Course Syllabus Aerosol Technology

175:221 Fall 2010
Class Meetings: TR; 5664 BSB; 10:30AM – 11:45AM
Laboratory Meetings: as specified at the Institute for Rural and Environmental Health (IREH) on the UI Research Campus [previously Oakdale Campus]

Instructors:

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Office hours available upon request

Course Description and goals

An aerosol is an assembly of particles suspended in a gaseous medium. They are omnipresent in our workplaces and outdoor environments. They include a wide rage of phenomena such as dust, fume, smoke, mist, fog, haze, clouds, and smog. Certain aerosols pose significant health threats, while others improve the quality of our lives. It is necessary to understand how airborne particles behave to control against their undesirable effects and to harness their beneficial potential. This course will explore the mechanics of aerosol behavior, including their generation, transformation, and fate in occupational and environmental settings.

As a participant in this course you will be able to do the following:

- Define, explain, and correctly use terms and concepts used to describe the behavior of particles in a gaseous medium;
- Recognize situations where aerosol behavior may play a critical role; and
- Formulate strategies to apply these concepts in solving problems encountered in air pollution control, industrial hygiene, and industry.

Prerequisites

Students should have passed a college-level physics course and calculus through CALC3 because of the calculation-intensive nature of this course.

Reading

There is one required text for this course: Hinds, W.C. (1999) Aerosol Technology: Properties, Behavior, and Measurement of Airborne Particles, Second Edition, John Wiley and Sons, Inc.

Class notes and other useful information will be posted on Iowa Courses Online (ICON). Occasionally, articles will be referenced in class from the Journal of Aerosol Science and from Aerosol Science and Technology.

Course Requirements and Evaluation

Throughout the semester, five problem sets will be assigned to ensure that students are keeping pace with the course material. You will be given approximately two weeks to complete these assignments. They may contain calculation-based or critical thinking questions from course material covered in class and/or several questions from readings. In addition to problem sets, you should work relevant problems from the back of each chapter. Please feel free to contact me with any questions you have while doing these problems.

The amount that you learn in this course will relate directly to your ability to work problems from the problem sets and to critically interpret your answers. The midterm and final exams will be based on these problems and assigned readings.

Three lab sessions will be conducted in addition to the class lectures. Students will sign up with a partner to conduct the experiments at labs on the Oakdale Campus. Sign up times will be available on either Wednesday or Friday of the week when the lab is introduced in class. Students are encouraged to work together on the lab assignments; however, each student must submit their own final report. Specific criteria for reports will be provided when they are assigned.

The midterm exam will be taken during the normal class time, and final exam will be 2 hours in length. The exams are closed book and closed notes. Because the focus of the exam is on analytical problem solving skills rather than simple recall, each student will be allowed to bring a single, standard, 8.5 inch x 11 inch sheet of paper with notes in to the test.

Problem Sets (5 total)	20%
Laboratory Reports (3 total)	20%
In-class Midterm	25%
In-class Final Exam	35%

Submit problem sets and laboratory reports by 5 pm of the due date into drop box on ICON. I will deduct 20% per week for late problem sets or laboratory reports.

Grades will be assigned according to the following:
A 90-100
B 80-89
C 70-79
D 60-69
F < 59

Elements Required of All University of Iowa Syllabi

Administrative Home
This course is given by the College of Public Health, Department of Occupational and Environmental Health in the College of Public Health. The Department Executive Officer is Craig Zwerling: 126 IREH; 335-4415. Class policies on matters such as requirements, grading, and sanctions for academic dishonesty are governed by the College of Public Health. Students wishing to add or drop this course after the official deadline must receive the approval of the Associate Dean for Academic and Student Affairs in the College of Public Health. Details of the University policy of cross enrollments may be found at: http://www.uiowa.edu/~provost/deos/crossenroll.doc.

Electronic Communication
University policy specifies that students are responsible for all official correspondences sent to their standard University of Iowa e-mail address (@uiowa.edu). Students should check this account frequently.

Academic Misconduct
Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Education and Student Affairs. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level.

Academic Misconduct includes but is not limited to the following:

- *presentation of ideas of others without credit to the source;*
- *use of direct quotations without quotation marks and without credit to the source;*
- *paraphrasing without credit to the source;*
- *participation in a group project which presents plagiarized materials;*
- *failure to provide adequate citation for material obtained through electronic research;*
- *downloading and submitting work from electronic databases without citation;*
- *submitting material created/written by someone else as one's own, including purchased term/research papers;*
- *copying from someone else's exam, homework, or laboratory work*
- *allowing someone to copy or submit one's work as his/her own;*
- *accepting credit for a group project without doing one's share;*
- *submitting the same paper in more than one course without the knowledge and approval of the instructors involved;*
- *using notes or other materials during a test or exam without authorization;*
- *not following the guidelines specified by the instructor for a "take-home" test or exam.*

Concerns about Faculty Actions
Students who have a concern about a faculty action should first address the issue with the instructor, then the course supervisor (if there is one), and then the departmental DEO. Students may also contact the Associate Dean for Education and Student Affairs in the College of Public Health. Another resource for students is the Office of the University Ombudsperson. If a complain cannot be resolved at the departmental and/or collegiate level, students may file a formal complaint utilizing the procedure specified in the Operations Manual (II-29.7)

Understanding Sexual Harassment
Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather
In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site.