Course Proposal for UMDNJ School of Public Health

Proposed Course Title:  Environmental and Occupational Health Practice

Brief Course Description:  This course will introduce students to the fundamental regulatory and scientific basis for modern environmental and occupational health professional practice.

Learning Objectives:

1) At the conclusion of this course the student will be able to identify the major regulatory drivers of environmental and occupational health activity in government and industry.

2) At the conclusion of this course the student will understand the scientific basis for regulatory standards and understand how the regulatory process can deviate from current scientific understanding.

3) At the conclusion of this course the student will understand how to utilize public health tools to identify environmental and occupational health problems.

4) At the conclusion of the course the student will have some knowledge about proper planning and management techniques to address environmental and occupational health problems.

Draft Syllabus/Outline - 4-29-09

1) Regulatory Overview 1: Environmental Health

reading assignment:  Chapter 4 Env Policy and Regulation; Essentials of Environmental Health by Robert H. Friis (see below for details)

- State and Federal Agencies Overview
- Regulatory Process
- Basis for Standards
  - Health Based Standards
  - Welfare Based Standards
  - Technology Based Standards
  - Economic Impact Evaluation

- Specific Regulations
  - Clean Air Act
Clean Water Act
Safe Drinking Water Act
NEPA
TSCA
RCRA
CERCLA
ISRA (state)

- Liability & Risk Management Basics
- Case Studies

2) Regulatory Overview 2: Occupational Health

Worthington

reading assignment: Chapter 13, Occ Health: Essentials of Environmental Health
by Robert H. Friis (see below for details)

- Occupational Health & Safety Regulatory Agencies
  Federal level – OSHA, MSHA
  Enforcement
  Standard-setting
  State level – OSHA, PEOSH, Other state public health agencies
- Promulgating regulations
  Federal level
  Petition --- proposed reg --- comment period -- public hearings --- final reg – compliance directives, interpretations
  State level
  Review and list state procedures similar to federal

3) Regulatory Overview 3: Public Health/Sanitation

Clancy

reading assignment: Regulatory Overview - Public Health/Sanitation

1. Chapter 52 (NJAC 8:52)

- Public Health Practice Activities at local, county and state levels (NJAC 8:52)
- County Environmental Health Act (CEHA)
- Professional Public Health Licensure Standards for Public Health Practice

4) Surveillance and Tracking

Lefkowitz
• **Occupational Injury and Illness Tracking & Data Sources**
  - Bureau of Labor Statistics
    - Strength’s / weaknesses of data
    - Using the data for benchmarking
    - Calculating injury / illness incidence rates and lost time rates for individual business establishments
  - State Workers Compensation Systems
  - State Occupational Injury and Illness Surveillance Systems
    - Overview of all NIOSH-funded occ health surveillance
    - Details of NJ surveillance systems:
      - Asthma, silicosis, lead, FACE
    - Case Studies
    - Fact Sheets
    - Reports
    - MMWR articles from state-based surveillance
  - Hazard surveillance

5) **Occupational Safety**

Reading assignments;  Various case studies by NJ FACE program

6) **Air Pollution**

Reading assignment:  Chapter 10, Air Quality: *Essentials of Environmental Health* by Robert H. Friis (see below for details)

• Overview of pollutants and definitions
• Sources and identification
• Atmospheric dispersion and reactions (basic)
• Exposures
  - outdoor and indoor air quality
  - workplace exposures
• Controls and emission capture/ventilation
• Case studies

7) **Water Pollution**

Reading assignment:  Chapter 9, Water Quality: *Essentials of Environmental Health* by Robert H. Friis (see below for details)
8) Physical agents (radiation, noise, heat, etc.)

Reading assignment: Chapter 8, Ionizing and Non-Ionizing Radiation: Essentials of Environmental Health by Robert H. Friis (see below for details)

- Introductory Health Physics
  - Overview of ionizing radiation sources and uses
    - NRC guidelines and Regulations
    - Worker and community protection
  - Overview of non-ionizing sources and uses
    - Guidelines and exposures
    - Measurement

- Noise
  - Sources and measurement
  - Dosimetry
  - Control techniques

- Heat and Cold stress

9) Infectious Disease

Reading assignment:
1. NJDHSS - [www.state.nj.us/health](http://www.state.nj.us/health)
2. NJDHSS Communicable Disease Reportables - (will utilize NJAC 8:52 again as well)
3. Swine Influenza surveillance algorithm (to be used as an example since it is our current biological threat)

- Infectious disease surveillance and contact tracing
- Public health disease reporting laws
- Infection control basics
  - Quarantine
  - Decon
  - Personal Protection, including respiratory protection

10) Violence & Security

Reading Assignment: TBD - likely will be OSHA and NIOSH guideline documents

- Discuss workplace violence prevention and control within a health and safety framework.
- Identify the evidence-based risk factors for workplace violence
- Describe the major components of an effective workplace violence prevention program
• Discuss the status of state and federal regulation of workplace violence

11) Emergency Preparedness

reading assignment: Emergency Preparedness*

1. The Spanish Flu of 1918 (article attached and will need permission to distribute)
2. Pandemic Preparedness: Pigs, Poultry, and People versus Plans, Products, and Practice (article attached and will need permission to distribute)
3. Houston response to Katrina (article attached and will need permission to distribute)

* Swine Flu case study for NJ may be used to substitute the above (if and when it is written)

• Public Health Planning Efforts at local, state and national levels
• Medical Coordination in New Jersey
  ○ Health Command
  ○ Hippocrates System
• NJ Preparedness Statewide Initiatives (i.e., BioWatch, Strategic National Stockpile)

12) Management & Leadership

reading assignment: Management and Leadership

Cases will be taken from:
Public Health Leadership & Management: cases and context
By Stuart A. Capper, Peter M. Ginter, Linda E. Swayne
Published by SAGE, 2001
ISBN 0761923187, 9780761923183
394 pages

• Multidimensional public health issues and challenges
• Case studies in leadership and management decision making
• Essential leadership and management skills in public health practice

13) Student presentations

14) Student presentations

Student Grading:

Students will be graded on the following basis:

Individual paper by each student. 40%
The paper will research and critically evaluate the basis (scientific and political) and development of a specific regulation or policy of their choosing. The student will discuss the potential benefits and detriments to each regulation or policy.

Presentation by student on their paper 10%

4 unannounced quizzes 40% total (10% each)

Final quiz 10%

Textbook:

*Essentials of Environmental Health*
Robert H. Friis, PhD, Professor, Chair, Department of Health Science - California State University, Long Beach

ISBN-10: 0763747629
$73.95 (Sugg. US List)
Paperback
390 Pages
UMDNJ-SCHOOL OF PUBLIC HEALTH

HONOR CODE

Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another’s work, to refrain from falsifying data, and to refrain from receiving and /or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the words used are his or her own. In addition to maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the school community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the UMDNJ-School of Public Health.

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Acknowledge (Print Name)       Signature

Approved by Executive Council, UMDNJ-School of Public Health: February 11, 2008