Department of Environmental and Occupational Health
Syllabus

Course Name: Community Air Pollution
Prefix & Number: PHC 6303 **Sections:** 001 ref# 82070
Semester: Fall, 2011

Course Description:	A study of air pollution. Emphasis is given to principles underlying our understanding of ambient air pollution, its sources, its effects, and mechanisms for its management.	
Credit hours and Work Expectations:	3 units; Students should plan to spend 3 hours in class each week and approximately three times that amount of time on course activities outside of class (this is a general rule of thumb and is applicable to this class). Students who do not genuinely have at least 10 hours per week to devote to this class alone, should not take this class.	
Pre-requisites:	Pre-calculus algebra (college-level calculus is recommended), College-level general chemistry As defined by ASPH, Environmental Health Sciences represents '*the study of environmental factors including biological, physical and chemical factors that affect the health of the community*'.[1] Hence, this is a science-based course that requires comfort with college-level mathematical calculations and chemistry. Students who do not feel comfortable with this material will need to do outside self-study or obtain tutoring to be comfortable in the class. I am available to help students on class and prerequisite materials during my office hours. [1]Calhoun et al., 2008. Development of a core competency model for the Master of Public Health Degree. *American Journal of Public Health,* 98(9), pp. 1598-1607	
Location:	COPH, Room 2016 (Tampa Campus)	
Dates and times:	Tuesdays, 5:15 – 8:00 pm, August 23 – Nov. 30 **Final Exam: Dec. 6, 5:30 – 7:30 pm**	
Course Format:	In-person weekly classroom instruction, including lectures, discussions, audio-visual presentations, and group learning activities.	
Instructor Information:	Name	Amy Stuart, PhD Associate Professor
	Office location	COPH 1117
	Office hours (tentative)	M 4:30 – 5:30 PM (drop-in), W 3:00 – 4:00 PM (drop-in) Past students have found that office hours are helpful and sometimes necessary for completing course activities.
	Phone / Email	974-6632; astuart@hsc.usf.edu
	Contact method	In-person during office hours preferred.
	Reply policy	I will also respond to email and phone messages when possible. Reply times may vary up to several days.

<table>
<tr><td>Course Content Outline (tentative):</td><td colspan="2">The earth's atmosphere: structure and composition
Air pollution sources and emissions
Atmospheric motion and pollutant transport
Gas phase chemistry and photochemical smog
Aerosols and particulate matter
Aqueous chemistry and pollutant deposition
Exposure and health effects
Visibility; stratospheric ozone
Climate change
Management and regulations
Measurement and monitoring
Air pollution modeling</td></tr>
<tr><td rowspan="11">Calendar of Major Course Deadlines:</td><td><u>Date</u></td><td><u>Deadlines</u></td></tr>
<tr><td>Aug 23</td><td>Pre-assessment exam (in-class)</td></tr>
<tr><td>Sept 13</td><td>Project topic abstract due</td></tr>
<tr><td>Oct 4</td><td>Content Quiz 1</td></tr>
<tr><td>Oct 11</td><td>Detailed outline of paper due</td></tr>
<tr><td>Nov 1</td><td>Content Quiz 2</td></tr>
<tr><td>Nov 15</td><td>Refined paper drafts due</td></tr>
<tr><td>Nov 22</td><td>Paper peer reviews due</td></tr>
<tr><td>Nov 29</td><td>Project presentations</td></tr>
<tr><td>Dec 2</td><td>Final papers due by 5pm (to CPH 1117)</td></tr>
<tr><td>Dec 6</td><td>Final exam</td></tr>
<tr><td>Materials:</td><td colspan="2">Required readings for each week will be listed on the Blackboard course website. Readings will be drawn from multiple sources, including those listed below:

