20 points (5%)
Homework:	20 points (5%)
Total -	**400 Points**

The Final Grade will be based on a curve with the following distribution:

A – 25%
B - 35%
C – 30-40%
D/F – 0-10%

Attendance: You are allowed **ONE** unexcused absence. 4 points (1%) will be deducted for each additional absence.

Homework: Each student will write a 2-3 page short summary of a newspaper article or a research journal article. This will be the only graded homework assignment. However, there will be homework assignments that will not be graded (i.e., problems, etc.).

Oral Presentation: Each student will do a short presentation (5-7 minutes) on a water-related topic. The focus of the presentation will be to improve students' public speaking skills. Each student will receive 10 points just for doing the presentation. The remaining 10 points will be assigned based on the quality of the presentation.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
College of Health and Human Development
Department of Environmental and Occupational Health

EOH 455L Microbiological Hazards in Environmental Health
Instructor: Dr. John Schillinger
Spring 2005

Course Description

The study of infectious disease agents transmitted through water, wastewater, milk, foods, surfaces, and air with a focus on their assessment, prevention and control. The course is integrated with the laboratory section of 455L.

Course Objectives

During the course, students will:

1. Review general microbiological and taxonomic concepts.
2. Assess the significance of person-to-person transmission of disease in terms of morbidity and mortality.
3. Discuss the hazards of the major pathogens involved with water, milk, foods, air and surfaces.
4. Review sampling methods and strategies for collection of environmental samples.
5. Evaluate the bacterial tests routinely used for assessing public health risks in the environment.
6. List appropriate control measures for preventing environmentally associated infections and intoxications.
7. Survey the physical and chemical processes for microbial destruction and tests for disinfection effectiveness.
8. Review concepts of nosocomial infection control.

Course Outline

I. Introduction and Review of Microbiological Concepts
   - A. microbial evolution
   - B. classification of microbes
   - C. identification techniques
   - D. taxonomy of microbes
   - E. enumeration methods

II. Communicable Disease Transmission
   - A. person-to-person transmission
   - B. environmental transmission
   - C. reportable diseases and conditions

III. Microbial Indicator Concepts
- A. Escherichia coli and coliforms
- B. fecal streptococci and enterococci
- C. anaerobes and phage
- D. heterotrophic counts

IV. Water Microbiology
- A. natural water quality
- B. potable water testing
- C. swimming pools and spas
- D. recreational water testing
- E. shellfish growing waters
- F. wastewater effluents and stormwater

V. Milk and Dairy Products
- A. historical and current pathogens
- B. microbial indicators and phosphatase test
- C. zonal inhibition assay

VI. Food-Borne Illness and Prevention
- A. biological toxins
- B. parasites and other pathogens transmitted
- C. classical food-borne infections
- D. classical food-borne intoxications
- E. prevention and HACCP
- F. epidemiological investigations and sampling

VII. Bioaerosol Hazards
- A. sources of outdoor airborne pathogens
- B. indoor bioaerosols: toxins, allergens, pathogens
- C. bioaerosol sampling and analysis
- D. prevention and mitigation

VIII Microbiological Testing of Surfaces
- A. surfaces and disease transmission
- B. surface testing methods and indicators

IX. Microbial Destruction
- A. physical and chemical processes
- B. common disinfectants
- C. A.O.A.C. phenol coefficient test
- D. disinfection kinetics

Textbooks Required

Control of Communicable Diseases Manual 17th Ed., 2000. J. Chin, Ed.
Readings in Microbiological Hazards in Environmental Health

Method of Instruction

The course will be taught in lecture format with video, handout, and web-based information incorporated. A separate laboratory course is synchronized with the subject matter of the lectures.

A research paper is optional. It will be 7 pages minimum of neatly typed double-spaced review of one of the emerging diseases in environmental health and its control. (chosen with instructor) Reference pages will be in addition using the citation-sequence system.

Graduate students have a different research paper requirement. The paper or project (chosen with instructor) will be 15-20 pages in length with 30-40 references.

Methods of Evaluation

Exams-
Two quizzes and a final exam will be given. They will consist of multiple-choice, short answer, matching, and short essay questions. Dates will be announced in class. Material for the questions will come primarily from the lecture material and readings. A half page scantron is required for all exams.

Grading-
Course grades will be determined from the total points of the quizzes (30% each), and the final exam (40%). If the optional research paper is chosen, the final exam will be worth 30% of the grade and the paper will count for 10%.

Course grades will generally be assigned as 90-100% = A, 80-90% = B, 65-80% = C, 55-65% = D, and < 55 = F. The plus/minus system will be used sparingly. Attendance and class participation will be considered in assigning grades in borderline situations.

Academic dishonesty will not be tolerated. (see pages 552-554 of the University catalog). Any questions about plagiarism must be resolved with instructor.

MICROBIOLOGICAL TERMS

Infection
Intoxication
Disease
Nosocomial Infection
Contamination
Disinfection
Pathogenicity
Normal Flora
Carrier
Incubation Period
Endemic
Epidemic
Virulence
Etiologic Agent
Fomites
Zoonosis
Dysentery
Septicemia
Gastroenteritis

Bacteria
Protozoa
Rickettsia
Algae
Fungi
Amoebae
Helminths
Viruses
Phage

Bacilli
Cocci
Vegetative Cell
Diplococcus
Hyphae
Cyst
Egg
Trophozoite
Vibrio
Spirillum
Spirochaete

Flagellum
Cilium
Pilus
Plasmid
Capsule
Bacteriocin
Peptidoglycan
Sporulation
Envelope
Germination
Capsid
Endospore
Serotype
Enterotoxin
Exotoxin
Endotoxin
Encyst
Excyst

Bacteriology
Mycology
Protozoology
Virology
Immunology
Serology

Flagellum - Eukaryotic type has characteristic 9 + 2 arrangement of microtubules with movement created by the protein dynein which forms arms that project from the surface of the tubules and cause the doublets to slide in relation to one another. The resulting flexing causes a back and forth movement of the flagellum which propells the organisms through the water. (Sci. Amer. 1980)

Prokaryotic type is a complex organelle consisting of a basal body contained within the cell envelope and two structures: a hook and a helical filament composed of flagellin (protein) subunits. The basal body is a motor powered by protons that pass through the motor down a transmembrane electrochemical gradient. The bacterium can reverse the direction of spin to propel itself either foreward or backward.

Cilium - Eukaryotic cell structures resembling flagella but organized in a system connected by a network of fibers running beneath the surface of the cell. The cilia beat in synchronized pattern much like a field of wheat bending in the breeze. (Microbiology by Alcamo, 1986)

Fimbria - Rigid appendages composed of pilin (protein) subunits. Fimbriae are found primarily on the surface of Gram negative bacteria and are used to aid cell attachment to surfaces.

Pilus - A specialized fimbria that is involved in bacterial conjugation (transfer of a plasmid from one bacterium to another).

Plasmid - A small closed loop of DNA existing apart from the bacterial chromosome (nucleoid). Plasmids contain few genes, but are significant because they carry traits for drug resistance. For this reason they are often called R factors ("R" for resistance).

Capsule - A layer of polysaccharides and small proteins surounding a bacterial cell which serves as a buffer between the cell and its external environment and which may protect cells from phagocytosis. When the capsule is extensive, it is commonly referred to as a slime layer or glycocalyx.

Bacteriocin - Proteins excreted by some bacteria to inhibit or destroy other bacteria.

Peptidoglycan - A very large molecule composed of alternating units of two amino containing carbohydrate, N-acetylglucosamine and N-acetylmuramic acid. It occurs in bacterial cell walls as multiple layers joined by side chains of four amino acids forming in effect an extremely large and rigid molecule. In Gram positive bacteria, the peptidoglycan layer is about 25 nm thick and contains an additional polysaccharide called teichoic acid. Gram negative bacteria have a layer only about 3 nm thick.

Envelope - Some microbiologists refer ot the cell membrane, cell wall and capsule (if present) together as the cell envelope. (see also capsid)

Endospore - Highly resistant structures produced by certain Gram positive bacteria (esp. Bacillus and Clostridium). In the cytoplasm , thick layers of peptidoglycan form around the replicated chromosome and the spore becomes dehydrated with large amounts of dipicolinic acid to stabilize the proteins. This process is called sporulation. When the external environment is favorable, the protective layers break down and the spores germinate to become vegetative cells.

Capsid - The coat of protein surrounding the core of nucleic acid (genome) of a virus. The capsid gives shape to the virus and is responsible for the helical, icosahedral or complex symmetry. The capsid is made up of individual protein subunits called capsomeres. Many viruses are surrounded by a flexible membrane known as an envelope. The envelope is composed of lipids and protein and is essentially similar to the host cell membrane. A completely assembled virus outside its host cell is known as a virion.

Serotype - A specific reaction indicating an exact match between an antigen (such as a bacterium of virus) and an antibody prepared against that strain of organism. Usually serotype refers to subspecies taxonomic groups.

Enterotoxin - A toxin produced by bacteria which causes a gastroenteritis.

Exotoxin - A toxin produced by bacteria which is excreted into the environment surrounding the bacterial cells.

Endotoxin - A metabolic poison produced chiefly by Gram negative bacteria; endotoxins are part of the bacterial cell wall and consequently are released on cell disintegration. They are composed of lipid-polysaccharide-peptide complexes and can cause a febrile response.

Encyst - The process of cyst formation in protozoa.

Excyst - The process of transformation of a protozoan cyst to the free-living or trophozoite stage.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
College of Health and Human Development
Department of Environmental and Occupational Health

EOH 455L Laboratory for Microbiological Hazards in Environmental Health
Fall 2005 Instructor: Dr. John Schillinger

Course Description

Standard procedures for basic microbiological analyses with a focus on the collection and laboratory examination of water, wastewater, milk, foods, surfaces, air and other environmental samples.

Course Objectives

During the laboratory course, students will:

1. Perform the routine tests for indicator bacteria.
2. List the principles and limitations of the laboratory tests.
3. Collect data and record results in a laboratory notebook.
4. Analyze data and write conclusions for each testing exercise.
5. List the quality control requirements for sample collection, testing and data handling.
6. Review the rationale for choosing appropriate test procedures.

Required Text and Materials

No text is required. Material from the following references will be supplied:
Standard Methods for the Examination of Water and Wastewater, 17th Ed , APHA.
Standard Methods for the Examination of Dairy Products, 16th Ed. R.T. Marshall Ed., APHA.
Compendiium of Methods for the Microbiological Examination of Foods, 3rd Ed., C. Vanderzant and D. F. Splittstoesser, Eds., APHA.
Bioaerosols, Assessment and Control, J. Macher Ed., ACGIH.

A laboratory coat is optional but desirable – a long shirt may be used instead and stored at the bench station drawer. Safety glasses are required. Valuable items of clothing should not be worn to the laboratory.

Method of Instruction

Students will perform basic laboratory analyses as members of a two or three person team. All media and equipment will be provided at the bench stations.

A composition book (black bound 200 pages) will be required as notebook to record all laboratory data. The book will be submitted at the end of the semester. Typed

laboratory reports for each exercise will be due the week following the completion of the exercise.

Method of Evaluation

Quizzes- Two lab quizzes will be given composed of 25 questions involving the procedures used and calculations employed in the lab exercises.

Notebook - The lab notebook will be graded for completeness (not necessarily tidiness), and effectiveness in conveying experimental results.

Reports- The written reports will include the title, purpose of the exercise, methods, raw data, calculated results, and a conclusion/discussion paragraph.

Grading – Grades will be computed on the basis of the quizzes (20% each), the notebook (10%), and the reports (5.0% each). Grades will generally be assigned as follows:

90-100 %	A
80-89 %	B
65-79 %	C
<65 %	F

Academic dishonesty will not be tolerated.
Cell phones and pagers should be turned off during class.

Course Schedule

Aug 29	Introduction, Lab Safety, Basic Lab Procedures
Sep 12	Microscopy, Basic Lab Methods
Sep 19	Natural Water Quality Testing
Sep 26	Indicator Ratios and Resuscitation Methods
Oct 3	Potable Water Testing
Oct 10	Swimming Pool, Spa, and Natural Recreational Water Testing
Oct 17	IMViC Testing for Coliform Identification
Oct 24	Quiz I
Oct 31	Milk Testing
Nov 7	Hazard Analysis for Potentially Hazardous Foods
Nov 14	Testing for Foodborne Pathogens
Nov 21	Surface Testing
Nov 28	Bioaerosol Testing
Dec 5	Quiz II

SYLLABUS FOR EOH 456 (Class #12674), Spring 2005
Thursday, 1900-2150 in EN 2220

Instructor: Antonio F. Machado, Ph.D. e-mail: amachado@csun.edu
Office: HC3, Phone # (818) 677-2065
Office Hours: M 1500-1600, R 1600-1900 (or by appointment)
Text: Toxicology: The Basic Science of Poisons (6th ed.) by Klaassen

EXAMS

Grading for this course will be based in equal parts on two midterm examinations and a **cumulative** final. At least two weeks' notice will be given for the midterm exams, at which time the format will be discussed in more detail. The final exam will be on Thursday, May 26, 2005 at 8:00 PM (2000). The general format for all exams will be short answer, definitions, and essay questions. Questions will be based on lecture and reading assignments. **No** makeup tests will be permitted. "Extra credit" will **not** be offered.

