Course syllabus for Fall 2013

PH 604: Environmental Determinants of Human Health

SDSU Graduate School of Public Health
Division of Environmental Health

Instructors:
This course is taught by two instructors: Dr. PJE Quintana (Jenny), and Dr. Zohir Chowdhury. NOTE: there are two sections of this course, but both instructors are teaching both sections. There is one Blackboard course site that is for both sections.

Contact Information:
Dr. PJE (Jenny) Quintana:
Office: Hardy Tower 104
Phone number: 619-594-1688
Office hours: Tuesdays, 1:30 – 3:00 pm, Wednesdays, 11:00 – 12:00 or by appt. You can also arrange to talk before or after class with advance notice.
e-mail address: jquintan@mail.sdsu.edu

Dr. Zohir Chowdhury
Office: Hardy Tower 105
Phone number: 619-594-8085
Office hours: Tuesdays, 1:00 – 3:00 pm, or by appt. You can also arrange to talk before or after class with advance notice.
e-mail address: zohir.chowdhury@sdsu.edu

Students are encouraged to communicate by e-mail rather than telephone.

Course time and place:
P H 604 Sec 2 Sched#22246 4:00pm-6:40pm, Tuesdays, COM-105
P H 604 Sec 1 Sched#22245 1:00pm-3:40pm, Wednesdays, AH-2108
(NOTE: as long as there is space, you are welcome to attend either section (for lectures only, not exams or student presentations). They should be having the same content, but power outages etc. might affect this. This would be posted on the Blackboard site.)
Course Objectives: (Bolded objectives are those that map to the Environmental Health core competencies for the overall MPH degree (see below), CCC refers to the Cross Cutting Competencies (see below), parentheses to the competencies for the MPH in EH degree (MPH EH Objective #).

1. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.
   a. To be familiar with concepts and definitions in environmental health, such as the concept of personal exposure assessment and personal exposure vs. ambient levels of environmental pollutants
   b. To identify and classify major physical, chemical, and biological agents in the environment that pose significant hazards to public health, and to be able to identify major sources of exposure to these agents, especially in air pollution, occupational health/industrial hygiene, radiation protection, vector-borne disease, food-borne illness, water quality, and solid and hazardous waste, and climate change
   d. CCC: PROFESSIONALISM: 1. Discuss sentinel events in the history and development of the public health profession and their relevance for practice in the field.
   e. CCC: PROGRAM PLANNING: 1. Describe how social, behavioral, environmental, and biological factors contribute to specific individual and community health outcomes.
   f. (MPH EH Objective #. 1. Explain approaches for assessing, preventing and controlling environmental hazards that pose risks to human health, and recount major human health effects associated with these hazards.)

2. Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.
   b. CCC: PUBLIC HEALTH BIOLOGY: 3. Identify the ethical, social and legal issues implied by public health biology.
   d. (MPH EH Objective #. 3. Describe routes of exposure and mechanisms by which environmental agents cause toxicity and affect human health, and explain factors
(including genetic, physiological and psychosocial) which influence susceptibility to these agents)

3. Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.
   a. (MPH EH Objective #. 4. Recount and describe local, state and federal government environmental health agencies and major environmental health laws, guidelines and regulations.)

4. Specify current environmental risk assessment methods.
   a. CCC: PROFESSIONALISM. 3. Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.
   b. (MPH EH Objective #. 2. Specify current risk assessment methods and alternatives to risk assessment, and effective methods for communicating and managing risk.)

5. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.
   a. CCC: PUBLIC HEALTH BIOLOGY: 8. Apply biological principles to development and implementation of disease prevention, control, or management programs.
   b. CCC: PUBLIC HEALTH BIOLOGY: 9. Apply evidence-based biological and molecular concepts to inform public health laws, policies, and regulations.
   c. CCC: PUBLIC HEALTH BIOLOGY: 10. Integrate general biological and molecular concepts into public health.

6. Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.
   a. Apply these principles to concepts and problems in environmental health, including public policy issues
   b. CCC: PUBLIC HEALTH BIOLOGY: 4. Explain the biological and molecular basis of public health.
   c. CCC: PUBLIC HEALTH BIOLOGY: 5. Explain the role of biology in the ecological model of population-based health.
   d. (MPH EH Objective #. 3. Describe routes of exposure and mechanisms by which environmental agents cause toxicity and affect human health, and explain factors (including genetic, physiological and psychosocial) which influence susceptibility to these agents)

7. Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.
a. CCC: DIVERSITY AND CULTURE. 10. Develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.

8. Explain ethical issues and the concept of environmental justice in environmental health
   a. CCC: DIVERSITY AND CULTURE. 1. Describe the roles of, history, power, privilege and structural inequality in producing health disparities.
   b. CCC: LEADERSHIP. 8. Apply social justice and human rights principles when addressing community needs.
   c. CCC: PROFESSIONALISM. 2. Apply basic principles of ethical analysis (e.g. the Public Health Code of Ethics, human rights framework, other moral theories) to issues of public health practice and policy.
   d. CCC: PROFESSIONALISM. 8. Distinguish between population and individual ethical considerations in relation to the benefits, costs, and burdens of public health programs.
   e. (MPH EH Objective #. 12. Discuss ethical issues and the concept of environmental justice in environmental health)

9. Describe current national and international issues in environmental health, and gaps in our knowledge about assessing, preventing and controlling environmental hazards
   a. CCC: SYSTEMS THINKING. 2. Identify unintended consequences produced by changes made to a public health system.
   b. CCC: SYSTEMS THINKING. 8. Analyze inter-relationships among systems that influence the quality of life of people in their communities.
   c. (MPH EH Objective #. 13. Explain the factors that affect global environmental health including climate change and sustainability.)

10. Perform information searching in environmental health, including of peer-reviewed literature, government publications, books, and Internet resources, and research and present a group project about a real-world environmental health exposure scenario
    a. CCC: COMMUNICATION AND INFORMATICS. 8. Use information technology to access, evaluate, and interpret public health data.
    b. (MPH EH Objective #. 10. Practice applying environmental health and other public health skills in a real world, group problem solving situation.)

Please be advised that the above objectives support the Core competencies for MPH in Environmental Health degree for Environmental Health and cross-cutting competencies (Competencies for MPH from ASPH)
http://www.asph.org/publication/MPH_Core_Competency_Model/index.html
V. Interdisciplinary/Cross-cutting Definitions*

- Communication & Informatics
- Diversity & Culture
- Leadership
- Professionalism
- Program Planning
- Public Health Biology
- Systems Thinking
Communication and Informatics
The ability to collect, manage and organize data to produce information and meaning that is exchanged by use of signs and symbols; to gather, process, and present information to different audiences in-person, through information technologies, or through media channels; and to strategically design the information and knowledge exchange process to achieve specific objectives.

Diversity and Culture
The ability to interact with both diverse individuals and communities to produce or impact an intended public health outcome.

Leadership
The ability to create and communicate a shared vision for a changing future; champion solutions to organizational and community challenges; and energize commitment to goals.

Professionalism
The ability to demonstrate ethical choices, values and professional practices implicit in public health decisions; consider the effect of choices on community stewardship, equity, social justice and accountability; and to commit to personal and institutional development.

Program Planning
The ability to plan for the design, development, implementation, and evaluation of strategies to improve individual and community health.

Public Health Biology
Public health biology is the biological and molecular context of public health.

Systems Thinking
The ability to recognize system level properties that result from dynamic interactions among human and social systems and how they affect the relationships among individuals, groups, organizations, communities, and environments.

*Definitions are provided to define the context by which the workgroups' competency modeling development activities took place and are not intended to describe the entire field of the particular discipline's scholarship and practice.

Environmental Health
Environmental health sciences represent the study of environmental factors including biological, physical and chemical factors that affect the health of a community.

Upon graduation a student with an MPH should be able to…
1. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.
2. Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.
3. Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.

4. Specify current environmental risk assessment methods.

5. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.

6. Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.

7. Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.

