THREE RIVERS COMMUNITY COLLEGE

AIR QUALITY

Fall 2008

PROPOSED SCHEDULE

Course Title: Air Quality

Diba Khan-Bureau

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Lecture 3 hrs Laboratory 0 hrs Credit 3 hrs Contact 3 hrs

Course Description: a comprehensive overview of outdoor and indoor air quality, plus noise pollution. Topics include meteorological processes and atmospheric chemistry, sources of air pollution, ventilation, and effects of pollutants on health, wildlife, and property. Regulations, monitoring and control techniques will be discussed.

Method: Lecture, class, and home exercises, led discussion

Text: (A) Air Quality, Thad Godish, Lewis, (B) Introduction to Environmental Engineering and Science, Gilbert Masters, Prentice-Hall, and supplementary readings.

Prerequisites : Chemistry

- READING MATERIAL WILL BE FROM TEXTBOOK AND SUPPLEMENTAL MATERIAL.
- QUIZZES WILL BE BASED ON LECTURE, READING MATERIAL
- **REGULAR ATTENDANCE AND CLASS PARTICIPATION IS EXPECTED OF EACH STUDENT.**
- EXTRA CREDIT MAY BE OFFERED AS AN OPTION.

	Chapter/page	**Homework**	Hours
1. Meteorolgy and Atmospheric Dynamics	(A)chs.1,3,&4, (B)ch8, pgs453-465	(A)pg20prob.2,4,18 & 19	5
a. weather, air movement, temperature			
b. dispersion of pollutants		(A)pg91prob.1,4,5,12	
c. cleansing processes		(A)pg135prob.4,7,8	
d. units of measure/conversion factors	(A)pg639-642	&14	
2. Types of Air Pollutants	(A) ch2,13	(B)pg36prob1.14	5
a. overview of gas laws	(B)ch1	& 1.16	
b. gaseous pollutants	(B) pg327-330		
c. particulate			
d. toxic pollutants			
3. Sources of Air Pollutants	(B)pg363-380	(B)pg444 prob. 7.6	4
a. stationary sources	(B)pg405-426	& 7.15	

b. mobile sources c. line and area sources d. primary vs secondary sources	(A)ch9		
4. Effects of Air Pollutants a. health effects b. property damage c. acid precipitation and ecosystem damage	(A) ch5 & 6	4-5 page paper	4
5. Measurements of Air Quality and Emissions a. particulates b. gaseous pollutants c. ambient air monitoring d. stack sampling	(A)ch7	(B)pg447prob.7.22 & 7.23	4
6. Air Pollution Control a. control of particulates b. control of gaseous pollutants c. vehicular emissions	(A)ch 9,10	(A)pg339prob 1,3,6, & 7,8,9 paper due	5
7. Regulations a common law b. the Clean Air Act c. ambient air quality standards d. attainment vs nonattainment areas e. mobile sources f. toxic air pollutants g. implementation plans	(A)ch8	(A)pg284prob.1,4,8 & ,9,12,14	6
8. Ventilation a. air supply b. indoor air quality indicators	(A)pg374-376 (B)pg437-442	(B)pg449prob.,7.44 & 7.45	2
9. Indoor Air Pollutants a. sources b. measurement c. corrective measures	(A)ch11 (B)pg426-443	(B)pg443prob.,7.1 & 7.7	5
10. Noise Pollution a. sound concepts b. health effects c. control	(A)ch12	(A)pg404prob.1,2,7 & 8,10	5
		Total Hours:	45

The Library Research Work and Group Presentations are mandatory for a passing grade.

PLEASE NO CELL PHONE USAUGE WHILE IN CLASS!!

THERE WILL BE NO MAKE-UP OF QUIZZES WITHOUT PRIOR APPROVAL.

Late/Missed Work:

All assignments are due the following week after it has been assigned unless otherwise specified. After this time the assignment will not be accepted and you will receive a zero.

Withdrawal:

The last day to drop this class is September 15, 2008.

Incomplete:

An incomplete must be finished within 60 days of the last day of the semester.

Disabilities:

If you have a disability that may affect your class performance please come see me as soon as possible.

Cheating/Plagiarism:

Any student caught cheating or plagiarizing will receive a zero for that assignment.

Cheating is defined as the giving of assistance to another or the receiving of assistance from another person, another examination paper, other written material, or any source not explicitly permitted by the instructor, is cheating. Thus, you may not look at another's paper or answers; you may not show your paper or answers to another or leave your paper or answers around for others to look at; and, you may not verbally read or reveal your answers to another. It is also cheating to have access, without the instructor's approval, to examination, quiz, or test questions prior to the administration of the examination, quiz, or test.

Plagiarism is the submission or presentation of ideas or work in any form that are not one's own without appropriate acknowledgement of the source(s). Even with the acknowledgement, close paraphrasing can constitute plagiarism. You may quote the work of others if properly referenced.

10 Measurable Objectives

1. Students will be able to recognize the forces that drive the weather and will be able to describe the effects of weather on airborne pollutants.

2. Students will be able to distinguish between different types of air pollutants.

3. Students will be able to recognize sources of air pollution and describe differences between the types.

4. Students will be able to describe the effects of air pollution on people, property and wildlife.

5. Students will be able to propose an appropriate measurement technique for a air quality measurement need and will be able to describe the principles of those techniques.

6. Students will be able to describe the different air pollution devices and will be able to discuss the pros and cons of each.

7. Students will be able to list the major features of the Clean Air Act and other air quality laws and will be able to describe the application of the law to different sources and areas.

8. Students will be able to distinguish between adequate and inadequate ventilation schemes.

9. Students will be able to describe the major contributors to poor indoor air quality, and will be able to propose measurement techniques and control measures for each.

10. Students will be able to describe noise pollution sources, effects, measurements, and control measures.

GRADING
10% - QUIZZES (3)
20% - FINAL EXAM
15% - ASSIGNMENTS
20% - PRESENTATION
15% - ATTENDANCE AND PARTICIPATION