Atmospheric Pollution: History, Science, and Regulation, by Mark Z. Jacobson, Cambridge University Press, Cambridge, 2002. (Available through the USF main and HSC bookstores. Also on course reserve at the main USF library.)
Air Quality, by Thad Godish, 4th Edition, Lewis Publishers, 2003. (Available through the USF main and HSC bookstores. Also on course reserve at the main USF library.)
Fundamentals of Air Pollution. 4th Edition, by Daniel Vallero. Academic Press, Burlington, MA, 2008. (On course reserve at the main USF library.)
Air Pollution and Health, S.H. Holgate, J.M. Samet, H.S. Koren, and R.L. Maynard, Eds., Academic Press, 1999. (On course reserve at the main USF library.)
Atmospheric Chemistry and Physics, by John Seinfeld and Spyros Pandis, John Wiley & Sons, 1997. (A USF electronic resource)

Student are encouraged to use whatever legal mechanisms work for their personal situation (e.g. financial) to access the required reading materials. For example, mechanisms include physical or electronic book purchase or rental, physical and electronic libraries, book sharing, and book borrowing.</td></tr>
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Learning Objectives:

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

1. Discuss several types of air pollution problems and the chemistry and physics affecting them.
2. Discuss (physical, chemical, biological, and social) mechanisms leading to impacts of air pollution on human health, welfare, and the environment.
3. Discuss air pollution management practices (regulations, strategies).
4. Analyze (quantitatively and qualitatively) impacts of air pollution management decisions on air quality, human health, and the environment.
5. Select methods for measurement, control, and prevention of air pollution.
6. Synthesize and evaluate knowledge on air pollution topics in written and oral form.

Competencies:

The course supports several degree and professional competencies. Some specific competencies with substantial contributions include:

Competency	Learning Objectives	Assessment Strategies
MPH Competencies in Environmental Health, USF College of Public Health		
• Describe natural and engineered environmental systems and their interrelationships with human activities and human health;	1-3,6	1-5
• Relate the history of environmental health issues to current practices and policies;	3,4,6	1-5
• Apply technical knowledge and skill for the prevention and/or control of specific environmental health problems;	4,5	1-5
• Communicate orally and in writing relevant information concerning environmental health issues;	1-3,6	1-5
• Identify scientific, cultural, political and ethical practices and decisions that may have adverse effects on at-risk human populations or the sensitive ecosystems on each geographical scale;	2-4,6	1-5
• Decide between alternatives, or strategies, to minimize or alleviate adverse environmental impacts;	4-6	1,2,4,5
• Interpret published environmental health research findings	2,4,6	2,4,5
MSPH Competencies in Environmental Health, USF College of Public Health		
• Develop laboratory and field sampling and analyses skills, and data analyses and interpretation skills, to answer a research hypothesis;	1-6	1-5
• Communicate orally and in writing research implications, methods, results, and conclusions	1-3,6	2

• Interpret published environmental health research findings; and	1-4,6	2,4,5
Discipline-specific MPH Core Competencies in Environmental Health Sciences, Associated Schools of Public Health[1] (ASPH)		
• Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.	1,2,4,6	1-5
• Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.	2-6	1-5
• Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.	2-6	2,4,5

Interdisciplinary/Cross-cutting MPH Competencies in Communication and Informatics, ASPH		
• Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities.	6	2,4,5
• Use information technology to access, evaluate, and interpret public health data.	4-6	2,4,5
Interdisciplinary/Cross-cutting MPH Competencies in Leadership, ASPH		
• Engage in dialogue and learning from others to advance public health goals.	1-6	2,4,5
• Demonstrate team building, negotiation, and conflict management skills.	4-6	2,4,5
• Develop strategies to motivate others for collaborative problem solving, decision-making, and evaluation.	4-6	2,4,5
Interdisciplinary/Cross-cutting MPH Competencies in Professionalism, ASPH		
• Describe how social, behavioral, environmental, and biological factors contribute to specific individual and community health outcomes.	1-4	1-5
• Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.	5,6	2,4,5
Interdisciplinary/Cross-cutting MPH Competencies in Systems Thinking, ASPH		
• Analyze the effects of political, social, and economic policies on public health systems at the local, state, national, and international levels.	4-6	1,2,4,5