8. Develop a testable model of environmental insult.

CERTIFICATION IN PUBLIC HEALTH!
The FIRST National exam to be Certified in Public Health (CPH) was given August 2008. (This means if you pass you would put MPH and CPH after your name). This is an optional professional certification. You must finish your MPH degree or all Public Health ‘Core’ classes to take the exam. Schedule this year [http://www.nbphe.org/](http://www.nbphe.org/)

<table>
<thead>
<tr>
<th>September 20, 2013</th>
<th>Deadline for regular registration</th>
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<tbody>
<tr>
<td>October 5-26 2013</td>
<td>Computer-based testing (CBT) administration at AMP Assessment Centers</td>
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<tr>
<td>December 31, 2013</td>
<td>Deadline for early-bird registration</td>
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<tr>
<td>January 17, 2014</td>
<td>Deadline for regular registration</td>
</tr>
<tr>
<td>February 1-22 2014</td>
<td>Computer-based testing (CBT) administration at AMP Assessment Center</td>
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Questions are based on the competencies (I am told).

REQUIRED TEXT

*Environmental Health: From Global to Local*

*SECOND EDITION*

by Howard MD, PhD Frumkin

Hardcover: 1280 pages

Publisher: Jossey-Bass; 2 edition (February 8, 2010)

# ISBN-10: 0470404876


NOTE: *If there is reading to support a lecture, web links and/or journal articles will be accessible through Blackboard, see below.*

Questions from the text may also be discussed in class (questions/ reading from text are posted under assignments button in Blackboard.

Course evaluation:

Midterm I 45%, Midterm II 40%, Ind. Assignments 10% (5% Information searching lecture, 5% small activities such as article reviews), Group Activities 5%
Study Guides: There will be objectives / study guides for each lecture on the web page for this class (see following).

MIDTERMS are multiple-choice due to the size of the class. Grades are assigned on the following scale:

<table>
<thead>
<tr>
<th>Total Points</th>
<th>Assigned Grade</th>
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<tbody>
<tr>
<td>93-100</td>
<td>A</td>
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<tr>
<td>89.9-92.9</td>
<td>A-</td>
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<tr>
<td>85-88.9</td>
<td>B+</td>
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<tr>
<td>79.9-84.9</td>
<td>B</td>
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<tr>
<td>74-78.9</td>
<td>B-</td>
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<tr>
<td>70-73.9</td>
<td>C+</td>
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<tr>
<td>64-69.9</td>
<td>C</td>
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<tr>
<td>58-63.9</td>
<td>C-</td>
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<tr>
<td>&lt;70</td>
<td>F</td>
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Please make sure you get copies of ALL HANDOUTS and OBJECTIVES for each lecture, or you may not have the material you need for the exams!!

The individual assignment on *Information Searching in Environmental Health* is posted later on Blackboard (see schedule). This will be due (hard copy only – no emails please!) **Nov 12/13 for full credit** (late is -20 points) and accepted until **Dec 10/11**.

You will be assigned to a group in class. Groups are set up on Blackboard and this will let you email your group all at once or individually and to post files for viewing. Topics on your main assignment, the presentation at the end of class on a case study, are due Sep 17/18th. ******Group assignment case study slides due **Nov 19/20 posted to group pages on Blackboard** for Core Case Study (one set of slides per group)******

AT LEAST 4 people from each group will be presenting the slides in class Dec 3/4. Your group may be asked to make changes in your slides before the presentation.

Journal Article Discussions: For many lectures, a recent journal article or news item will be posted for reading and discussion at the next lecture. Each group will be assigned questions regarding this article and one group per week will be in charge of leading a class discussion regarding the article. This will allow for the class to take 15-20 minutes of class time to discuss current events and issues with this subject matter.

There may be online quizzes or assignments due before class. These count towards your individual assignment grade. Always check Blackboard at least 1 day before class.
NOTE: if you have not already done so, please also join the GSPH listserv (instructions on our website http://publichealth.sdsu.edu/studentmain.php) to get important student announcements.

Blackboard Web site:
There is a web site for this course. (http://blackboard.sdsu.edu/). You must be able to access this web site and to log in please select the help button and follow directions if you have problems. Please contact me if this doesn’t help. If you have an old system on your home computer then you may need to access Blackboard from on-campus computing labs in order to download some handouts.

