New Course Request

Check Appropriate Boxes:  Undergraduate credit [✓]  Graduate credit [ ]  Professional credit [ ]

1. School/Division  Medicine/Public Health  2. Academic Subject Code  PBHL

3. Course Number  A451 (must be cleared with University Enrollment Services)

5. Course Title  Air Pollution in the Community

Recommended Abbreviation (Optional)  Air Pollution in the Community

(Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year):  Fall 2010

7. Credit Hours: Fixed at 3 or Variable from 0 to 0

8. Is this course to be graded S-F (only)? Yes [✓]  No [ ]

9. Is variable title approval being requested? Yes [ ]  No [✓]

10. Course description (not to exceed 50 words) for Bulletin publication:  This course on air pollution provides the student with a basic foundation in the science and management of air quality. Our focus is on scientific technical aspects of air pollution through the study of the characteristics of the atmosphere and atmospheric pollutants/meteorology, and basic dispersion modeling, atmospheric effects, including global warming and ozone depletion; health and welfare effects, emissions assessment; motor vehicles emissions and stationary source emissions control/and indoor air pollution.

11. Lecture Contact Hours: Fixed at 3 or Variable from 0 to 0

12. Non-Lecture Contact Hours: Fixed at 3 or Variable from 0 to 0

13. Estimated enrollment: 30 of which 100 percent are expected to be graduate students.

14. Frequency of scheduling: Fall/Spring/Summer

15. Will this course be required for majors? No

16. Justification for new course:  Necessary component for the development of the Bachelor of Science in Public Health (BSPH) Program.

17. Are the necessary reading materials currently available in the appropriate library? Yes

18. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:  Carolle Kacins

Department Chairman/Division Director

Date 1-29-10

Approved by:

Dean

Date

Chancellor/Vice-President

Date

University Enrollment Services

Date

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

University Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow; Department/Division—Pink; University Enrollment Services Advance—White
INDIANA UNIVERSITY SCHOOL OF MEDICINE
DEPARTMENT OF PUBLIC HEALTH
SPRING, 2011

COURSE TITLE: Air Pollution in the Community
COURSE NUMBER: PBHL-A451
LOCATION: TBA
DATE: TBA

FACULTY: Ingrid Ritchie
Associate Professor/Public Health/Medicine
274-3752
iritchie@iupui.edu

COURSE DESCRIPTION

This course on air pollution provides the student with a basic foundation in the science and management of air quality. Our focus is on the scientific technical aspects of air pollution through the study of the characteristics of the atmosphere and atmospheric pollutants; meteorology and basic dispersion modeling; atmospheric effects, including global warming and ozone depletion; health and welfare effects; emissions assessment; motor vehicle emissions and stationary source emissions control; and indoor air pollution. We learn about the management of air pollution issues through our study of regulation and public policy, which inherently requires an understanding of the technical aspects of the field.

PRINCIPLES OF UNDERGRADUATE LEARNING

The activities in this course—lecture/discussion, problem-solving, tests, research paper and presentation—are linked to the following Principles of Undergraduate Education:

- Core Communication and Quantitative Skills—This course will develop your use of information technology by requiring you to search the popular and professional literature for information related to the field. You will develop quantitative skills by applying mathematical equations using in air quality to problem-solving. You will develop written and oral communication skills through written assignments, exams, and group discussions.

- Critical Thinking—In this course, you will demonstrate critical thinking in a number of ways. Each component of the course requires remembering and understanding factual knowledge—the technical language of the field of air pollution. You will apply factual knowledge to solve mathematical and other technical problems and demonstrate the ability to analyze complex issues such as global warming, ozone depletion, and long-range transport of air pollution. At each stage of the course, you will demonstrate the ability to evaluate technical information and make informed decisions about the logic, validity, and relevance of propositions and complex problems.

- Intellectual Depth—This course contributes to your ability to demonstrate substantial knowledge and understanding of environmental science and health through the skills and knowledge you acquire during your study of air pollution. (Major Emphasis)
LEARNING OBJECTIVES

At the completion of this course, you will be able at the intermediate and advanced levels of mastery to:

- identify and characterize traditional air pollutants in the atmosphere
- discuss health and environmental effects of air pollution and specific pollutants
- identify and explain atmospheric effects of air pollution, including global climate changes, acidic deposition, and visibility
- Identify and explain technologies for the control of air pollution
- identify and explain air quality measurement methods
- identify current components of the regulatory framework for air quality in the U.S.
- discuss the local, regional, and international nature of air quality issues and the impact of policy options on air quality on these scales
- apply commonly used calculations, including dispersion modeling, in the field of air quality to problem-solving

REQUIRED OR SUGGESTED TEXT AND/OR READINGS


Additional readings provided by the instructor (most available via Internet links)

EVALUATION AND GRADING SCALE

In this course, you are evaluated based on your ability to explain and apply concepts, perform calculations, and use higher order thinking to solve problems. The course grading rubric is given in Table 1.