Assessment Strategies:
1) Final Exam: The final exam will occur in-class during the USF scheduled final exam time. Questions will include quantitative calculations, quantitative and qualitative diagrams, short answers, and essays. **2) Project:** Each student team (or student, depending on the number of students enrolled) will prepare a report and give a presentation on an air quality topic of interest. A one-page topic abstract (with references) and a detailed outline are due early in the semester. Refined drafts will also be submitted for peer review. Safe-Assignment and other plagiarism checking methods may be used. **3) Content Quizzes:** There will be two content quizzes during the semester. Quiz questions will primarily deal with concepts, descriptions, diagrams, and short calculations. **4) Class Participation:** All students are expected to participate in class by regularly attending class, by preparing adequately for class (through assigned readings and deliberate practice work), and by actively participating in class discussions and activities (including presentation of deliberate practice solution methodology to the class). Class participation assignments will also include preparation of materials for presentation, discussion, and other in-class activities. Class participation credit can also be gained by cutting out, discussing with the class, and handing in news articles and comics on air quality issues. All students are expected to bring in and discuss at least one article during the course. (Additional articles will earn extra credit.) **5) Deliberate Practice Self-Assessments:** Research indicates that high-level learning requires deliberate practice. Deliberate practice involves mentally demanding (i.e., challenging, requiring full mental focus) and repeated work, followed by self-observation and reflection on performance. Practice work problems related to the course topics, including quantitative calculations and written short answer problems will be provided on a regular basis for student practice through the course Blackboard site. Brief answers to the quantitative problems will be provided approximately one week later for student self-assessment. Answers provided will not include the methods used to obtain the answer (just the answer itself); if you do not do the work yourself, the answers will not be useful to learning or exam preparation. Hence, you are strongly encouraged to do all practice problems before the answers are made available, so that you can do the self assessments and actually learn. Additionally, students will regularly be required to present their solution methodology or solution attempts to the class as a part of class participation (discussed above). Additional instructor assistance with solution methods can be obtained by attending office hours.

Grading Scale:	The course will be graded on a curve, with natural divisions in the earned scores leading to divisions in the letter grades. + and – grades will be used in this course The percentage contribution of each assessment category to the numerical course grade are: Project 30% Quizzes 25% Final Exam 30% Class Participation 15% Deliberate practice problems will not be graded; they are a learning tool.

Grading Policies:	Students are expected to turn in assignments on time and to be present to take the quizzes and final exam. If you cannot be present for the scheduled exam dates, you should inform me of the conflict by the second class meeting, so that alternate arrangements can be made. Such arrangements will only be made if your reasons are compelling. Some university-regulated excuses include disability-related conditions, observance of major religious holidays, and official participation in university-sponsored athletic events. Students who anticipate missing an exam for these reasons should provide the official paperwork or written notice (for religious observance) to me by the second class meeting. No late assignments will be accepted. Students are always welcome to turn in assignments early. If you miss a class or anticipate missing a class, you should contact a fellow student to get any needed information or announcements.

OTHER COURSE POLICIES	
Attendance and Class Participation:	Students are expected to regularly participate in the class. If you do not attend, it is not possible to participate.
	See Institutional Policies section for Emergency Preparedness for Academic Continuity.
Permission to Use Lectures:	Lectures may not be recorded without prior permission of the instructor. All unauthorized recordings of class are prohibited. Recordings that accommodate individual student needs must be approved in advance and may be used for personal use during the semester only; redistribution is prohibited. Materials generated for this class may be copyrighted. You may make single copies for your personal scholastic use in accordance with U.S. copyright law. Any other reproduction or dissemination is not allowed without prior express permission from the copyright holder.
Electronic Equipment Usage:	Electronic equipment, including cell phones, personal digital assistants, computers, etc. must be turned off prior to entering the classroom. Computer use is only allowed when specifically authorized by the instructor. This equipment is disruptive to the class and distracting to students and the instructor.
Academic Dishonesty and Disruption of the Academic Process:	Academic dishonesty or disruption of the academic process in any form, including plagiarism, will not be tolerated and is grounds for failure. See the USF Graduate Catalog (Section 7) at http://www.grad.usf.edu/newsite/catalog/main.asp for a discussion of forms and consequences. A plagiarism tutorial is available through at http://www.cte.usf.edu/plagiarism/index.html. Safe Assignment or other plagarism checking techniques may be used.