Blackboard does not list any email addresses in the roster unless a student chooses to do so. To make email addresses visible to the rest of the class, students must go into the Personal Information area from either the Student Tools area of the course, or from the Tools box on the My SDSU page and click on Privacy Options. They can then choose what information to share with the rest of the class. If you want to share your email but do not wish to enter a work email address, you may obtain a student email account and use that.

What is on the website:
• Announcements and reminders
• Syllabus and updates
• Study guides/objectives for each lecture
• Web links to reading and journal articles
• Discussion boards (post questions about the exam here)
• Exam scores (for your eyes only)
• Group discussion boards (you can email your group through this link)

Functions of groups
• To complete group assignments which are: the Core Case Study (your biggest group project) and small informal group assignments, such as preparing journal article answers to be given in class AND
• practice working in groups, which is the norm in public health
• Forum for asking questions and exchanging advice about the GSPH
• A way for students from different divisions to get acquainted (class groups will be assigned by the instructor)

**It is expected that you will check Blackboard every week at least, before class**

LAPTOP ETIQUETTE:
You may use your laptop in class if you are viewing handouts or making notes on lecture.
PLEASE DO NOT use laptop for any other kind of work/ internet surfing. There are tables just outside if you must send an email or do other things. It is very distracting to other students in the class.

Course policies

Missing class. If you miss a class, it is your responsibility to contact the instructor to discuss alternatives to any quiz or exercise you miss, and to obtain lecture notes, handouts, other materials or instructions from the course Blackboard site or a classmate.

Religious holidays. The University Policy File includes the following statement on absence for Religious Observances: By the end of the second week of classes, students should notify the instructors of affected courses of planned absences for religious observances.

Assignments. Assignments must be submitted no later than the specified due date. Assignments will not be accepted past the due date. If you are unable to attend class the day an assignment is due, email it to me.

Academic misconduct by a student shall include, but not be limited to: disrupting classes; giving or receiving unauthorized aid on examinations, reports or other assignments; knowingly misrepresenting the source of any academic work; falsifying research results; plagiarizing another’s work; violating regulations or ethical codes for the treatment of human subjects; or otherwise acting dishonestly. If an instance of academic misconduct is suspected, the student will be informed of the infraction and the penalty to be imposed. If appropriate, the matter will be referred to the Department Chair and Dean of the College for mediation. Potential sanctions include a warning, an admonition, censure, reduction of grade (including a grade of F for the course), disciplinary probation, suspension, or expulsion.

Computers. Every student must have access to the internet and a computer in order to obtain communications from the professor, download reading material and conduct document searches of on-line publications.

*If a class must be cancelled without prior notification, it will be posted on Blackboard, the day of the class, no later than noon.

San Diego State University is dedicated to a safe, supportive and nondiscriminatory environment. It is the responsibility of all students to familiarize themselves with University policies regarding nondiscrimination, misconduct and academic honesty.

Statement on Nondiscrimination Policy

San Diego State University complies with the requirements of Title VI and Title VII of the Civil Rights Act of 1964, as well as other applicable federal and state laws prohibiting discrimination. No person shall, on the basis of race, color, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any program of the California State University

SDSU does not discriminate on the basis of disability in admission or access to, or treatment or employment in, its programs and activities. Students should direct inquiries concerning San Diego State University’s compliance with all relevant disability laws to the Director of Student Disability Services (SDS), Calpulli Center, Room 3101, San Diego State University, San Diego, CA 92128 or call 619-594-6473 (TDD: 619-594-2929).

SDSU does not discriminate on the basis of sex, gender, or sexual orientation in the educational programs or activities it conducts.

More detail on SDSU’s Nondiscrimination Policy can be found in the SDSU General Catalog, University Policies.
Student Conduct and Grievances

SDSU is committed to maintaining a safe and healthy living and learning environment for students, faculty and staff. Sections 41301, Standards for Student Conduct, and Sections 41302-41304 of the University Policies regarding student conduct should be reviewed.

If a student believes that a professor’s treatment is grossly unfair or that a professor’s behavior is clearly unprofessional, the student may bring the complaint to the proper university authorities and official reviewing bodies. See University policies on Student Grievances.