The textbook includes questions at the end of each chapter and additional questions will be provided to help you master the concepts and basic calculations. Some, but not all, problem sets will be graded, but you are advised to work through each set of problems, even if the problem set is not graded. You should be prepared to discuss problems if called upon in class. The total number of problem sets will vary depending upon the needs of the class. If you do not understand material or have questions about calculations, it is your responsibility to ask for assistance. Remember, if I don’t know that you’re having difficulty, I can’t help you. You will be responsible for information provided in the textbook and all lectures/handouts.

Air Pollution is a specialized and highly technical subject. There are numerous terms, acronyms, chemical and physical processes, and other factual information to master. You will enhance your chances of success if you approach studying this material in a systematic way.

Helpful hints include:

- Read the textbook/notes to obtain a general understanding.
- Re-read the assigned reading (reading out loud helps) and outline it. Reading out loud lets you be more active in learning and provides another way of exposing yourself to the material.
- Make note cards for new terms and acronyms.
- Make note cards for formulas.
- Answer the questions at the end of the chapter:
- You will have mastered the material and be ready for a test when you can answer the questions in the textbook, define terms and acronyms, perform calculations, and explain the material you’ve studied.
Review previously covered material at the end of each week.

The IUPUI campus recommends that you plan for about 3 hours of study time for each hour that you are in class. Following this guideline will ensure that you have the highest level of preparation for this course. Realize that if you are overloaded with work, classes, and family obligations, something has to give. You can’t do everything—each day has only 24 hours!

The course grade will be based on the following:

3 Exams (20% each) + Cumulative Final Exam (20%)
7 Homework Sets (20%)

*Note: In this course, your mastery of the material is demonstrated primarily through exams. The exam format may include essay, true/false, multiple choice matching, and short answer questions. Homework is intended to encourage you to give you practice with problem-solving, and for this reason it is given a relatively lower weighting than exams. There typically are about seven homework assignments.

The grading scale (in percent) for the final grade is:

A+ = 97-100    A = 93-96    A- = 90-92
B+ = 87-89     B = 83-86    B- = 80-82
C+ = 77-79     C = 73-76    C- = 70-72
D+ = 67-69     D = 63-66    D- = 60-62
F = below 60

ATTENDANCE

The course grade does not include attendance, however, because of the technical nature of the class, attending each session will ensure that you have ample opportunity to ask questions and ensure a solid understanding of the course material.

It is important to arrive on time to class and complete assigned work by the due dates. Absences are excused if there is an emergency; however, you must contact the instructor prior to class. I may request a doctor’s note or other supporting documentation for absences.

If you are tardy on a test day, you will be allowed to take the test when you arrive, but extra time cannot be given to complete the test.

I recognize that extenuating circumstances may exist which cause a student to be tardy or to submit a late assignment. I will consider these on a case by case basis, but all students will be treated equitably.

STUDENTS WITH DISABILITIES

Students needing accommodations because of disability will need to register with Adaptive Educational Services (AES) and complete the appropriate forms issued by AES before accommodations will be given. The AES office is located in CA 001E and you can reach the office staff by calling 274-3241.
STUDENT COURSE EVALUATION

The Department of Public Health evaluates all courses. Student course evaluations will be conducted in a manner that maintains the integrity of the process and the anonymity of respondents.

ACADEMIC INTEGRITY

Academic and personal misconduct by students in this class are defined and dealt with according to the procedures in the Student Misconduct section of the IUPUI Code of Student Rights, Responsibilities, and Conduct (available at http://live.iupui.edu/dos/code/htm).

Personal integrity is an essential element of professionalism and a basic academic responsibility. Any student who violates the student code of conduct (this includes allowing another student to copy his/her work) will be subject to IUPUI’s policy on academic misconduct. Unless specifically authorized, individual work is expected and required in this class.

Students are responsible for upholding and maintaining academic and professional honesty and integrity as delineated in Part II Student Responsibilities, G) of the IUPUI Code of Student Rights, Responsibilities, and Conduct (available at http://www.iupui.edu/code/). All faculty have the responsibility of fostering the “intellectual honesty as well as the intellectual development of students” and part of this responsibility means that faculty must investigate cases of potential academic misconduct promptly and thoroughly. Faculty members also have the responsibility of taking appropriate action when academic misconduct occurs. The penalties for academic misconduct include but are not limited to lowering a grade on an assignment, lowering a course grade, or failing a student for a course. Significant violations of the Code can result in expulsion from the University.

Public Health faculty take their responsibilities seriously and do not tolerate cheating, plagiarism, or any other form of academic misconduct. If you have not done so, you should read about your responsibilities in the IUPUI Code of Student Rights, Responsibilities, and Conduct to ensure that you understand what these terms mean and what penalties can be issued for academic misconduct.

