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ENVH 7231 - Air Quality

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Georgia Southern University
Jiann-Ping Hsu College of Public Health

ENVH 7231 –Air Quality
Spring 2018

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<u>Office Hours:</u>	Monday 3:00 pm – 5:00 pm Wednesday 2:00 am – 5:00 pm Also by appointment
<u>Web Page:</u>	http://jphcoph.georgiasouthern.edu/
<u>Class Meets:</u>	Mondays – 6:00 pm - 8:45 pm IT Building; Room # 2202

Prerequisites: N/A

Catalog Description: Introduces students to chemical, physical, and biological principles of air quality, as well as potential sources of contamination and the resulting effects. The course will also introduce environmental policies pertinent to air issues along with current remediation strategies to ameliorate pollution.

Required Textbook: Thad Godish, Wayne T. Davis, Joshua S. Fu. *Air Quality, Fifth Edition*. CRC Press; 2014; ISBN: 9781466584440

Reference Textbook: Daniel Vallero. *Fundamentals of Air Pollution, 5th Edition*. Academic Press; 2014; ISBN: 9780124017337

Environmental Health Sciences Concentration Competencies:

At the completion of this program the student will be able to:

1. Describe major environmental health hazards (physical, chemical and biological), and assess their genetic, physiologic, and socio-economic impacts on vulnerable and susceptible populations with special emphasis on rural and underserved communities.
2. Apply research ethics and current research principles, including hypothesis development, experimental design, and current research methodology, to the qualitative and quantitative measurement and analysis of environmental health hazards.
3. Apply the outcomes of environmental monitoring and environmental impact assessments to prevent, mitigate and/or forecast future exposures to environmental hazards and utilize this information to support or advocate for environmental health policy development.

4. Apply current health risk assessment methods, utilized by federal, state, and local regulatory programs, and non-governmental guidelines and authorities directed toward management of environmental hazards and provide technical assistance and leadership to address the concerns of communities including environmental justice and equity.

5. Apply current research methodology for community based intervention studies, assessing exposure to environmental factors as well as for the identification, quantification, and understanding of potential adverse effects on human health and ecosystems that might result from complex exposure to environmental stressors.

6. Communicate environmental health hazards and associated health outcomes to community, stakeholders and professional audiences through oral and written communication and community-based intervention studies.

Course Learning Objectives: The number in parenthesis corresponds to the competency number obtained from this course (from the list above) satisfied by the course learning objectives.

As a result of this course the student should be able to:

1. Select and apply appropriate tools to measure environmental hazards, particularly in the context of rural and underserved areas (1).

2. Analyze and apply the outcomes of environmental impact studies to prevent, mitigate and/or predict future exposures to environmental hazards, as well as utilize this knowledge to support and promote health policy development (5).

3. Communicate environmental health principles and concepts to lay and professional audiences through both oral and written communication (6).

Overview of the Content to be Covered During the Semester:

Week/Date	Topic	Readings	Assignment
1 01/08/18	Introduction Air Pollution Overview of Atmosphere Atmospheric meteorology Atmospheric phenomena	Text Chapters: 1, 2 (Vallero); 1, 3 (Godish et al.)	None
2 01/15/18	Holiday - Martin Luther King Jr. Day		
3 01/22/18	Atmospheric pollutants (natural, anthropogenic, scales)	Text Chapters: 3, 4 (Vallero); 2 (Godish et al.)	None
4 01/29/18	Indoor air pollutants	Text Chapters 26.1 (Vallero); 11 (Godish et al.); handouts	Field exercise: In-home or ambient air quality assessment

5 02/05/18	Exam #1 (In-Class/Home)	None	None
6 02/12/18	Atmospheric effects of pollutants	Text Chapter 4 (Godish et al.)	Present scientific article
7 02/19/18	Health effects of pollutants	Text Chapters: 9, 10, 11, 12, 13 (Vallero); 5 (Godish et al.)	None
8 02/26/18	Air/Soil contamination and impact on ecosystems	Text Chapters 14 (Vallero); 6 (Godish et al.)	Present scientific article
9 03/05/18	Exam #2 (In-Class/Home)	None	None
10 03/12/18	SPRING BREAK – ENJOY!!!		
11 03/19/18	Global Warming & Climate Change	Review articles and/or handouts	Present scientific article
12 03/26/18	Regulation and public policy	Text Chapter: 8 (Godish et al.)	Present scientific article
13 04/02/18	Air pollution monitoring and surveillance	Text Chapters: 25 (Vallero); 7 (Godish et al.)	Present scientific article
14 04/09/18	Air quality criteria and standards – Conversion of data and criteria to standards; Biological air pollutants	Text Chapter: 26 (Vallero) & other references	Present scientific article
15 04/16/18	Control of pollutants	Text Chapters: 30, 31 (Vallero); 9, 10 (Godish et al.)	Present scientific article
16 04/23/18	Report submission – Indoor or Outdoor Air Quality Assessment Findings; Discussion on reports (online); Presentations on air quality assessment	None	None <i>Submit final report on assessment by 8:45 PM (Folio discussion board)</i>
17 04/30/18	Final Exam (6:00pm; IT building, room # 2202) (In-Class/Home)	None	<i>Submit final exam</i>