GRADING

Midterm Exam I.....100 points
Midterm Exam II.....100 points
Final Exam.....100 points

Course grades will be based on the following scale:

A – A- = 90% and above
B+ - B- = 80% - 89%
C+ - C- = 70% - 79%
D+ - D- = 60% - 69%
F = 59% and below

ACADEMIC INTEGRITY

All forms of academic dishonesty (cheating, plagiarism, etc.) are expressly forbidden by District rules and will not be tolerated in this course. Any student who violates these rules will receive the grade of "F" and be subject to disciplinary action by the University. If you have any questions as to what constitutes cheating and/or plagiarism, make sure you ask me (and refer to pp. 551-554 of the Student Catalog).

Topic	Textbook Chapter
History of Toxicology	
General Principles of Toxicology	2
Toxicity Interactions	2
Disposition of Toxicants	5
Absorption	
Distribution	
Excretion	
Biotransformation	6
Respiratory Tract Toxicology	15
Toxic Responses of the Nervous System	16
Hepatotoxicity	13
Developmental Toxicology	10

EOH 457
Water and Waste Water
Spring, 2006
Tuesdays, 1900-2145 in JD 2520

Maurice Oillataguerre, M.S., M.P.A., R.E.H.S.
Phone: (661) 478-1107
Email: moillataguerre@ci.glendale.ca.us (refer to "EOH 457" in subject line)
Office: JD 1510 (phone x7918)

Office Hours: Tuesday: 6:00 pm – 7:00 pm and by appointment

Text: Water and Waste Water Technology (ISBN# 0-13-097325-4)
Fifth Edition, Mark Hammer & Mark Hammer, Jr.

Reading Assignments:		
	Exam 1: 2,4	(March 7, 2006)
	Exam 2: 5,9,10	(April 25, 2006)
	Final: 4,5,9,10,11,12,13	(May 23, 2006)

Exams: Three exams: 2 midterms (25% each) and a cumulative final (30%)
Please bring a Scantron. There are no make-up exams. Your lowest exam score will be utilized in place of a missing midterm if you miss an exam (the Final Exam will be converted to an equivalent 100-point score). The Final must be taken – no exceptions.

Course Grades: Grades will be assigned based on the following point system:

Midterm 1:	100 points (25%)
Midterm 2:	100 points (25%)
Final:	120 points (30%)
Attendance:	40 points (10%)
Oral Presen.:	20 points (5%)
Homework:	20 points (5%)
Total -	**400 Points**

The Final Grade will be based on a curve with the following distribution:

A – 25%
B - 35%
C – 30-40%
D/F – 0-10%

Attendance: You are allowed **ONE** unexcused absence. 4 points (1%) will be deducted for each additional absence.

Homework: Each student will write a 2-3 page short summary of a newspaper article or a research journal article. This will be the only graded homework assignment. However, there will be homework assignments that will not be graded (i.e., problems, etc.).

Oral Presentation: Each student will do a short presentation (5-7 minutes) on a water-related topic. The focus of the presentation will be to improve students' public speaking skills. Each student will receive 10 points just for doing the presentation. The remaining 10 points will be assigned based on the quality of the presentation.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
Department of Environmental and Occupational Health

EOH 458 Vector Control
Fall 2002 Instructor: Dr. John Schillinger

Catalog Description

The identification and control of arthropods and other vectors of disease.

Course Objectives

Students during the course will:

1. Identify the arthropod and animal vectors of diseases of public health importance.
2. Review the mechanisms of vector disease transmission.
3. Discuss the methods and devices used for vector surveillance.
4. Analyze mechanical, biological and chemical methods for vector control.
5. Discuss problems and benefits of integrated pest management as applied to public health vector problems.
6. Apply the principles of safety and environmental protection in the selection and use of pesticides and other chemicals.
7. Discuss the mechanisms of adaptation and resistance in vector populations.
8. Review pesticide toxicity and development of bio-rational chemicals.

Course Content

I. Introduction to Vector Control
   a. vector definitions
   b. types of disease transmission
   c. types of vector controls

II. Biology of Important Arthropods
   a. biology of phylum Arthropoda
   b. taxonomy and morphology of the Insecta
   c. taxonomy and morphology of the Arachnida
   d. identification keys

III. Major Disease Transmitting Arthropods
   a. Acarina (ticks and mites)
   b. Anaplura (lice)
   c. Hemiptera (bed bugs and cone-nosed bugs)
   d. Siphonaptera (fleas)
   e. Othoptera (cockroaches)
   f. Diptera (domestic flies, biting flies, mosquitoes)

IV. Major Venomous Arthropods
   a. Vespidae (wasps)
   b. Bombidae and Apidae (bees)
   c. Arachnidae (spiders and scorpions)

V. Vertebrate Vectors and Hazards
   a. rodents
   b. domestic pets
   c. wild mammals and birds
   d. venomous snakes and amphibians

VI. Pesticides and Pest Control
   a. categories of chemical and physical agents
   b. acute and chronic toxicity
   c. EPA and California regulation of pesticides
   d. safe handling and use of pesticides
   e. integrated pest management

Method of Instruction

The course will be taught in a lecture format with videos, web-based resources, and laboratory exercises for vector identification. (There is not a separate lab section for the course.) Reading assignments for the required text, web sites, and handout materials will be indicated in class and by email. Each student is required to have an active email account.
A research paper is optional. It will detail the vector control practices and IPM for a specific vector problem. The report will be neatly typed, double-spaced and minimum 7 pages in length with additional pages for references. The citation sequence system is preferred. Graphics and images are encouraged if they help convey important information.

Methods of Evaluation

Exams-
Three exams will be given consisting of multiple-choice, short answer, matching and brief essays based on lecture material (about 60%), website information (about 20%) and vector lab identification (about 20%).

Papers-
Papers will be judged on accuracy (50%), comprehensiveness (30%), neatness (10%), and spelling, grammar and punctuation (10%).

Class participation-
Each student will be expected to bring 5 different vector specimens to the class during weeks 5 through 10 of the semester.

Grading-
Grades will be assigned according to the total points accumulated from the two quizzes, and final exam (30% each), and class participation (10%). If the optional paper is chosen for 10% of grade, the two quizzes will count for 25% each. Grades will be based on 90-100% = A, 80-90% = B, 65-80% = C, 55-65 = D, and < 55 = F. The +/- system will be used in borderline situations and class attendance and participation will be considered in those instances. Academic dishonesty will not be tolerated. Seek advice on plagiarism if any doubt exists.

Textbooks

The required text is Medical Entomology for Students by Mike. W. Service, Cambridge University Press, 2nd Edition, 2000.

References

Beaty, B.J. and Marquardt, W.C. (eds.) 1996 The Biology of Disease Vectors. University Press of Colorado.

Chavasse, D.C. and Yap, H.H. (eds.) 1997 Chemical Methods for the Control of Vectors and Pests of Public Health Importance. WHO/CTD/WHOPES/97.2 World Health Organization, Geneva.

Ebeling, W. 1975 Urban Entomology. University of California, Davis, Division of Agricultural Sciences.

Eldridge, B.F. and J.D. Edman 2000 Medical Entomology: A Textbook on Public Health and Veterinary Problems Caused by Arthropods. Kliewer Academic.

Fitzwater, E.D. 1983 Vertebrate Pest Management. National Animal Damage Control Association.

Frankie, G. and C. Foehler (eds.) 1983 Urban Entomology: Interdisciplinary Perspectives. Praiger Publishers.

Harwood, R.F. and M.T. James 1979 Entomology in Human and Animal Health. 7th Ed Macmillan Publishing Co.

Kettle, D.S. 1984 Medical and Veterinary Entomology. Wiley Interscience.

Lane, R. P. and Crosskey, R. W. (eds.) 1993 Medical Insects and Arachnids. Chapman & Hall.

Meehan, A.P. 1985 Rats and Mice: Their Biology and Control. Harcourt Brace Jovanavich Publishers.

Pedigo, L.P. 1998 Entomology and Pest Management. 3rd Edition.

World Health Organization 1997 Vector Control: Methods for Use by Individuals And Communities. World Health Organization, Geneva.

HEALTH SCIENCES 459
HAZARDOUS WASTE MANAGEMENT
Fall 2005

Instructor: Donald V. Greenlee, Ph.D.
Phone: (818)677-7476 (Health Sci. office)
Office: JD 1512

Office Hours:
Thursday 6-7 PM

COURSE DESCRIPTION: Principles, regulations and practice of optimal hazardous material and hazardous waste management.

COURSE OBJECTIVES: This course provides the background knowledge for proper management of hazardous wastes. Federal regulations pertaining to management of hazardous wastes at operating facilities (RCRA), at abandoned sites (CERCLA) and for individual chemicals that are not addressed by either RCRA or CERCLA (TSCA) will form the core of this training. Where significantly different from federal regulations, California regulations for management of hazardous waste will be presented.

SYLLABUS:

Session #	Topic	Reading Assignment
1	RCRA - Hazardous Waste Identification/Classification	Guide to Readers; Chapter 2
2	Recycling; Generators Classifications & Applicable Regulations	Chapters 2 &3
3	Shipping and Transportation	Chapter 4
4	Standards for Hazardous Waste Management Facilities	Chapter 5
5	Standards for Hazardous Waste Management Facilities (continued)	Chapter 5
6	Midterm Exam #1	(Sessions 1-5)
7	Standards for Hazardous Waste Management Units	Chapter 6
8	Permits and Interim Status	Chapter 7
9	Land Disposal Restrictions and RCRA Corrective Action	Chapters 8 &9
10	Enforcement and State Authorization	Chapter 10
11	CERCLA - Release Reporting and Response Actions	Chapters 12 & 13; p. 297

SYLLABUS (continued):

Session #	Topic	Reading Assignment
12	Midterm Exam #2	(Sessions 7-11)
13	Remedial Response & Miscellaneous Provisions	Chapters 14 & 15
14	TSCA – Use, Storage, Disposal & Cleanup of PCBs	Chapters 17 & 18; pp. 382-383
Dec. 15	Final Exam (8-10 PM)	(Sessions 1-14)

REQUIRED TEXT: Wagner, Travis P., The Complete Guide to the Hazardous Waste Regulations, Third Edition, John Wiley & Sons, New York, 1999. ISBN #: 0-471-29248-6.

GRADING POLICY: There will be two mid-term exams and one final exam, each worth 100 points. Final grades will be determined using a curve based on a total possible 300 points. In addition, graduate students are expected to complete one paper or project on a mutually agreed upon topic. No extra credit will be given. Cheating on exams will result in a zero score for that exam which will be averaged with remaining scores. All exams are closed book unless the instructor specifically states otherwise.

COURSE SYLLABUS

EOH 453, FALL 2005

Dr. Owen Seiver
818-677-2347
JD 1517

owen.seiver@csun.edu

OFFICE HOURS: Friday: 8-9am (By appointment)
Monday Wednesday: 12-1pm
Wednesday: 1-4pm

COURSE OBJECTIVES: Upon completion of the course students should be able to:

1. Identify major concepts of Indoor Air Quality Assessments
2. Understand the theories and practical aspects of residential construction
3. Demonstrate the concepts involved in defect analysis.
4. Identify the risk assessment criteria in evaluating mold and indoor hazards.

SUMMARY OF TOPICS:

1. History of housing in the United States
2. Foundations
3. Building Construction
4. Electrical Aspects
5. Plumbing Aspects
6. Mold Contamination and construction defects.
7. Radon
8. EMF exposure risks
9. Heating, ventilation, emissivity and Infrared Camera Imaging

COURSE REQUIREMENTS:

1. Three exams each weighted equally based 80-90% on lecture and 10% on reading assignments. 80%
2. Attendance 5%
3. Class Participation 5%

Text: (none) Reading assignments will be passed out in class.

Grades will be assigned as follows: A= 90%
B= 80%
C= 70%
D= 60%
F= <59%

Graduate students are required to prepare a Term Paper on a topic of housing. (Instructor Approval Required).

Exam Dates will be announced in class at least 1 week prior to the exam.

There are no make-up exams. Your lowest grade is doubled. Students must take the final exam.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
College of Health and Human Development
Department of Environmental and Occupational Health

EOH 455L Laboratory for Microbiological Hazards in Environmental Health
Fall 2005 Instructor: Dr. John Schillinger

Course Description

Standard procedures for basic microbiological analyses with a focus on the collection and laboratory examination of water, wastewater, milk, foods, surfaces, air and other environmental samples.

Course Objectives

During the laboratory course, students will:

1. Perform the routine tests for indicator bacteria.
2. List the principles and limitations of the laboratory tests.
3. Collect data and record results in a laboratory notebook.
4. Analyze data and write conclusions for each testing exercise.
5. List the quality control requirements for sample collection, testing and data handling.
6. Review the rationale for choosing appropriate test procedures.

Required Text and Materials

No text is required. Material from the following references will be supplied:
Standard Methods for the Examination of Water and Wastewater, 17th Ed , APHA.
Standard Methods for the Examination of Dairy Products, 16th Ed. R.T. Marshall Ed., APHA.
Compendiium of Methods for the Microbiological Examination of Foods, 3rd Ed., C. Vanderzant and D. F. Splittstoesser, Eds., APHA.
Bioaerosols, Assessment and Control, J. Macher Ed., ACGIH.

A laboratory coat is optional but desirable – a long shirt may be used instead and stored at the bench station drawer. Safety glasses are required. Valuable items of clothing should not be worn to the laboratory.

Method of Instruction

Students will perform basic laboratory analyses as members of a two or three person team. All media and equipment will be provided at the bench stations.

A composition book (black bound 200 pages) will be required as notebook to record all laboratory data. The book will be submitted at the end of the semester. Typed

laboratory reports for each exercise will be due the week following the completion of the exercise.

Method of Evaluation

Quizzes- Two lab quizzes will be given composed of 25 questions involving the procedures used and calculations employed in the lab exercises.