Plagiarism is the most common academic misconduct violation, and some students, who have been disciplined for plagiarism, have said they were not aware that they had plagiarized their work. Be aware that 'not knowing' does not excuse academic misconduct – every student is responsible for knowing the rules. If you have any questions about what constitutes academic misconduct for a course you are taking, be sure to ask the instructor for an explanation.

The IU School of Education’s ‘How to Recognize Plagiarism’ is an on-line tutorial that can help you understand and avoid plagiarizing the work of others. It can be accessed at http://www.indiana.edu/~istd/. Another useful tool is an online originality checking service provided by turnitin.com. This service is available to faculty through the IUPUI University Library; faculty who use this service can submit student papers to the online service to check for plagiarism.

The IUPUI Code of Student Rights, Responsibilities, and Conduct defines four areas of academic misconduct: cheating, fabrication, plagiarism, and interference. The prohibited activities and actions as given in the IUPUI Code of Student Rights, Responsibilities, and Conduct include the following:

1. Cheating. A student must not use or attempt to use unauthorized assistance, materials, information, or study aids in any academic exercise, including, but not limited to, the following:
   a. A student must not use external assistance on any "in-class" or "take-home" examination, unless the instructor specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes, and calculators.
b. A student must not use another person as a substitute in the taking of an examination or quiz.
c. A student must not steal examinations or other course materials.
d. A student must not allow others to conduct research or to prepare work for him or her without advance authorization from the instructor to whom the work is being submitted. Under this prohibition, a student must not make any unauthorized use of materials obtained from commercial term paper companies or from files of papers prepared by other persons.
e. A student must not collaborate with other persons on a particular project and submit a copy of a written report which is represented explicitly or implicitly as the student's individual work.
f. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on field work.
g. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor to whom the work is being submitted.
h. A student must not alter a grade or score in any way.

2. Fabrication. A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citations to the sources of information.

3. Plagiarism. A student must not adopt or reproduce ideas, words, or statements of another person without appropriate acknowledgment. A student must give credit to the originality of others and acknowledge an indebtedness whenever he or she does any of the following:
   a. Quotes another person's actual words, either oral or written;
   b. Paraphrases another person's words, either oral or written;
   c. Uses another person's idea, opinion, or theory; or
   d. Borrows facts, statistics, or other illustrative material, unless the information is common knowledge.

4. Interference.
   a. A student must not steal, change, destroy, or impede another student's work. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.
   b. A student must not give or offer a bribe, promise favors, or make threats with the intention of affecting a grade or the evaluation of academic performance.
**Tentative Schedule**

Note that adjustments to the schedule may be required depending on our pace and other factors. You will be notified in class or via Oncourse of any required changes in the topics/ readings.

In addition to the textbook readings, there are notes on each chapter. These will be posted on Oncourse.

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Textbook Reading</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introductions; review course syllabus; begin Historical Overview</td>
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<td></td>
<td>Historical Overview (continued)</td>
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<td>Week 2</td>
<td>Introductory Concepts</td>
<td>Ch 1 pp 1-12 and Ch 2 pp 23-31</td>
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<td>Atmospheric Pollutants; Guidelines for Papers/Presentations (posted on Oncourse)</td>
<td>Ch 2 pp 31-67</td>
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<td>Week 3</td>
<td>Atmospheric Pollutants – CO</td>
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<td>Week 4</td>
<td>Atmospheric Pollutants – SO$_2$</td>
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<td>Exam 1</td>
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<td>Week 5</td>
<td>Atmospheric Pollutants – SO$_2$</td>
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<td>Atmospheric Pollutants – HC</td>
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<td>Week 6</td>
<td>Health Effects</td>
<td>Ch. 5</td>
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<td>Health Effects (continued)</td>
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<td>Week 7</td>
<td>Welfare Effects</td>
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<td>Atmospheric Pollutants – NO$_x$</td>
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<td>Week 8</td>
<td>Exam 2</td>
<td>Emissions Assessment (Ozone &amp; TSP) Ch 7 pp 240-245</td>
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<td>Week 9</td>
<td>Spring Break</td>
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<td>Week 10</td>
<td>Meteorology/Dispersion</td>
<td>Ch 3 and Ch 1 pp 12-21</td>
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<td>Meteorology/Dispersion (continued)</td>
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<td>Week 11</td>
<td>Modeling</td>
<td>Ch 7 pp 245-253</td>
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<td>Modeling (continued)</td>
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<td>Week 12</td>
<td>Exam 3</td>
<td>Ch 7 pp 217-240</td>
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<td>Monitoring</td>
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<td>Monitoring (continued)</td>
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<td>Week 13</td>
<td>Stationary Source Control</td>
<td>Ch 10</td>
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<td>Week 14</td>
<td>Stationary Source Control (continued)</td>
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<td>Regulation and Public Policy</td>
<td>Ch 8</td>
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<td>Week 15</td>
<td>Regulation and Public Policy (continued)</td>
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<tr>
<td>Week 16</td>
<td>Final Exam (10:30 am – 12:30 pm)</td>
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