INSTITUTIONAL POLICIES	
Policy References:	USF Academic Policies for Students are provided in the USF Tampa Graduate Catalog at http://www.grad.usf.edu/inc/linked-files/USF_Grad_Catalog_2010_2011.pdf and in the USF Student Planner at http://www.sa.usf.edu/handbook/ Some specifics are discussed below with a few additional references.
Student Conduct:	USF Student Rights/Responsibilities: http://www.sa.usf.edu/srr/page.asp?id=81 USF Student Code of Conduct: http://www.sa.usf.edu/srr/page.asp?id=88
Disruption of Academic Process:	Disruption of the academic process will not be tolerated. Review USF policies in Section 7 of the USF Tampa Graduate Catalog.
Academic Dishonesty/ Plagiarism:	Academic dishonesty, including plagiarism, will not be tolerated and is grounds for failure. See Section 7 of the USF Tampa Graduate Catalog. The University of South Florida has an account with an automated plagiarism detection service (*SafeAssign*), which allows instructors and students to submit student assignments to be checked for plagiarism. I (the instructor) reserve the right to 1) request that assignments be submitted as electronic files and 2) submit students' assignments to *SafeAssign*, or 3) request students to submit their assignments to *SafeAssign* through myUSF. Assignments are compared automatically with a database of journal articles, web articles, the internet and previously submitted papers. The instructor receives a report showing exactly how a student's paper was plagiarized. Other plagiarism checking methods may also be used. **NOTE:** An institution may not release a paper to a plagiarism detection software without the student's prior consent unless all personally identifiable information has been removed, such as a student's name, social security number, student number, etc.. Note that a paper/essay is considered an educational record and an institution may not ask a student to waive their rights under FERPA for the purpose of submitting papers to a plagiarism detection software. For more information about Plagiarism and *SafeAssign*, visit: Plagiarism tutorial: http://www.cte.usf.edu/plagiarism/plag.html *SafeAssign*: http://media.c21te.usf.edu/pdf/student/bbstud_subsafeassgn.pdf

Cheating:	The USF College of Public Health expects students to maintain academic honesty in all courses. By virtue of being registered in an public health course, students agree to refrain from cheating. If cheating in any form (academic dishonesty) is detected, appropriate action will be taken. (Refer to USF Academic Dishonesty Policy in Section 7 of the Graduate Catalog).
Special Accommodations:	Students in need of academic accommodations for a disability should contact the office of Services for Students with Disabilities to arrange appropriate accommodations. Students are required to give reasonable notice (typically 5 working days) prior to requesting an accommodation. Students with Disabilities Services: http://www.sds.usf.edu/ Students: http://www.sds.usf.edu/students.asp Faculty: http://www.sds.usf.edu/faculty.asp
Holidays and Religious Observances:	http://generalcounsel.usf.edu/policies-and-procedures/pdfs/policy-10-045.pdf
Emergency Preparedness:	In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include but are not limited to: Blackboard, Elluminate, Skype, and email messaging and/or an alternate schedule. It's the responsibility of the student to monitor Blackboard site for each class for course specific communication, and the main USF, College, and department websites, emails, and MoBull messages for important general information.
Student Grievance Procedure:	Review USF Academic Grievance Policy in Section 7 of the USF Graduate Catalog. Student assistance is provided by Division of Student Affairs, Office of the Student Ombudsman. http://www.sa.usf.edu/ombudsman

RESOURCES FOR STUDENTS	
Library Resources:	USF Library Resources and Services: http://www.lib.usf.edu/ Shimberg Health Sciences Library: http://health.usf.edu/library/ Shimberg Health Sciences Library Tutorials: http://library.hsc.usf.edu/ (follow links under 'Instructional Services' section)
Creating Citations & Using Refworks:	http://guides.lib.usf.edu/CitingSources
Plagiarism & Safe Assign:	See Academic Dishonesty/Plagiarism Section
USF Email Accounts:	http://health.usf.edu/publichealth/eta/pdf/MyUSF_Email.pdf
Blackboard Tutorials:	http://media.c21te.usf.edu/bbstudents.html