Notebook - The lab notebook will be graded for completeness (not necessarily tidiness), and effectiveness in conveying experimental results.

Reports- The written reports will include the title, purpose of the exercise, methods, raw data, calculated results, and a conclusion/discussion paragraph.

Grading – Grades will be computed on the basis of the quizzes (20% each), the notebook (10%), and the reports (5.0% each). Grades will generally be assigned as follows:

90-100 %	A
80-89 %	B
65-79 %	C
<65 %	F

Academic dishonesty will not be tolerated.
Cell phones and pagers should be turned off during class.

Course Schedule

Aug 29	Introduction, Lab Safety, Basic Lab Procedures
Sep 12	Microscopy, Basic Lab Methods
Sep 19	Natural Water Quality Testing
Sep 26	Indicator Ratios and Resuscitation Methods
Oct 3	Potable Water Testing
Oct 10	Swimming Pool, Spa, and Natural Recreational Water Testing
Oct 17	IMViC Testing for Coliform Identification
Oct 24	Quiz I
Oct 31	Milk Testing
Nov 7	Hazard Analysis for Potentially Hazardous Foods
Nov 14	Testing for Foodborne Pathogens
Nov 21	Surface Testing
Nov 28	Bioaerosol Testing
Dec 5	Quiz II

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
College of Health and Human Development
Department of Environmental and Occupational Health

EOH 455L Microbiological Hazards in Environmental Health
Instructor: Dr. John Schillinger
Fall 2005

Course Description

The study of infectious disease agents transmitted through water, wastewater, milk, foods, surfaces, and air with a focus on their assessment, prevention and control. The course is integrated with the laboratory section of 455L.

Course Objectives

During the course, students will:

1. Review general microbiological and taxonomic concepts.
2. Assess the significance of person-to-person transmission of disease in terms of morbidity and mortality.
3. Discuss the hazards of the major pathogens involved with water, milk, foods, air and surfaces.
4. Review sampling methods and strategies for collection of environmental samples.
5. Evaluate the bacterial tests routinely used for assessing public health risks in the environment.
6. List appropriate control measures for preventing environmentally associated infections and intoxications.
7. Survey the physical and chemical processes for microbial destruction and tests for disinfection effectiveness.
8. Review concepts of nosocomial infection control.

Course Outline

I. Introduction and Review of Microbiological Concepts
   - A. microbial evolution
   - B. classification of microbes
   - C. identification techniques
   - D. taxonomy of microbes
   - E. enumeration methods

II. Communicable Disease Transmission
   - A. person-to-person transmission
   - B. environmental transmission
   - C. reportable diseases and conditions

III. Microbial Indicator Concepts
- A. Escherichia coli and coliforms
- B. fecal streptococci and enterococci
- C. anaerobes and phage
- D. heterotrophic counts

IV. Water Microbiology
- A. natural water quality
- B. potable water testing
- C. swimming pools and spas
- D. recreational water testing
- E. shellfish growing waters
- F. wastewater effluents and stormwater

V. Milk and Dairy Products
- A. historical and current pathogens
- B. microbial indicators and phosphatase test
- C. zonal inhibition assay

VI. Food-Borne Illness and Prevention
- A. biological toxins
- B. parasites and other pathogens transmitted
- C. classical food-borne infections
- D. classical food-borne intoxications
- E. prevention and HACCP
- F. epidemiological investigations and sampling

VII. Bioaerosol Hazards
- A. sources of outdoor airborne pathogens
- B. indoor bioaerosols: toxins, allergens, pathogens
- C. bioaerosol sampling and analysis
- D. prevention and mitigation

VIII Microbiological Testing of Surfaces
- A. surfaces and disease transmission
- B. surface testing methods and indicators

IX. Microbial Destruction
- A. physical and chemical processes
- B. common disinfectants
- C. A.O.A.C. phenol coefficient test
- D. disinfection kinetics

Textbooks Required

Control of Communicable Diseases Manual 17th Ed., 2000. J. Chin, Ed.
Readings in Microbiological Hazards in Environmental Health

Method of Instruction

The course will be taught in lecture format with video, handout, and web-based information incorporated. A separate laboratory course is synchronized with the subject matter of the lectures.

A research paper is optional. It will be 7 pages minimum of neatly typed double-spaced review of one of the emerging diseases in environmental health and its control. (chosen with instructor) Reference pages will be in addition using the citation-sequence system.

Graduate students have a different research paper requirement. The paper or project (chosen with instructor) will be 15-20 pages in length with 30-40 references.

Methods of Evaluation

Exams-
Two quizzes and a final exam will be given. They will consist of multiple-choice, short answer, matching, and short essay questions. Dates will be announced in class. Material for the questions will come primarily from the lecture material and readings. A half page scantron is required for all exams.

Grading-
Course grades will be determined from the total points of the quizzes (30% each), and the final exam (40%). If the optional research paper is chosen, the final exam will be worth 30% of the grade and the paper will count for 10%.

Course grades will generally be assigned as 90-100% = A, 80-90% = B, 65-80% = C, 55-65% = D, and < 55 = F. The plus/minus system will be used sparingly. Attendance and class participation will be considered in assigning grades in borderline situations.

Academic dishonesty will not be tolerated. (see pages 552-554 of the University catalog). Any questions about plagiarism must be resolved with instructor.

LOS ANGELES COUNTY • DEPARTMENT OF HEALTH SERVICES

PUBLIC HEALTH LETTER

Mark Finucane
Director, Department of Health Services

April 1996
Vol. 18, No. 4

Shirley Fannin, M.D.
Director, Disease Control Programs

REPORTABLE DISEASES: UPDATE

State law (*California Code of Regulations*, Title 17, Section 2500, Public Health, 1996) requires health care providers to report the following diseases or conditions of public health importance to the local health department. **Note: This list is new and supersedes previous lists.**

(1) COMMUNICABLE DISEASES

Acquired Immune Deficiency Syndrome (AIDS)
• Amebiasis⊕
• Anisakiasis⊕
• Anthrax▲
Babesiosis⊕
• Botulism (Infant, Foodborne, Wound)▲
• Brucellosis
• Campylobacteriosis⊕
Chancroid
Chlamydial Infections
• Cholera▲
• Ciguatera Fish Poisoning▲
• Coccidioidomycosis
Colorado Tick Fever⊕
Conjunctivitis, Acute Infectious of the Newborn, Specify Etiology⊕
• Cryptosporidiosis⊕
• Cysticercosis
Dengue▲
• Diarrhea of the Newborn, Outbreaks▲
Diphtheria▲
• Domoic Acid Poisoning (Amnesic Shellfish Poisoning)▲
• Echinococcosis (Hydatid Disease)
Ehrlichiosis
Encephalitis, Specify Etiology: Viral, Bacterial, Fungal, Parasitic⊕
• *Escherichia coli* O157:H7 Infection▲
• Foodborne Disease • ⊕
• Giardiasis
Gonococcal Infections
Haemophilus influenzae, Invasive Disease⊕
• Hantavirus Infections▲
• Hemolytic Uremic Syndrome▲
• Hepatitis A⊕
Hepatitis B (Specify Acute Case or Chronic)
Hepatitis C (Specify Acute Case or Chronic)
Hepatitis D (Delta)
• Hepatitis, Other, Acute
Hepatitis, Viral
Kawasaki Syndrome (Mucocutaneous Lymph Node Syndrome)
• Legionellosis
Leprosy (Hansen Disease)
• Leptospirosis
• Listeriosis⊕
Lyme Disease
Lymphocytic Choriomeningitis⊕
Malaria⊕
• Measles (Rubeola)⊕
• Meningitis, Specify Etiology: Viral, Bacterial, Fungal, Parasitic⊕
Meningococcal Infections▲
Mumps
Non-Gonococcal Urethritis (excluding laboratory-confirmed chlamydial infections)
• Paralytic Shellfish Poisoning▲
Pelvic Inflammatory Disease (PID)
Pertussis (Whooping Cough)⊕
• Plague, Human or Animal▲
• Poliomyelitis, Paralytic⊕
• Psittacosis⊕
• Q Fever⊕
• Rabies, Human or Animal▲
Relapsing Fever⊕
Reye Syndrome
Rheumatic Fever, Acute
Rocky Mountain Spotted Fever
Rubella (German Measles)
Rubella Syndrome, Congenital
• Salmonellosis (other than Typhoid Fever)⊕
Scabies (Atypical or Crusted)*▲
• Scombroid Fish Poisoning▲
• Shigellosis⊕
• Streptococcal Infections (Outbreaks of any Type and Individual Cases in Food Handlers and Dairy Workers Only)⊕
• Swimmer's Itch (Schistosomal Dermatitis)⊕
Syphilis (Primary & Secondary Cases & Cases in Pregnant Women)▲
Syphilis (All Other)⊕
Tetanus
Toxic Shock Syndrome
• Toxoplasmosis
• Trichinosis⊕
• Tuberculosis⊕
• Tularemia
• Typhoid Fever, Cases and Carriers⊕
Typhus Fever
• *Vibrio* Infections⊕
• Viral Hemorrhagic Fevers (e.g., Crimean-Congo, Ebola, Lassa and Marburg viruses)▲
• Water-associated Disease⊕
Yellow Fever▲
• Yersiniosis⊕
OCCURRENCE OF ANY UNUSUAL DISEASE
e.g., Invasive Group A Streptococcal Infections (*S. pyogenes*)*⊕
Including Streptococcal Toxic Shock Syndrome and Necrotizing Fasciitis (Do not report individual cases of pharyngitis or scarlet fever.)
OUTBREAKS OF ANY DISEASE (Including diseases not listed in Section 2500). Specify if institutional and/or open community.▲

(2) NON-COMMUNICABLE DISEASES OR CONDITIONS

Alzheimer's Disease and Related Conditions
Disorders Characterized by Lapses of Consciousness

▲ = Report immediately by telephone.
⊕ = Report by mailing, telephoning, or electronically transmitting a report within one (1) working day of identification of the case or suspected case.
• = When two (2) or more cases or suspected cases of foodborne disease from separate households are suspected to have the same source of illness, they should be reported immediately by telephone.
* = Reportable to Los Angeles County.
No diamond or cross symbols: Report within seven (7) calendar days by mail, telephone, or electronic report from the time of identification.

MICROBIOLOGICAL TERMS

Infection
Intoxication
Disease
Nosocomial Infection
Contamination
Disinfection
Pathogenicity
Normal Flora
Carrier
Incubation Period
Endemic
Epidemic
Virulence
Etiologic Agent
Fomites
Zoonosis
Dysentery
Septicemia
Gastroenteritis

Bacteria
Protozoa
Rickettsia
Algae
Fungi
Amoebae
Helminths
Viruses
Phage

Bacilli
Cocci
Vegetative Cell
Diplococcus
Hyphae
Cyst
Egg
Trophozoite
Vibrio
Spirillum
Spirochaete

Flagellum
Cilium
Pilus
Plasmid
Capsule
Bacteriocin
Peptidoglycan
Sporulation
Envelope
Germination
Capsid
Endospore
Serotype
Enterotoxin
Exotoxin
Endotoxin
Encyst
Excyst

Bacteriology
Mycology
Protozoology
Virology
Immunology
Serology

Flagellum - Eukaryotic type has characteristic 9 + 2 arrangement of microtubules with movement created by the protein dynein which forms arms that project from the surface of the tubules and cause the doublets to slide in relation to one another. The resulting flexing causes a back and forth movement of the flagellum which propells the organisms through the water. (Sci. Amer. 1980)

Prokaryotic type is a complex organelle consisting of a basal body contained within the cell envelope and two structures: a hook and a helical filament composed of flagellin (protein) subunits. The basal body is a motor powered by protons that pass through the motor down a transmembrane electrochemical gradient. The bacterium can reverse the direction of spin to propel itself either foreward or backward.

Cilium - Eukaryotic cell structures resembling flagella but organized in a system connected by a network of fibers running beneath the surface of the cell. The cilia beat in synchronized pattern much like a field of wheat bending in the breeze. (Microbiology by Alcamo, 1986)

Fimbria - Rigid appendages composed of pilin (protein) subunits. Fimbriae are found primarily on the surface of Gram negative bacteria and are used to aid cell attachment to surfaces.

Pilus - A specialized fimbria that is involved in bacterial conjugation (transfer of a plasmid from one bacterium to another).

Plasmid - A small closed loop of DNA existing apart from the bacterial chromosome (nucleoid). Plasmids contain few genes, but are significant because they carry traits for drug resistance. For this reason they are often called R factors ("R" for resistance).

Capsule - A layer of polysaccharides and small proteins surounding a bacterial cell which serves as a buffer between the cell and its external environment and which may protect cells from phagocytosis. When the capsule is extensive, it is commonly referred to as a slime layer or glycocalyx.

Bacteriocin - Proteins excreted by some bacteria to inhibit or destroy other bacteria.

Peptidoglycan - A very large molecule composed of alternating units of two amino containing carbohydrate, N-acetylglucosamine and N-acetylmuramic acid. It occurs in bacterial cell walls as multiple layers joined by side chains of four amino acids forming in effect an extremely large and rigid molecule. In Gram positive bacteria, the peptidoglycan layer is about 25 nm thick and contains an additional polysaccharide called teichoic acid. Gram negative bacteria have a layer only about 3 nm thick.

Envelope - Some microbiologists refer ot the cell membrane, cell wall and capsule (if present) together as the cell envelope. (see also capsid)

Endospore - Highly resistant structures produced by certain Gram positive bacteria (esp. Bacillus and Clostridium). In the cytoplasm , thick layers of peptidoglycan form around the replicated chromosome and the spore becomes dehydrated with large amounts of dipicolinic acid to stabilize the proteins. This process is called sporulation. When the external environment is favorable, the protective layers break down and the spores germinate to become vegetative cells.