Statement on Plagiarism and Academic Dishonesty

Academic dishonesty includes cheating, plagiarism or other forms of academic dishonesty that are intended to gain unfair academic advantage. See section 41301 of the University policies. Plagiarism is an important element of this policy. Plagiarism is defined as ‘formal work publicly misrepresented as original; it is any activity wherein one person knowingly, directly and for lucre, status, recognition, or any public gain resorts to the published or unpublished work of another in order to represent it as one’s own’. Any work, in whole or in part, taken from the Internet or other computer-based source without referencing the source is considered plagiarism.
## Course Outline: PH 604  
**NOTE: MAY BE CHANGED WITHOUT NOTICE**

<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
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<tbody>
<tr>
<td>Aug 27/28</td>
<td><strong>Welcome (Drs. Chowdhury and Quintana)</strong></td>
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<tr>
<td></td>
<td><strong>Introduction to Environmental Health/ Exposure assessment (Quintana)</strong></td>
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<td><strong>NOTE:</strong> Class groups will be assigned in this session. If you miss this session please email instructor at <a href="mailto:jquintan@mail.sdsu.edu">jquintan@mail.sdsu.edu</a></td>
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<tr>
<td>Sep 3/4</td>
<td><strong>The Workplace (Quintana)</strong></td>
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<td>(Journal Articles Discussion:-- all groups, Exposure Assessment)</td>
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<td>Find these articles under the ‘course documents’ folder for the week on Blackboard for this and future weeks (Group Case study topic discussion time this week or next week)</td>
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<tr>
<td>Sep 10/11</td>
<td><strong>Toxicology and toxic substances (Quintana)</strong></td>
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<td>Journal Article discussion (led by Group 1/7) Group Case study topic discussion time this week or next week</td>
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<tr>
<td>Sep 17/18</td>
<td><strong>Risk Assessment/ Public Health Genetics (Quintana)</strong></td>
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<td>Group Case study discussion time <strong>TOPICS DUE GROUP CASE STUDY TODAY</strong></td>
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<td>Journal Article Discussion (led by Group 2/8)</td>
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<td>Sep 24/25</td>
<td><strong>Vector-Borne Disease (Quintana)</strong></td>
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<tr>
<td>Oct 1/2</td>
<td><strong>Information searching in Environmental Health (Marilyn Hall)</strong></td>
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<td>****(note:-- please check announcements before class in case of room change) meet in Love Library 430 *****MAKE SURE YOU LOOK AT individual homework assignment before this lecture (you may wish to bring it to the lecture), followed by <strong>Group case study discussion time</strong> (note: your group may have to meet in Library elsewhere as we may not have access to same room for whole time)</td>
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<tr>
<td>Oct 8/9</td>
<td><strong>Food Protection (Quintana)</strong></td>
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<tr>
<td>Oct 15/16</td>
<td><strong>MIDTERM</strong></td>
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<td>Oct 22/23</td>
<td><strong>Radiation and Public Health (Chowdhury) / Group Case study discussion time</strong></td>
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<tr>
<td>Oct 29/30</td>
<td><strong>Water and Sewage (Chowdhury) / Group case study discussion time</strong></td>
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<tr>
<td>Nov 5/6</td>
<td><strong>Solid and Hazardous Waste (Chowdhury)</strong></td>
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<tr>
<td>Nov 12/13</td>
<td><strong>Air Pollution &amp; Indoor Air Pollution (Chowdhury)</strong></td>
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<tr>
<td>Nov 19/20</td>
<td><strong>Climate Change and Public Health (Chowdhury)</strong></td>
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<tr>
<td>Nov 26/27</td>
<td><strong>(No in-class meeting) Children’s Environmental Health (online material)</strong></td>
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</tbody>
</table>
Dec 3/4  Public Health Core Case Study GROUP presentations in class
(Chowdhury/Quintana).

Dec 10/11  Midterm II Non-comprehensive!! Up to and including all lectures and study
guide from class presentations. Last day Individual Homework assignments
accepted (must be hard copy, and -20 points if received after Nov 26/27)***

NO FINAL EXAM