Capsid - The coat of protein surrounding the core of nucleic acid (genome) of a virus. The capsid gives shape to the virus and is responsible for the helical, icosahedral or complex symmetry. The capsid is made up of individual protein subunits called capsomeres. Many viruses are surrounded by a flexible membrane known as an envelope. The envelope is composed of lipids and protein and is essentially similar to the host cell membrane. A completely assembled virus outside its host cell is known as a virion.

Serotype - A specific reaction indicating an exact match between an antigen (such as a bacterium of virus) and an antibody prepared against that strain of organism. Usually serotype refers to subspecies taxonomic groups.

Enterotoxin - A toxin produced by bacteria which causes a gastroenteritis.

Exotoxin - A toxin produced by bacteria which is excreted into the environment surrounding the bacterial cells.

Endotoxin - A metabolic poison produced chiefly by Gram negative bacteria; endotoxins are part of the bacterial cell wall and consequently are released on cell disintegration. They are composed of lipid-polysaccharide-peptide complexes and can cause a febrile response.

Encyst - The process of cyst formation in protozoa.

Excyst - The process of transformation of a protozoan cyst to the free-living or trophozoite stage.

HEALTH SCIENCES 459
HAZARDOUS WASTE MANAGEMENT
Fall 2005

Instructor: Donald V. Greenlee, Ph.D.
Phone: (818)677-7476 (Health Sci. office)
Office: JD 1512

Office Hours:
Thursday 6-7 PM

COURSE DESCRIPTION: Principles, regulations and practice of optimal hazardous material and hazardous waste management.

COURSE OBJECTIVES: This course provides the background knowledge for proper management of hazardous wastes. Federal regulations pertaining to management of hazardous wastes at operating facilities (RCRA), at abandoned sites (CERCLA) and for individual chemicals that are not addressed by either RCRA or CERCLA (TSCA) will form the core of this training. Where significantly different from federal regulations, California regulations for management of hazardous waste will be presented.

SYLLABUS:

Session #	Topic	Reading Assignment
1	RCRA - Hazardous Waste Identification/Classification	Guide to Readers; Chapter 2
2	Recycling; Generators Classifications & Applicable Regulations	Chapters 2 &3
3	Shipping and Transportation	Chapter 4
4	Standards for Hazardous Waste Management Facilities	Chapter 5
5	Standards for Hazardous Waste Management Facilities (continued)	Chapter 5
6	Midterm Exam #1	(Sessions 1-5)
7	Standards for Hazardous Waste Management Units	Chapter 6
8	Permits and Interim Status	Chapter 7
9	Land Disposal Restrictions and RCRA Corrective Action	Chapters 8 &9
10	Enforcement and State Authorization	Chapter 10
11	CERCLA - Release Reporting and Response Actions	Chapters 12 & 13; p. 297

SYLLABUS (continued):

Session #	Topic	Reading Assignment
12	Midterm Exam #2	(Sessions 7-11)
13	Remedial Response & Miscellaneous Provisions	Chapters 14 & 15
14	TSCA – Use, Storage, Disposal & Cleanup of PCBs	Chapters 17 & 18; pp. 382-383
Dec. 15	Final Exam (8-10 PM)	(Sessions 1-14)

REQUIRED TEXT: Wagner, Travis P., The Complete Guide to the Hazardous Waste Regulations, Third Edition, John Wiley & Sons, New York, 1999. ISBN #: 0-471-29248-6.

GRADING POLICY: There will be two mid-term exams and one final exam, each worth 100 points. Final grades will be determined using a curve based on a total possible 300 points. In addition, graduate students are expected to complete one paper or project on a mutually agreed upon topic. No extra credit will be given. Cheating on exams will result in a zero score for that exam which will be averaged with remaining scores. All exams are closed book unless the instructor specifically states otherwise.

OCCUPATIONAL SAFETY: HEALTH SCIENCE 465

2005 Fall Term, Tuesday - 7:00 to 9:50 PM

Text: Accident Prevention: Engineering and Technology, 12th Edition, Published by the National Safety Council

Instructors:

Susan Harmon
phone: (310) 317-5252
email: sharmon@hrl.com

Connie Brown
805-504-1340
connie@ehssolutionsinc.com

office hours: By Appointment Only

Class Objective

Upon completion of 465, the student will be able to identify potential safety hazards in the workplace, assess those hazards, and develop/implement possible corrective action. The student will have the knowledge of applicable regulations, guidelines and standards in reference to safety, and will understand the basic elements of a safety program.

Exams

There are three equally weighted non-cumulative exams. No make-up exams will be given unless the student demonstrates extreme hardship. **Exams are presented scheduled for September 27, November 1, and December 13, 2005.**

Research Paper

Graduate students are required to write a paper, five to ten pages in length. Details to come.

Syllabus

Introduction to Occupational Safety
- historical look at safety
- regulatory overview

Safety Programs

Fire Protection
- hazardous material storage
- extinguishment
- alarm systems
- flammable liquids
- signage

Contractor Safety
- scaffolding
- trenching
- demolition
- working surfaces
- ladders
- housekeeping

Illumination
- colors
- lighting and glare
- signage

Confined Space
- permit Vs non-permit
- monitoring equipment

Emergency Preparedness

Electrical Safety
- lockout tagout
- grounding and bonding

Welding and Cutting
- cylinder safety

Personal Protective Equipment
- respiratory protection
- eyes, head, face and hands
- hearing protection

Fall Protection

Powered Industrial Trucks

Process Safety

Ergonomics
- workspace design
- risk factors
- carpal tunnel
- back safety

Machine Guarding
- Cutting oils

Hand Tools (1/2 lecture)

Non Ionizing radiation
- laser classes
- laser safety officer responsibilities
- personal protective equipment
- RF and microwaves

Workplace Violence

OCCUPATIONAL SAFETY: HEALTH SCIENCE 465

2005 Fall Term, Tuesday - 7:00 to 9:50 PM

Text: Accident Prevention: Engineering and Technology, 12th Edition, Published by the National Safety Council

Instructors: Susan Harmon
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Class Objective
Upon completion of 465, the student will be able to identify potential safety hazards in the workplace, assess those hazards, and develop/implement possible corrective action. The student will have the knowledge of applicable regulations, guidelines and standards in reference to safety, and will understand the basic elements of a safety program.

Exams
There are three equally weighted non-cumulative exams. No make-up exams will be given unless the student demonstrates extreme hardship. **Exams are presently scheduled for September 27, November 1, and December 13, 2005.**

Research Paper
Students are required to write a paper. Choose a recent current event that is safety-related. Explain what happened, what were the causal factors involved, what regulations were involved and/or violated, and what you would do to rectify the situation. Five to ten pages in length, double-spaced. Due December 13, 2005.

Syllabus

Lecture 1: Introduction to Occupational Safety
- historical look at safety
- regulatory overview

Lecture 2: Safety Programs
Fire Protection
- hazardous material storage
- extinguishment
- alarm systems
- flammable liquids
- signage

Lecture 3: Fire Protection (cont.)

Lecture 4: Contractor Safety
- scaffolding
- trenching
- demolition
- working surfaces
- ladders
- housekeeping

Lecture 5: EXAM
Contractor Safety (cont.)
Illumination
- colors
- lighting and glare
- signage

Lecture 6: Confined Space
- permit Vs non-permit
- monitoring equipment

Fall Protection

Lecture 7: Personal Protective Equipment
- respiratory protection
- eyes, head, face and hands
- hearing protection

Lecture 8: Machine Guarding
- Cutting oils

Hand Tools (1/2 lecture)

Lecture 9: Safety Walk Orientation
Electrical Safety
- lockout tagout
- grounding and bonding

Lecture 10: EXAM
Non Ionizing radiation
- laser classes
- laser safety officer responsibilities
- personal protective equipment
- RF and microwaves

Lecture 11: Powered Industrial Trucks

Lecture 12: Safety Walk

Lecture 13: Emergency Preparedness
Process Safety
Welding and Cutting
- cylinder safety

Lecture 14: Workplace Violence

Lecture 15: Ergonomics
- workspace design
- risk factors
- carpal tunnel
- back safety

Lecture 16: EXAM
Paper Due

The Occupational Environment

EOH 466A

Dr. Peter Bellin, CIH, Ph.D.

FALL 2005

Welcome to the online syllabus for "The Occupational Environment". This course provides an overview of industrial hygiene: the recognition, evaluation and control of hazards in the work place. This page provides a class schedule and hyperlinks to lecture notes, problem sets and hyperlinks pertinent to the lectures

There are two sections of the class:

- Tuesday, Thursday 11 AM to 12:15 PM, Juniper 1125
- Tuesday 4 PM to 7 PM, Sagebrush 100

Course objectives:

Students will

- know the history of occupational health (industrial hygiene) in the United States.
- be able to conduct basic industrial hygiene calculations (concentration, time-weighted average, ventilation and noise)
- list common diseases related to the work and the workplace.
- discuss occupational health in a world-wide context.
- understand the implications of ethics (The Canons of Industrial Hygiene Practice) in the practice of environmental and occupational health.
- discuss how regulations, on the Federal and State (California) level affect the practice of industrial hygiene.

OFFICE HOURS AND ADVISEMENT

I can be reached by email, by phone (818-677-4719) or by dropping by my office during office hours (Jacaranda Hall Room 1515).

My physical office hours are: Monday 6 to 7 (by appointment), Tuesday 3:00 - 4 PM, Thursday 10 - 11. I do check my email regularly, and that is usually a good way to obtain advisement from me.

TEXT BOOK AND GRADING

The text book for this class is specific chapters from "*The Occupational Environment - Its Evaluation and*

Control" published by AIHA Press. You can purchase the whole book, or just specific chapters (1, 3, 4, 6, 21, 22, 24, 28, 32, 33, 35 and 36) directly from AIHA Press. Visit this link for details on the book. The assigned chapters have also been placed on reserve in Oviatt Library. Search for my last name to find reserve materials for this class. You can view the electronic reserves by entering your library barcode number and the password I will announce in class.

The book will supplement the lectures, and is an excellent general reference for you to use in your career.

There will be three examinations, weighted by the number of points in each exam (between 50 and 100 points per exam.) Make up exams are not normally permitted. Missed exams will be graded as a score of 40 % of the maximum point total for the missed exam.

There is one short writing assignment, discussed in Week 1 (see link below). This will account for up to 10 points of your grade.

There is an assignment to conduct an ergonomic assessment due November 9th. This project will account for up to 10 points of your grade.

Finally, there is a measurement project. You will be measuring noise levels in a variety of locations. This project will account for up to 10 points of your grade.

Grades will be calculated from the total number of points from the exams, paper, and two projects. The minimum passing score (grade of C) is 60 % of the total. Students scoring below 60 % will be assigned a grade of F.

Lecture Schedule

Download lecture notes as closely to the class meeting as possible.

I may make changes at the last minute!

Date	TOPIC	READING
August 30 August 30, September 1	Introduction History of Occupational Health Film	Chapter 1 (lecture notes) Photo gallery assignment Read this article in MMWR. Vintage films.
September 6 September 6, 8	Occupational Health Law and Regulations NOTE: Half on line this week. Viewing videos, to the right. Do this in advance of lecture.	Chapter 4 (lecture notes) Visit Federal OSHA web site View Video on OSHA inspection. View Video on OSHA standards development. Find California OSHA regulations

		here.
September 8 (6 PM)	SCAIHA DINNER MEETING	Try to to attend, network with professionals.
September 13 September 13, 15	Industrial Hygiene and Control of Exposures **BRING A CALCULATOR TO CLASS!**	Chapters 3 and 6 Week 3 and 4 notes: Part 1 and Part 2 Review of math (if you need it) Problem Set 1.
September 20 September 20, 22	Industrial Hygiene and Control of Exposures	Chapter 32, Chapter 33 to p 866 Problem Set 2 Solutions to PS 2
September 27	EXAMINATION 1 Problem solutions.	No reading, just studying MORE PRACTICE PROBLEMS
October 4 September 29, October 4	Occupational Illnesses	This NIOSH link contains a report on occupational illness and injury. Notes
October 11 October 4, 6	Personal Protective Equipment	Chapter 35, 36 Notes
October 18 October 13, 18	Noise: Definitions and Measurement	Chapter 21, pages 435 - 439 Notes Sound Survey Assignment Manual for MK dosimeter here.
October 25 October 20, 25	Noise: Health Impact; Hearing Conservation Amendment	Chapter 21, pages 439 - 454 and 472 - 474 Cabot Safety Reports Audio Clips played in class Problem set 4 (slightly modified) Notes

October 27 (no class meeting)	Technical Symposium (page down to meeting information)	Attendance at the symposium is optional, not required.
November 1 November 1, 3	Noise: Controlling noise levels	Chapter 21, pages 454 - 472 notes
November 8	EXAMINATION 2	No reading, just worrying
November 10 (6 PM)	SCAIHA Meeting (joint with ASSE)	Try to attend and network.
November 15 November 10, 15	Non-ionizing radiation Heat stress	Chapters 22 and 24 notes Long EMF fact sheet
November 22 November 17, 22	Ergonomics **This week - class assignments, no in-class meeting.**	Chapter 28 ONLINE VIDEO NIOSH Page on Ergonomics OSHA Ergonomics web page notes
November 29 November 29, December 1	Occupational Health Around the World	notes Smithsonian exhibit on sweatshops My ILO photo slide show: down load and print only at your option (800 kb file) Weekend article from LA Times here. "Sweatshop-free clothing" I don't know the site myself, but in case your conscience is clouded. Images from China. Photos on ILO web site
		Ethics slides

December 6 December 6, 8	Industrial Hygiene: Professional Ethics NLM Database	Reading : assigned reading before class - to put lecture in a context. Last Problem Set
December 13	FINAL EXAMINATIONS	**T Th Section: 10:15 - 12:15** **T PM Section: 5:30 - 7:30**

Additional References

Patty's Industrial Hygiene and Toxicology. Multiple volumes covering all aspects. Very expensive, but comprehensive work. JS Wiley and Sons

Applications and Computational Elements of Industrial Hygiene CRC Press, 1999. Martin B. Stern and S.Z. Mansdorf, Editors.

Response to Occupational Health Hazards. A Historical Perspective. Van Nostrand Reinhold, 1992. Jacqueline Karnell Corn.

Deadly dust. Silicosis and the Politics of Occupational Disease in Twentieth Century America. Princeton University Press, 1991. David Rosner and Gerald Markowitz.

The Hawk's Nest Incident Martin Cherniak. This is an analysis of an occupational health disaster in the 1930's, where hundreds of workers died from acute silicosis in a tunneling project.

Web References

Occupational Health and Safety Administration (OSHA)

National Institute for Occupational Safety and Health (NIOSH)

California Division of Occupational Safety and Health

American Industrial Hygiene Association (AIHA)

Southern California Chapter of the AIHA (SCAIHA)

American Conference of Governmental Industrial Hygienists (ACGIH)

National Library of Medicine (NLM)

Listservs to join - here are a few listservs to join. They are electronic newsletters with regular information from and about OSHA and NIOSH

OSHA Quicktakes: subscribe on the main OSHA page, left hand side, half way down the screen.

NIOSH eNews: Monthly newsletter discussing NIOSH activity and views. Subscribe here.

The American Industrial Hygiene Association listserv, with low traffic on industrial hygiene issues. Subscribe here.

EOH 466B and 466B Lab
Evaluating the Occupational Environment

Spring 2005

Instructor: Nola J. Kennedy, PhD, CIH, CHMM
Lectures: Monday 4 – 6:45 PM; Room JD 3502
Labs: Monday 7 – 9:45 PM; Room JD 1626

The purpose of the course and lab is to provide each student with fundamental knowledge of the methods used to measure the concentration of chemicals in air, how to interpret and present this information, and how this information can be used to improve conditions that threaten health. Students will be expected to use computer software (word processing and spreadsheet) to accomplish data presentation. It is expected that students will take both the laboratory and the lecture simultaneously.

Course Objectives: To familiarize students with much of the instrumentation utilized in occupational and environmental health surveys. Monitoring equipment demonstrated and used will include air sampling pumps, filters, direct reading instruments, radio frequency monitors, noise monitoring equipment and analytical equipment. Students will be able to present and analyze data collected from monitoring surveys. Students will be able to prepare short reports summarizing the use of monitoring equipment. Students will be able to plan and implement an exposure monitoring program.

Evaluation: The course grade is based on exams. The exams will cover the various concepts and calculations discussed in lecture and lab. Each of the three exams will be equally weighted. Lab grades are based on submitted reports. The minimal passing score is 60 %. The minimum acceptable grade is C for EOH majors. Any student receiving a cumulative grade below 60 % will receive an F. Lab grades are based on submitted reports.

Graduate students must complete a class presentation to achieve a grade greater than C. This presentation will be graded, accounting for 10 % of a graduate student grade. The presentation will be a discussion of the methods used to evaluate specific contaminants in air or physical hazards. The topic will be assigned by the 4th week of class.

Textbook: There is no required text. Reading material, taken primarily from Di Nardi, S. (Ed.): The Occupational Environment - Its Evaluation, Control and Management, 2nd ed., AIHA Press, 2003, will be provided by the instructor.

Class Schedule and Outline: This schedule may be adjusted to accommodate the flow of the course. Any changes will be announced in class or by email.

Date	Lecture Topic	Laboratory Topic
01/30	Introduction, Report Writing Chapter 47	No Lab
02/06	Exposure Assessment, Calibration Chapters 6 and 13	Pump Calibration
02/13	Particle Size and Particle Behavior Chapter 12	Standards Generation Chapter 14
02/20	Statistics	No Lab
02/27	Particulate Sampling Chapter 12	Particle Sampling
03/06	Exam 1	No Lab
03/13	Gases and Vapors Chapters 10 and 11	Asbestos Counting
03/20	Noise Chapter 21	Noise Monitoring
03/27	Nonionizing Radiation Chapter 22	Nonionizing Radiation
04/03	Ionizing Radiation Chapter 23	No Lab
04/10	Spring Break	Spring Break
04/17	Exam 2	No Lab
04/24	Industrial Processes: Metal Fabrication	Direct Reading Instruments
05/01	Industrial Processes: Metal Cleaning	Thermal Environment
05/08	Biological Monitoring and Respiratory Protection Chapters 16 and 36	Respirator Fit Testing
05/15	Guest Lecture	No Lab
05/22	Final Exam: 5:30 – 7:30 PM	No final lab exam

EOH 466C
Fall 2005

Controlling the Occupational Environment
Monday, 4:00 - 6:50 PM, Room HA 002
Instructor: Nola Kennedy

Course Objective: The objective of this class is to provide basic knowledge of the design and evaluation of systems used to control occupational exposures to airborne contaminants and noise. Upon completion of the course, the student should have sufficient understanding of such control technologies to provide a basis for making on-the-job recommendations and to evaluate existing systems, as well as, proposed designs.

Schedule:

Week	Date	Topic	Reading
1	08/29	Introduction; Air Physics, Air Flow Measurement	IVM Ch. 1, 2
2	09/05	Labor Day Holiday	
3	09/12	Dilution and Local Exhaust Ventilation	IVM Ch. 2, 3
4	09/19	Hood Design, Ducts	IVM Ch. 5
5	09/26	System Design	IVM Ch. 5
6	10/03	Fan Selection, Air Cleaning Equipment	IVM Ch. 4
7	10/10	Midterm Examination	
8	10/17	Ventilation Laboratory Exercise	
9	10/24	Building Ventilation	IVM Ch. 7,8
10	10/31	Noise and Physics of Sound	NM Ch. 2
11	11/07	Principles of Noise Control	NM Ch. 9
12	11/14	Principles of Noise Control	
13	11/21	Principles of Noise Control	
14	11/28	Noise Control Laboratory Exercise	
15	12/05	Review	
	12/12	Final Examination: 5:30 - 7:30 PM	

EOH 466C
Fall 2005

Grading: Course grades are based on 2 exams (1 midterm, 1 final) and assigned homework. Equations, formulas and constants will be provided. Make up exams are not permitted.

Homework:	30 %
Midterm:	35 %
Final:	35 %

Graduate Students: Graduate level students are required to complete extra work, consisting primarily of a ventilation system design project. Failure to complete the project will result in a maximum grade of C, regardless of exam scores.

Textbooks (required):

ACGIH: *Industrial Ventilation, A Manual of Recommended Practice, 25th edition*, ACGIH, Cincinnati, OH, 2003.

Berger, E.H., Royster, L.H., Royster, J.D., Driscoll, D.P., and Layne, M. (Eds.): *The Noise Manual, 5th edition*, AIHA Press, Fairfax, VA, 2000.

Other useful resources:

McDermott, H.J.: *Handbook of Ventilation for Contaminant Control, 3rd edition*, ACGIH, Cincinnati, OH, 2001.

Burgess, W.A., Ellenbecker, M.J., and Treitman, R.D.: *Ventilation for Control of the Work Environment*, Wiley Interscience, New York, 1989.

Pelton, H.K.: *Noise Control Management*, John Wiley & Sons, 1992.

NIOSH Technical Report: *Compendium of Materials for Noise Control*, NIOSH, Cincinnati, OH, 1980 (NIOSH publication No. 80-116).

http://www.cdc.gov/niosh/79-117pd.html: NIOSH Industrial Noise Control Manual, NIOSH, Cincinnati, OH, 1978 (NIOSH publication No. 79-117).

DiNardi, S.R. (Ed.): *The Occupational Environment – It's Evaluation and Control and Management, 2nd edition*, AIHA Press, Fairfax, VA, 2003.

California State University, Northridge
Environmental & Occupational Health Department

EOH 468: Air Pollution and Health
Dr. Dennis Kelly

Course Outline

Spring, 2003

Course Description

The study of air pollution in relation to air quality criteria, pollutant production, atmospheric evolution, measurement and control techniques.

Course Objectives

As a result of this course, the student will be able to:

- Outline the process that leads to air pollution abatement and discuss the significant inputs into this process.
- Identify the major pollutants produced in power production, steel making, smelting, petroleum refining, paper production and the use of fossil fuels in transportation.
- Discuss the routes by which air pollutants enter the human body.
- Produce and discuss the equations that explain the important aspects in the evolution of both sulfurous and photochemical types of smog.
- Identify the studies that formed the basis of the air quality standards and list the significant findings of each study.
- List the devices used in the control of emissions from stationary and mobile sources, and discuss the theory of operation for each control device, giving examples of how it is most generally used.

Content Outline

I. Introduction
   A. Air quality criteria
   B. Air quality standards
   C. Emission standards
   D. Enforcement

II. Classification of Pollutants Based on Health Effects
   A. Respiratory
   B. Systemic
   C. Host specific

III. Toxic Action Pollutants
   A. Enzyme effects
   B. Chemical combinations
   C. Secondary actions

IV. Factors Affecting Toxicity

V. The Body's Defenses: Respiratory Tract
- A. Nasopharynx
- B. Tracheobronchia area
- C. Alveolar area

VI. The Major Air Pollutants
- A. CO
- B. SO_2
- C. NO_2
- D. HC
- E. Particles
- F. O_3
- G. Lead

VII. Hazardous Air Pollutants: Be, Hg, etc.

VIII. Sulfurous Smog
- A. Fossil fuels
  1. Natural gas
  2. Petroleum
  3. Coal
- B. Evolution of sulfurous smog
- C. Sulfur Cycle

IX. Stationary Combustion Sources
- A. Power Plants
- B. Smelters
- C. Petroleum refineries
- D. Steel Production
- E. Paper Products

X. Photochemical Smog
- A. Major ingredients and their sources
- B. Atmospheric photochemistry
- C. Chemical reactivity

XI. Mobile Sources of Pollution
- A. Automotive emissions and emission standards
- B. Control Systems

XII. Aerosols
- A. Particulate sources
- B. Composition and distributions
- C. Scavenging processes
- D. Visibility reduction

XIII. Introduction to Stationary Source Controls
- A. General considerations
- B. Mechanisms of capture
- C. Gravity settling chambers
- D. Cycling Collectors
- E. Impingement separators
- F. Filtration
  1. Deep bed and mat
  2. Cloth
  3. HEPA
- G. Wet Collectors
  1. Chamber scrubbers
  2. Cyclonic scrubbers
  3. Wet impingement separators
  4. Venturi scrubbers
- H. Absorption devices
  1. Packed towers
  2. Plate towers
- I. Absorption devices
- J. Combustion equipment
  1. Flares
  2. Furnaces
  3. Catalytic combustion

XIV. Sampling Methods

Method of Instruction: Lecture

Method of Evaluation

There are two written exams; each exam is worth 1/2 of the final grade. All graduate students shall prepare a term paper on an advanced topic in the field of air quality management. The topic of this paper shall have the instructor's approval. The term paper will be worth 25 percent of the graduate student's final grade, and the exams 75 percent.

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California State University, Northridge
Department of Environmental and Occupational Health

ENVIRONMENTAL RISK ANALYSIS (EOH 469)

Instructor: Tom Hatfield, Dr.P.H., R.E.H.S.

Hours: Lectures: T 7-10
Office: MT 6-7. TTh 1:45-2:45
Phone: Office: 818-677-4708
FAX: 818-677-2045
Internet: Thomas.Hatfield@csun.edu
http://www.csun.edu/~vchsc006/hatfield.html

COURSE DESCRIPTION:

This course examines the assessment, evaluation, communication, and management of environmental risks. "Environmental" concerns will be limited to agents that are: 1) environmental or occupational in origin, and 2) hazardous to human health. "Risk" refers to the subjective as well as objective measurements of probabilistic events, and recognizes uncertainties with such information. Prerequisites: EOH 356A and 356B or equivalent.

COURSE OBJECTIVES:

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

1. Differentiate risk assessment, risk perceptions, risk communication and risk management.
2. Define five major types of error in risk analysis.
3. Describe four fundamental steps of risk assessment.
4. Distinguish between rating models, analytical models, and numerical models of risk assessment, and select an appropriate model for a given situation.
5. Explain and measure multi-media transfer.
6. Define single-hit, multi-hit, multi-stage, and other models of dose-response used in risk assessment.
7. Differentiate event-tree and fault-tree techniques.
8. Discuss biases in risk evaluation.
9. Distinguish four major models for decision making under uncertainty.
10. Define and clarify expert roles in risk analysis.
11. Discuss ethical models of risk distribution.

GRADING: 3 exams (100 points for each exam)
9 online quizzes (25 points for each quiz)

REQUIRED TEXT: Hatfield, Risk Analysis for Environmental and Occupational Health Professionals, National Environmental Health Association, 2002.

ENVIRONMENTAL RISK ANALYSIS (EOH 469)

Scheduled Lectures

Week #

1. overview
2. hazard identification
3. environmental fate models -- air
4. environmental fate models -- others
5. exposure assessment
6. dose response models
7. risk characterization -- concepts
8. EXAM (no calculations)
9. risk characterization -- integration, calculations
10. EXAM (calculations)
11. risk communication -- concepts
12. risk communication -- strategies
13. risk management -- control and analytic methods
14. risk management -- legal and ethical issues
15. Review
16. EXAM

Preliminary Outline

I. Overview

A. Introduction
1. Course requirements
2. The nature of risk
3. Types of statistical error

B. Systems View of Environmental Risk
1. Risk of exposure
2. Risk of health effects
3. Risk management

C. The Nature of Risk Analysis
1. Steps in risk assessment
2. Scientific and policy judgments
3. Limitations of risk decisions

II. Hazard Identification

A. Introduction
B. The role of epidemiology
1. Definitions
2. Population settings

C. The role of toxicology
1. Comparison to epidemiology
2. Bioassay of chemical carcinogens

III. Physical transport models

A. Air -- from Gauss to UNAMAP
B. Rivers
C. Watersheds -- the emergence of HSPF
D. Groundwater
E. Food Chain

IV. Multi-media transfer

A. air-water partitioning
B. water-soil partitioning
C. air-soil partitioning
D. transformation

V. Exposure Assessment

A. External exposure -- micro-environments
B. Internal exposure -- the target organ
C. Current models of exposure

VI. Mathematical models of dose response

A. tolerance distribution models
B. single hit model
C. Weibull model
D. multistage model
E. multihit model
F. others

VII. Risk Communication: Concepts

A. Introduction
B. The nature of perceived risk
   1. Discrepancies
   2. Myths about perceived risks
   3. Biases
   4. Context

C. Implications
   1. The arrogance of "expert" opinion
   2. Persuasion verses propaganda
   3. Erosion of trust and the role of accountability

D. The role of "expert" analysis
   1. Contextual analysis
   2. Equity analysis
   3. Public preference analysis

VIII. Risk Communication: Strategies

A. Classification of problems
   1. message problems
   2. source problems
   3. channel problems
   4. receiver problems

B. Classification of objectives
   1. information and education
   2. behavioral change
   3. disaster warnings, emergency information
   4. conflict resolution

C. Seven cardinal rules of risk communication (EPA)
   (discussion and critique)
   1. the public should be a partner
   2. have clear objectives
   3. listen
   4. be honest
   5. enlist credible sources
   6. cooperate with the media
   7. speak clearly and with compassion

D. Towards an integrated view
   1. Sources of information

2. Channels of information
3. Social influences on communication
4. Individual heuristics
5. Responses
6. Ripple effects and impacts

E. Applications
F. Multi-cultural perspectives

IX. Risk Management: Control and Analytic Methods

A. Event Tree Techniques
B. Fault Tree Techniques
C. Consequence Calculations
D. Uncertainties
E. Application: Bhopal
1. The causal structure of hazard
2. Post-mortem event-tree analysis
3. Post-mortem fault-tree analysis
F. Control Measurement

X. Risk Management: Legal and Ethical Issues

A. Introduction
B. Ethical systems in risk analysis
1. Utilitarian
2. Egalitarian
3. Elitist
4. Libertarian

C. Evaluation by ethical systems
1. Willingness to pay
2. Equitable allocations
3. Human capital
4. Environmentalism

Selected Bibliography

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OVERVIEW:

For first timers to this page, begin with item 1: "Getting started."

In case of problems...

With time, I hope you will find this web site to be very helpful.
However, I also know that technology can sometimes turn on us!
With that in mind, please consider the following common sense recommendations:

1. When all else fails, contact me! You can contact me:

- by phone (818-677-4708),
- by fax (818-677-2045),
- by **email**,
- during office hours, or
- in class.

2. Don't forget the other traditional sources:

- Consult the syllabus.
- Consult the textbook. if appropriate.
- Talk with your classmates.

3. Click **here** for county libraries with internet access.

California State University, Northridge
Department of Health Sciences
Health Science 488, Epidemiology
Instructor: Dr. Roberta E. Madison, tel.818-677-4645 or 6533
E-mail: roberta.madison@csun.edu
Spring 2002

Required Text

Epidemiology, Leon Gordis. W.B. Saunders Co. 1999 (LG)

Supplemental Text

Case-Control Studies, James Schlesselman, Oxford Press, 1982 (handout)

Epidemiology and Health Policy, M.A. Ibrahim

An Introduction to Epidemiology, Thomas C. Timmreck, 2nd ed., Jones and Bartlett 1998

There will be 2 mid-terms worth 100 points each and a final worth 115 points. You are responsible for the assigned reading. There will be a 30 point paper. The outline and directions for the paper are presented below. It will take access to the Internet to do this paper. There are many student computer labs on campus. The Department has a computer lab located in the new PE building. Time on task and collaborative learning have been found to be the best predictors of student success. I would hope that you can spend time studying in groups. I will set-up convenient groups at the beginning of the semester and ask that you study together to improve your grades. Cheating on exams will be handled according to University policy. Grades will be assigned for the semester in the following manner. No make-up exams are permitted.

A - A- 100 - 90 %
B+ - B - 89 - 80 %
C + - C - 79 - 65 %
D + - D- 64 - 55 %
F below 55 %

The following is the course outline which is flexible.

Week	Topic	Reading
1/29	Introduction to Epidemiology and history	Chp.1
2/5	Descriptive Epidemiology	
2/12-2/19	Measuring Occurrence of Disease and Hypothesis testing	3

can effect the health status of the population.

Course Objectives

At the completion of the course the student should be able to:

- Explain how epidemiology contributes to knowledge of disease etiology and natural history.
- Characterize disease by person, place and time and understand the interaction of host, agent and environment.
- Understand and calculate measures of morbidity and mortality.
- Assess validity and reliability in measurements and screening tests.
- Assess causality and association in epidemiologic studies.
- Describe epidemiologic study designs including: cross-sectional, case-control, cohort and randomized clinical trials.
- Calculate and explain risk estimates
- Formulate problem statements and null hypotheses
- Describe transmission of infectious disease and techniques in investigating outbreaks.
- Describe how future health needs are assessed through demographic techniques.
- Describe how epidemiologic concepts are applied to other health related fields.

RISK

Probability that an event will occur.

PROPORTION

Type of ratio where the numerator is included in the denominator. It ranges from 0.0 to 1.00.

RANDOM

Governed by chance.

California State University, Northridge
Department of Environmental and Occupational Health
EOH 494B/ 693A
Academic Internship/Supervised Field Training

I. Course Catalog Description

A supervised internship in the environmental/occupational health program of a public or private organization.

II. Course Objective

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

A. Diagram the administrative structure of the organization and locate the environmental/occupational health program within it.

B. Outline the basic features of planning utilized, i.e. assessment of need, establishment of priorities, setting of objectives, methods of program evaluation etc.

C. List the major component (subdivisions) of the organization's environmental/occupational program.

D. Discuss the methods utilized by field professionals within the program to assess existing or potential health and safely hazards.

E. Indicate where, within the environmental/industrial systems monitored as part of the program, controls or safeguards are or may be utilized to prevent or reduce the probability of disability, discomfort of illness.

F. List of the topic areas where additional environmental/occupational content was acquired and explain the importance of this material within the context of the program under consideration.

G. Identify the ingredients which seem most essential to the success of the program, e.g. the knowledge, skills and attributes of personnel.

H. Discuss the record system utilized and the role this system plays in overall program evaluation.

III. Course Outline

A. Orientation
   1. organizational structure
   2. administration
   3. goals and objectives
      a. needs

b. priorities
4. budgetary considerations

B. Components
1. areas covered
2. priorities and emphasis
3. personnel assignments

C. Method
1. consultation and/or inspection
2. follow-up procedure
3. equipment utilized
4. laboratory backup

D. Records and Evaluation
1. records system
2. program evaluation

E. Future Plans

IV. Methods of Student Evaluation

A. Supervisor's Comments: 25%
1. interest demonstrated
2. understanding achieved
3. attitude and professional orientation

B. Student's Paper: 75%
1. Coverage of elements in course outline
2. relation of the field practice to theory
3. new content covered
4. evaluation of experience

V. Responsibilities

A. Departmental Adviser
1. arrangements for experience
2. evaluation of student achievement
3. assignment of grade

B. Supervising Professional
1. experiential assignment
2. orientation
a. profession
b. organization
3. student evaluation

California State University, Northridge
Department of Environmental and Occupational Health

ADMINISTRATION OF ENVIRONMENTAL AND OCCUPATIONAL HEALTH PROGRAMS (EOH 553)

Instructor: Tom Hatfield, R.E.H.S., Dr.P.H.
Office hours: M 12:15-1:15, 3-4; T 6-7, W 12:15-1:15

Phone: Office: 818-677-4708
FAX: 818-677-2045
Internet: thomas.Hatfield@csun.edu
http://www.csun.edu/~vchsc006/hatfield.html

Lectures: T 7-10

COURSE DESCRIPTION

An analysis of environmental health administration with an emphasis on program planning.

COURSE OBJECTIVES:

The purpose of this course is to introduce principles of management, economics, law, and negotiation for the administration of environmental and occupational health programs. The course will consist of lectures, discussion, and application of management concepts. On completion of this course, the student should be able to:

1) identify fundamental management functions and apply appropriate techniques;

2) identify and interpret major economics principles;

3) identify and interpret legal issues that affect environmental and occupational health programs; and

4) diagnose environmental conflicts and recommend techniques for managing conflict.

GRADING: 2 exams (100 points for each exam)

12 online quizzes (180 points)

10 short writing assignments (10 points for each essay)

TEXT: Moser R., Effective Management of Occupational and Environmental Health and Safety Programs: A Practical Guide, 2nd edition, OEM Press, 1999.

ADMINISTRATION OF ENVIRONMENTAL HEALTH PROGRAMS
(EOH 553)

ASSIGNED READINGS

Week #	Readings
1. Overview	pp. 4-54
2. Legal Concepts	(notes)
3. Negotiation	(notes)
4. Planning	pp. 117-162
5. Organizing	pp. 243-286
6. Staffing	pp. 355-386
and	
Directing	pp. 459-509
7. Control	pp. 577-595
8. Mid-term Exam	
9. Strategy and Policy	pp. 167-192
10. Decision making	pp. 198-220
11. Economic Concepts	(notes)
12. Cost Benefit Analysis	(notes)
13. Budgeting	pp. 599-625
14. Implementation	(notes)
15. Presentation of projects/case studies	
16. Exam	

Moser R., Effective Management of Occupational and Environmental Health and Safety Programs: A Practical Guide, 2nd edition, OEM Press, 1999.

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Vinter RD and RK Kish, Budgeting for Not-for-Profit Organizations, Free Press, 1984.

Overview

I. Introduction

II. Fundamental issues

A. Are we asking the right questions?
C. Why management?

III. Defining Management

A. What is management?
B. Is management an art or a science?
C. How can we study management?

IV. Approaching environmental management

A. What is an environmental manager?

B. How can we decide?

1. Descriptive
2. Normative
3. Prescriptive

C. How can we change the system?

1. Incrementalism
2. Systems Analysis

V. Management Functions

A. Planning
B. Organizing
C. Staffing
D. Directing
E. Controlling

Legal Concepts

I. Introduction

A. Definitions

B. Types of laws: constitutional
statutory
administrative
common

C. Source of laws: federal
state
local
voluntary

D. Fundamental Powers: nuisance laws

eminent domain
police power
licensing
agency

E. Other concepts: due process
equal protection
exclusionary rule
demurrer
reasonable doubt

II. Government structure

A. Executive
B. Legislative
C. Judicial

III. Basic issues

IV. Strategies for legal research

A. Stare decisus
B. The literature

1. primary sources
2. finding tools
3. secondary materials

C. Major Sources of Information

Negotiation and Mediation

I. Introduction

A. why negotiation?
B. caveats

II. Concepts

A. zero-sum vs. non-zero-sum
B. interests vs. positions

1. Common interests
2. Multiple interests
3. Basic interests

C. negotiation vs. compromise
D. BATNA (Best Alternative to a Negotiated Agreement)

III. Alternative approaches

IV. The negotiation process

A. prenegotiation
B. negotiation

C. post-negotiation

V. Mediation

Planning

I. Why Planning?

II. Hierarchy of Plans

III. Planning Principles

A. Commitment Principle
B. Flexibility Principle
C. Principle of Navigational Change
D. Principle of the Limiting Factor

IV. Why plans fail
V. Steps in the planning process

VI. Objectives

A. The nature of objectives
B. MBO
C. Related terms

effectiveness
efficiency
productivity

Organizing

I. Introduction

A. Why Organization?
B. Definitions
C. The process
D. Organization principles

II. Classify activities (task analysis)

A. Data
B. People
C. Things

III. Group activities (departmentation)

A. Types of departmentation
B. Choosing departmentation

IV. Organizational levels and span of management

A. Why organizational levels?

1. span of management
2. factors affecting span of management

manager's ability
subordinate's ability
other factors

B. Problems with organizational levels

V. Coordination, relationships, and POWER

A. Authority and power
B. Weber's typology of authority
C. Recent ideas

VI. Common mistakes in organizing

Staffing and Directing

I. Staffing

A. Introduction
B. Recruitment, selection and placement
C. Performance appraisal
D. Training

II. Directing

A. motivation

1. purpose
2. theories

B. leadership

1. major aspects of leadership
2. approaches:

trait approaches
Likert's four systems
managerial grid
Fiedler's contingency approach
path goal approach

C. communication

Controlling

I. Introduction

A. Why Control?
B. Concepts

II. Techniques

A. Network analysis
   Gantt chart
   PERT

B. operations research
   math modeling
   linear programming

C. Budgets (from Koontz textbook)
   revenue and expense budgets
   time, space, material and product budgets
   capital expenditure budgets
   cash budgets
   alternative budgets
   variable budgets

D. Fundamental budget approaches
   line item budget
   program budget
   performance budget
   zero based budget
   PPBS (planning, programming, budgeting system)

E. The budget cycle

   preparation phase

      needs assessment
      program planning
      cost estimates
      budget development
      trim the budget
      documentation
      funds procurement

   execution phase -- fiscal management

   assessment phase

      performance assessment
      recycle

Strategies and Policies

I. Strategies

   A. Types of strategies
   B. TOWS Matrix

II. Overview of Policy Analysis

   A. definitions

B. why policies fail
C. why policy analysis?
D. the role of policy analysis

III. Modeling

IV. Problem formulation

A. problem recognition
B. problem definition
C. structuring goals and objectives
D. other aspects

V. Problem solving

A. gathering resources
B. finding alternatives
C. forecasting consequences
D. modeling

VI. Evaluation and Implementation

A. evaluating alternatives
B. action
C. feedback

Decision Making

I. Dimensions of Conflict

A. single vs. multiple criteria
B. certainty vs. uncertainty
C. single versus multiple decision makers
D. application case

II. Decision making of a single decision maker (tradeoffs)

A. Fundamental concepts revisited: objectives
attributes
alternatives
B. Alternative approaches

1. single criterion
2. multiple criteria

III. Preferences

A. Symbols
B. Preliminary conditions

IV. Informal approaches

III. Formal approaches

A. Cost Benefit Analysis
B. Direct rating
C. Conjoint Analysis

D. Weighting of criteria

IV. Matching approaches with problems

A. Magnitude of the problem
B. Complexity of the problem

Economic Concepts

I. Introduction

II. The concept of cost

A. definition
B. identification

1. opportunity costs
2. sunk costs

C. Marginal analysis
D. Market failures and Environmental Health

1. pure public goods
2. external diseconomies (externalities)

III. Approaches to decision making

A. Cost effectiveness analysis
B. Cost benefit analysis

1. the procedure
2. the fundamental rule
3. criticisms of cost benefit analysis

IV. Discounting

A. Introduction
B. Fundamental equations
C. Internal rates of return
D. Inappropriate decision rules
E. Selecting the discount rate

IV. Economic growth

A. Relationship to environmental health policy
B. Alternative views

Market Incentives in Environmental Management

I. Introduction

A. Why market incentives?
B. Direct regulation using standards

II. Economic incentives

A. cash subsidies
B. effluent charges
C. marketable pollutions permits

III. Effluent standards
IV. Effluent Charges
V. Marketable Pollution Permits

Implementation

I. Introduction
II. Acceptance
III. Implementation

A. Definition
B. Problems
tractability of the problem
ability of the law
attitude of the participants
C. Suggestions for improving implementation
network
experiment
mobilize
legal action

IV. Other considerations

A. Four roles of policy analysis
rational
technocratic
partisan
consensual

B. Policy analysis as apology and witchcraft
C. Ethical considerations

SYLLABUS FOR EOH 554 Fall 2005

Instructor (M 7 – 10 PM): Dr. Peter Bellin, e-mail: peter.bellin@csun.edu
Office: JD 1515. Office Hours: tba

Instructor (T 4 – 7 PM): Dr. Tony Machado, e-mail: amachado@csun.edu
Office: JD 1519. Office Hours: tba

GRADUATE SEMINAR: ENVIRONMENTAL AND OCCUPATIONAL HEALTH PROBLEMS

The purpose of this course is to provide graduate students with the opportunities to conduct in-depth literature research into an environmental or occupational health problem, to critically review the literature on a specific topic, to present information in a formal seminar style, and to produce a formal literature review paper. These elements are broken down in the following paragraphs, in terms of both expectations for satisfactory completion of the course and grading for each element. Students will select their own topic in consultation with the professor.

Each year, the faculty leading the seminar classes will select a theme for study. This year, the theme is toxicity of metals in drinking water. We will select a metal for each person to review. The focus of the research papers and presentations should be on the health effects of metals in drinking water and the health guidelines developed by the EPA. In effect, you will be conducting a (partial) critical review of the information related to the toxicity of a metal in drinking water.

During the first part of the semester, we will have lecture and discussion on literature searching, and literature review. The focus of our work will be on scientific papers in peer-reviewed journals or publications. We do not expect that you will rely on text books or web pages as the primary source of information for your presentations and publications.

Class Participation (10% of final grade): One of the primary reasons for graduate-level seminar courses is that they provide an excellent opportunity for interactive learning. This portion of the grade will be based on **timely** class attendance, preparation of materials for each class (including reading pre-papers), questions following student presentations, and peer evaluations of student pre-papers and presentations.

Pre-paper (20% of final grade): One week before his/her oral presentation, each student will provide each member of the class with a copy of his/her pre-paper. The pre-papers (two students per week) will be the class reading assignment for the following week and should include the following elements: title page, topic outline (1-2 pages), introduction to the problem (3-5 pages), references (minimum of 8), and supplementary materials (charts, graphs, diagrams, etc.).

Oral Presentation (35% of final grade): The oral presentation should thoroughly address the chosen problem, as well as currently implemented and suggested solutions. The presentation should be 40-45 minutes in length and should include visual aids in PowerPoint. Grading of oral presentations will be based on the following:

- Organization
- Clarity
- Command of Topic Material
- Depth of Content
- Use of Visual Aids
- Usage of Allotted Time
- Fielding of Questions.

Term Paper (35% of final grade): The term paper is due on or before **December 5/6 2005**. The written discussion should be approximately 20 pages in length (in addition to supplementary materials, tables, etc.) and must be typed, double-spaced. At least 15 references should be cited. The reference for the style of the paper is *Environmental Health Perspectives (EHP)*. You can find the style guidelines here: http://ehp.niehs.nih.gov/docs/admin/edpolicy.html. You will have to review this page to find the guidelines for submitting papers to this journal.

Criteria for evaluation the term paper are as follows:

- Structure (based on material covered in EHP)
- Composition (including grammar and syntax)
- Organization of Materials
- Clarity, Readability
- Completeness and Depth of Topic Coverage
- Format of Citations (follow submission guidelines for EHP)
- Quality of References (very important)

ACADEMIC INTEGRITY

All forms of academic dishonesty (cheating, plagiarism, etc.) are expressly forbidden by University rules and will not be tolerated in this course. Any student who violates these rules will receive the grade of "F" and be subject to disciplinary action by the University. A copy of the relevant University policy can be found here:
http://www.csun.edu/~vchsc00b/CSUN%20Policy%20on%20Academic%20Honesty.htm

EOH 555
Dr. Sullivan
2006

California State University, Northridge
Department of Environmental and Occupational Health

Environmental and Occupational Health Programs and Stanards
EOH 555

General Information:

Instructor: Michael J. Sullivan, Ph.D., CIH, REA
Office Hours: Wednesdays, 6:30 pm to 7:30 pm in room (TBD)
Internet: tenparry@hotmail.com
Lectures: Wednesdays, 7:30 pm to 10:00 pm in room (TBD)

Catalog Description:

A critical analysis of literature related to programs and standards in environmental and occupational health.

Course Objectives:

Upon completion of this course the student should be better able to demonstrate critical thinking and research methods to analyze programs and standards in environmental and occupational health. Specifically, the student should be able to:

- Access and critique the environmental health literature
- Select a topic, prepare an outline and a comprehensive written analysis
- Deliver a clear oral presentation of their analysis
- Ask effective questions about presentations given by colleagues.

Methods of instruction:

Class lectures and discussions and reading of selected literature articles.

Note: There are several classes designated as "Outside Class Assignment". These are schedule prior to assignment due dates so that you may work on you paper.

Required Text:

none

Assignments:

1. Read the Cal-EPA Fluoride PHG at http://www/oehha.ca.gov/water/phg/index/html
2. Prepare a research paper on an approved topic. Topic of paper to be selected by student and approved by Dr. Sullivan, and you must use submittal/approval form.

There are four paper submittals: topic approval (lecture #3 2/15/06, paper outline (lecture #5 on 3/1/06, written Introduction section of paper (lecture #8 on 3/22/06) and final paper lecture #13 on 5/3/06). The paper must follow the format and outline provided. Critical analysis process discussed in class is to be followed. No later papers accepted.

3. Class presentation. Student to prepare and deliver a 30 to 45 minute presentation on their selected research topic and paper. Presentation should use multi-media resources. Presentations to be given the last three weeks of the semester (5/3, 5/10, and 5/17) and dates/times to be assigned by lottery.

Exams:

No exams.

Grading:

ITEM	% FINAL GRADE
Research Paper including topic approval, outline, written introduction and complete paper	65%
Presentation	25%
Class participation	10%
Total:	100%

NOTE: No late assignments accepted.

EOH 555
Dr. Sullivan
2006

California State University, Northridge
Department of Environmental and Occupational Health

Environmental and Occupational Health Programs and Standards
EOH 555

SYLLABUS 2006

LECTURE	DATE	TOPIC	READING
#1	2/1/06	T1-Course Introduction T2-Discussion of Topic Selection	
#2	2/8/06	T3-Discussion of Fluoride PHG	Fluoride PHG
#3	2/15/06	T3-continued T4-Development of a Hypothesis T5-Development of an Outline ***topics due	
#4	2/22/06	T3-continued T6-Paper format	
#5	3/1/06	T3-continued ***outline due	
#6	3/8/06	T3-continued	
#7 Outside Class Assignment	3/15/06	Independent Research on your topic	
#8	3/22/06	T3-continued ***Introductions due	
#9 Outside Class Assignment	3/29/06	Independent Research on your topic	
#10 Outside Class Assignment	4/5/06	Independent Research on your topic	
No class	4/12/06	Spring Break	
#11 Outside Class Assignment	4/19/06	Independent Research	
#12	4/26/06	T4-Discussion/review of research papers	
#13	5/3/06	Presentations ***Papers due	
#14	5/10/06	Presentations	
#15	5/17/06	Presentations	
final		No final exam	

[Outside Class Assignment means that you have work to do for the class but there is no lecture.]

California State University, Northridge
Department of Health Science

SEMINAR: Environmental and Occupational Health Programs and Standards

(Health Sciences 555)

Topic Selection and Hypothesis Statement

The California Environmental Protection Agency (Cal-EPA) Office of Environmental Health Hazard Assessment (OEHHA) sets Public Health Goals (PHGs) for drinking water. These PHGs are "set based upon the best available toxicological data in the scientific literature". PHG technical support documents discuss the available data and make a recommendation regarding the "concentration of contaminants at which adverse health effects would not be expected to occur, even over a lifetime of exposure". PHGs are intended for use by California Department of Health Services (DHS) in setting state Maximum contaminant levels (MCLs). MCLs include both scientific/health and economic considerations.

PHG technical support documents may be found at:

http://www.oehha.ca.gov/water/phg/index.html

Topic: Select one of the PHGs and research/evaluate its scientific basis.

Hypothesis: Develop a hypothesis before performing your research. This hypothesis should address either the scientific process (how the standard was set) or the scientific product (what standard was set). Your hypothesis will help guide your research and formulate your questions/discussion. The hypothesis is a statement that can be shown true or false by your research. Some examples (which you are free to use) are listed below:

- Process
  - A weight-of-evidence approach was followed in setting the PHG.
  - Non-scientific issues were utilized in setting the PHG.
- Product
  - The PHG is too high in comparison to the scientific literature.
  - The key study upon which the PHG is based is flawed.

Assignment:

Topic selection and hypothesis due 2/11/02. Use following page.

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Dr. Sullivan
2006

California State University, Northridge
Department of Environmental and Occupational Health

Environmental and Occupational Health Programs and Standards
EOH 555

PAPER FORMAT

Use the following format for your research paper.

Executive Summary: A one page summary of the research performed and the conclusions drawn in regards to your hypothesis.

Table of Contents: Present all section levels by number and title and page found in the paper. It will look similar to the outline. Each page will therefore be numbered.

List of Figures and Tables. Number each figure or table sequentially for that section. For example, if there are two tables and one figure in Section 2.0 they will be numbered Fig 2-1 and Tables 2-1 and 2-2. The tables and figures should appear in the body of the report on the next page following the page where they are first referenced in the text.

Glossary. Define key terms and acronyms that ate used in the text. For example:

PHG Public Health Goal. Drinking water standard set by OEHHA based on scientific data that protects from adverse health effects over a lifetime of exposure.

Text. Presented by sections and subsections.

References. This is the last section in your report. References are to be listed by number as they appear in the text and identified in the text using brackets, example [1]

Example listings:

Journal listing-
[1] Danielson, C., Lyon, J. Egger, M and G. Goodenough (1992). *Hip Fractures and Fluoridation inUtah's Elderly Population*. JAMA 268:764-782.

Internet Listing-
[2] Smith, A. (1998). Fluoride Toxicity in Horses.
http://www.dir.ca.gov/dosh/dosh1/html

Book Listing-
[3] National Research Council (1993). *Health Effects of Ingested Fluoride*. National Academy Press, Washington, D.C.

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or

[4] Smith, A (1998). *Fluoride Toxicity in Horses.* In *Health Effects of Ingested Fluoride*. National Academy Press, Washington, D.C., pp 764-785.

SECTION NUMBERING

1.0 First Primary Section
- 1.1 First Secondary Section
- 1.2 Second Secondary Section
  - 1.2.1 First Tertiary Section
  - 1.2.2 Second Tertiary Section
    - 1.2.2.1 First Quaternary Section
    - 1.2.2.2 Second Quaternary Section
  - 1.2.3 Third Tertiary Section
- 1.3 Third Secondary Section

2.0 Second Primary Section

Note: each section level must have 2 appearances within a primary section, i.e. there is no 1.2.1 without a 1.2.2.

California State University, Northridge
Department of Health Science

SEMINAR: Environmental and Occupational Health Programs and Standards

(Health Sciences 555)

Topic Selection and Hypothesis Statement

NAME:_____

TOPIC:_____

HYPOTHESIS:_____

APPROVAL SIGNATURE:_____

EOH 560
Dr. Sullivan
2006

California State University, Northridge
Department of Environmental and Occupational Health

Environmental and Occupational Health Epidemiology
EOH 560

General Information:

Instructor: Michael J. Sullivan, Ph.D., CIH, REA
Office Hours: Wednesdays, 6:30 pm to 7:30 pm in room (TBD)
Internet: tenparry@hotmail.com
Lectures: Wednesdays, 4:00 pm to 6:30 pm in room (TBD)

Catalog Description:

A critical analysis of epidemiology literature related to issues in environmental and occupational health.

Course Objectives:

Upon completion of this course the student should be better able to understand advanced concepts in epidemiology and their application to environmental and occupational issues. More specifically, the student should be able to:

- Understand advanced epidemiology concepts
- Access the epidemiology literature
- Critically evaluate epidemiological studies and their use in standard-setting
- Understand health risk assessment components
- Develop an exposure assessment.

Methods of instruction:

Class lectures and discussions, reading of book chapters and selected literature articles.

Required Text:

Introduction to Environmental Epidemiology
E.O. Talbott and G.F.Craun, eds.
Lewis Publishers

Assignments:

1. Readings:
    a. Assigned book chapters
    b. Selected articles handed out in class on the following topics
        i. EMF (1)

ii. Water (fluoride) (1)
iii. Radiation (2)
iv. Workplace Exposures (2)
v. Air (1)

c. Cal-EPA Fluoride PHG at http://www/oehha.ca.gov/water/phg/index/html

2. Review a peer-reviewed, journal-published epidemiology article on any topic related to environmental or occupational epidemiology. Review of the article to follow the critical evaluation process developed in lecture. Article to be selected and approved by Dr. Sullivan by lecture #5-3/1/06. Provide a copy for approval. Papers are due at 7:15 pm lecture #12-4/26/06. Paper length is 8 to 12 pages, one-sided, 1.5 line spacing, 12 point font (format important). Remember, the epidemiology evaluation process developed in class must be used as the basis for your paper.
3. Construct a risk assessment exposure scenario that interests you. This is to include description, exposure equation and parameter values appropriate for a risk assessment. Exposure scenarios are due lecture #15-5/17/06. Paper format is one page in length including a one paragraph description, equation, parameters, values and sample calculation.

Exams:

Midterm #1: Lecture #6 on 3/8/06 covering lecture topics #1 to #5 (see Syllabus) and related information from lecture, readings and class discussions.

Midterm #2: Lecture #11 on 4/19/06 covering lecture topics #6 to #10 and epi evaluation criteria (see Syllabus) and related information from lecture, readings and class discussions.

Midterm #3: Lecture #15 on 5/17/06 covering lecture topics #11 to #14 (see Syllabus) and related information from lecture, readings and class discussions.

No Final Exam.

Grading:

ITEM	% FINAL GRADE
Midterm #1	20%
Midterm #2	20%
Midterm #3	20%
Epidemiology Review Paper	30%
Exposure Scenario	10%
Total:	100%

Grades assigned based on total class points out of 100 using a straight-curve: >90 A, >80 B, >70 C. Grade (-) and (+) may be asssigned based on class performance distribution.

EOH 560
Dr. Sullivan
2006

California State University, Northridge
Department of Environmental and Occupational Health

Environmental and Occupational Health Epidemiology
EOH 560-Dr. Sullivan

SYLLABUS 2006

LECTURE	DATE	TOPIC	READING
#1	2/1/06	T1-Course Introduction T2-History of Epidemiology	Ch 1
#2	2/8/06	T3-Types of Epidemiology Studies/design features	Ch 4,5
#3	2/15/06	T4-Bias	none
#4	2/22/06	T5-Causation (Study evaluation criteria)	Ch 3
#5	3/1/06	T6-Epidemiology of EMF ***article must be approved	Ch 11 article
#6	3/8/06	Midterm #1 – Principles of Epidemiology (Topics 1 to 5) T7-Epidemiology of Water	Ch 8 article
#7 Outside class Assignment	3/15/06	Epidemiology Paper: Write Introduction and Paper Summary sections	Your article
#8	3/22/06	T8-Epidemiology of Radiation	Ch 10 Articles
#9	3/29/06	T9-Epidemiology of the Workplace	Ch 7 Articles
#10	4/5/06	T10-Epidemiology of Air	Ch 13 Articles
No class	4/12/06	Spring Break	
#11	4/19/06	Midterm #2 – Epidemiology Issues (Topics 6 to 10 + epi evaluation criteria)	
#12	4/26/06	T11-Risk Assessment Methods ***Papers due	Ch 2
#13	5/3/06	T12-Toxicity data in risk assessment	
#14	5/10/06	T13-Exposure Assessment	
#15	5/17/06	T14-Epidemiology vs. Risk Assessment Midterm #3 – Risk Assessment (Topics 11 to 14) ***Exposure Assessment due	
final		No final exam	

EOH 560
Dr. Sullivan
2004

California State University, Northridge
Department of Environmental and Occupational Health

Environmental and Occupational Health Epidemiology
EOH 560

General Information:

Instructor: Michael J. Sullivan, Ph.D., CIH, REA
Office Hours: Tuesdays, 6:00 pm to 7:00 pm in room (TBD)
Internet: Sullivan@csun.edu
Lectures: Tuesdays, 7:00 pm to 10:00 pm in room (TBD)

Catalog Description:

A critical analysis of epidemiology literature related to issues in environmental and occupational health.

Course Objectives:

Upon completion of this course the student should be better able to understand advanced concepts in epidemiology and their application to environmental and occupational issues. More specifically, the student should be able to:

- Understand advanced epidemiology concepts
- Access the epidemiology literature
- Critically evaluate epidemiological studies and their use in standard-setting
- Understand health risk assessment components
- Develop an exposure assessment.

Methods of instruction:

Class lectures and discussions, reading of book chapters and selected literature articles.

Required Text:

Introduction to Environmental Epidemiology
E.O. Talbott and G.F.Craun, eds.
Lewis Publishers

Assignments:

1. Readings:
    a. Assigned book chapters
    b. Selected articles handed out in class
    c. Cal-EPA Fluoride PHG at http://www/oehha.ca.gov/water/phg/index/html

2. Review a peer-reviewed, journal-published epidemiology article on any topic related to environmental or occupational epidemiology. Review of the article to follow the critical evaluation process developed in lecture. Article to be selected and approved by Dr. Sullivan by lecture #5-3/2/04. Provide a copy for approval. Papers are due at 7:15 pm lecture #11-4/27/04. Paper length is 8 to 12 pages, one-sided, 1.5 line spacing, 12 point font (format important). Remember, the epidemiology evaluation process developed in class must be used as the basis for your paper.
3. Construct a risk assessment exposure scenario that interests you. This is to include description, exposure equation and parameter values appropriate for a risk assessment. Exposure scenarios are due lecture #14-5/18/04. Paper format is one page in length including a one paragraph description, equation, parameters, values and sample calculation.

Exams:

Midterm #1: Lecture #6 on 3/9/04 covering lecture topics #1 to #5 (see Syllabus) and related information from lecture, readings and class discussions.

Midterm #2: Lecture #10 on 4/20/04 covering lecture topics #6 to #10 (see Syllabus) and related information from lecture, readings and class discussions.

Midterm #3: Lecture #14 on 5/18/04 covering lecture topics #11 to #14 (see Syllabus) and related information from lecture, readings and class discussions.

No Final Exam.

Grading:

ITEM	% FINAL GRADE
Midterm #1	20%
Midterm #2	20%
Midterm #3	20%
Epidemiology Review Paper	30%
Exposure Scenario	10%
Total:	100%

EOH 560
Dr. Sullivan
2004

California State University, Northridge
Department of Environmental and Occupational Health

Environmental and Occupational Health Epidemiology
EOH 560-Dr. Sullivan

SYLLABUS 2004

LECTURE	DATE	TOPIC	READING
#1	2/3/04	T1-Course Introduction T2-History of Epidemiology	Ch 1
#2	2/9/04	T3-Types of Epidemiology Studies/design features	Ch 4,5
#3	2/16/04	T4-Bias	
#4	2/23/04	T5-Causation (Study evaluation criteria)	Ch 3
#5	3/2/04	T6-Epidemiology of EMF ***article must be approved	Ch 11 article
#6	3/9/04	Midterm #1 – Principles of Epidemiology (Topics 1 to 5) T7-Epidemiology of Water	Ch 8 article
No class	3/16/04	Independent Research	
#7	3/23/04	T8-Epidemiology of Radiation	Ch 10 Articles
#8	3/30/04	T9-Epidemiology of the Workplace	Ch 7 Articles
#9	4/6/04	T10-Epidemiology of Air	Ch 13 Articles
No class	4/13/04	Spring Break	
#10	4/20/04	Midterm #2 – Epidemiology Issues (Topics 6 to 10 + evaluation criteria)	
#11	4/27/04	T11-Risk Assessment Methods ***Papers due	Ch 2
#12	5/4/04	T12-Toxicity data in risk assessment	
#13	5/11/04	T13-Exposure Assessment	
#14	5/18/04	T14-Epidemiology vs. Risk Assessment Midterm #3 – Risk Assessment (Topics 11 to 14) ***Exposure Assessment due	
final		No final exam	

California State University, Northridge
Department of Health Sciences
EOH 696A Research Design
Spring 2006
Professor Roberta Madison
Roberta.madison@csun.edu
Tuesday 4 to 6:45
Room: JD 2521
Office: JD2234: Phone: 677-4645
Office hours: Tuesday @3 pm

COURSE OUTLINE

Purpose of Course

The purpose of this course is to provide students with a foundation in applying advanced statistical methods in the design and analysis of research in the field of environmental and occupational safety and health.

Course Objectives

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

1. State the appropriate problem and null hypothesis
2. Use appropriate advanced ANOVA and regression techniques for environmental and occupational health research
3. Use SPSS 14.0 to solve statistical problems
4. Understand and explain output from SPSS

Course Text

Hicks, C.R. and Turner, K.V. Fundamental Concepts in the Design of Experiments, 5th Edition, 1999, Oxford University Press

Method of Grading

Students will be graded for the following:

- Midterm I: 100 points
- Midterm II: 100 points
- Final exam: 115 points

All grades will be assigned for the semester, without exception, in the following manner: (These are percentages)

A - A- is 100 to 90
B+ - B- is 89 to 80
C+ - C- is 79 to 70
D+ - D- is 64 to 55
F is below 55

Homework is presented at the Bottom of the page

Please inactivate all cell phones and pagers while in class.

The course outline, which is flexible (except for exams), is listed below

COURSE OUTLINE

Week	Topic	Chapter
1/3	Introduction and lab	1
2/7	Problem statement, Review of statistics	1, 2
2/14	Continue Review & SPSS lab	1, 2
2/21	Review and lab	
2/28	**Examination I**	
3/7	Single-Factor Experiments with no Restrictions on Randomization	3
3/14	Single Factor Experiments & lab	4
3/21	Practice and lab	
3/28	**Examination II**	
4/4	Factorial Design and lab	5
4/11	**Spring Recess**	
4/18	Fixed, Random and Mixed Models & lab	6

4/25	Advanced Regression and lab
5/2	Review and lab
5/9	Review
5/16	Review
5/25	Final Exam

Homework problems (Due 1 week after subject is covered)

Chapter 1. 1.1, 1.2, 1.3, 1.7

Chapter 2. 2.6, 2.9, 2.11, 2.16, 2.23, 2.24

Chapter 3. 3.2, 3.15, 3.20

Chapter 4. 4.1, 4.6, 4.13, 4.14, 4.17

Homework for chapters 5 and 6 will be announced in class. I am hoping that some of the work can be completed using SPSS.

California State University, Northridge
Department of Health Sciences
EOH 696B Seminar – Research Methods
Spring 2006
Professor Roberta Madison
Roberta.madison@csun.edu
Thursday 4 to 6:45
Room: Redwood 153
Office: JD2234: Phone: 677-4645
Office hours: Thursday @3 pm

COURSE OUTLINE

Purpose of Course

Analysis of research methodology and interpretation as applied directly to student conducted independent research in the field of occupational and environmental health.

Course Objectives

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

1. Describe the importance and use of research in the field of occupational and environmental health.
2. Conduct a literature search effectively using electronic databases
3. Critically evaluate research articles
4. Identify a problem statement and null hypothesis
5. Design a simple research project in terms of identifying the population of interest, independent and dependent variables, sampling methods, and methods of measurement
6. Choose an appropriate statistical method to test the hypothesis
7. Write a proposal in PHS 398 format (PHS 398 on search)
8. Communicate effectively the proposed study using a PowerPoint presentation

Course Text

Creswell, J.W.: Research Design, 2nd Edition, 2003, Sage Publications

References:

American Industrial Hygiene Association J
American J of Industrial Medicine
Annals of Industrial Hygiene
Applied Occupational and Env Hygiene J
Environmental health