Samples of your work may be reproduced for search purposes and/or inclusion in the professor's teaching portfolio. You have the right to review anything selected for use, and subsequently ask for its removal.

Instructional Methods: Class meetings will be a combination of:

- (1) Lecture
- (2) In class discussions of current scientific literature and topics of global relevance
- (3) Examinations/In class practice exercises

Written homework assignments, class presentations, and examinations constitute the basis of student evaluation.

Final Examination: **Monday, April 30, 2018; 6:00 PM**

Grading: Weighting of assignments for purposes of grading will be as follows:

<i>Assignments</i>	<i>Learning Objective</i>	<i>Points</i>
In-home environmental/air quality assessment (report)	1-4; 8-15	80
Exam #1	1-4; 9-12	80 (in class: 55; in home: 25)
Exam #2	1-4; 9-12	80 (in class: 55; in home: 25)
Student in-class lead discussion on air quality related topics during presentations	1-15	20
Formal class presentations on scientific articles (3 articles: 3 x 15 = 45 points) and in-home air quality assessment (15 points)	1-15	60
Final exam	1-15	80 (in class: 40; in home: 40)

The following point scale will be utilized in grading:

360-to-400 points	(90%)	A
320-to-359 points	(80%)	B
280-to-319 points	(70%)	C
240-to-279 points	(60%)	D

For calculation of your final grade, all grades above will be included.

Your grades **will not** be posted. All exams and assignments will be graded using a rubric and returned promptly so that students may accurately calculate their grades at any point in time during the semester.

No assignments will be re-graded. The grade obtained when graded once will be your grade for that assignment. **ALL GRADES ARE FINAL.**

Any assignments submitted AFTER the due date and time, will NOT be graded.

There are times when extraordinary circumstances occur (e.g., serious illness, death in the family, etc.). In such circumstances, and/or if you need additional time to satisfactorily complete any course requirement, please consult with the instructor within a reasonable amount of time. *Nota Bene:* Extensions are not guaranteed and will be granted solely at the discretion of the instructor.

Academic Misconduct: As a student registered at this University, it is expected that you will adhere to only the strictest standards of conduct. It is recommended that you review the latest edition of the *Student Conduct Code* book, as well as the latest *Undergraduate & Graduate Catalog* to familiarize yourself with the University's policies in this regard. Your continued enrollment in this course is an implied contract between you and the instructor on this issue; from this point forward, it is assumed that you will conduct yourself appropriately.

Academic integrity relates to the appropriate use of intellectual property. The syllabus, lecture notes, and all materials presented and/or distributed during this course are protected by copyright law. Students are authorized to take notes in class, but that authorization extends only to making one set of notes for personal (and no other) use. As such, students are not authorized to sell, license, commercially publish, distribute, transmit, display, or record notes in or from class without the express written permission of the instructor.

"According to the Academic Dishonesty Policy of GSU, **plagiarism** includes (but is not limited to):

- A. Directly quoting the words of others without using quotation marks or indented format to identify them.***
- B. Using published or unpublished sources of information without identifying them.***
- C. Paraphrasing material or ideas without identifying the source.***
- D. Unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material.***

If you are accused of plagiarism by a JPHCOPH faculty, the following policy, as per the Judicial Affairs website will be enforced: (<http://students.georgiasouthern.edu/judicial/faculty.htm>)

PROCEDURES FOR ADJUDICATING ACADEMIC DISHONESTY CASES

First Offense - In Violation Plea

1. If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is a first violation of academic dishonesty. The incident will be reported via the following website:

<http://students.georgiasouthern.edu/judicial/faculty.htm>

2. If it is a first violation, the professor should talk with the student about the violation. If the student accepts responsibility in writing and the professor decides to adjudicate the case, the following procedures will be followed:
 - a. The student will be placed on disciplinary probation for a minimum of one semester by the Office of Judicial Affairs.
 - b. The student will be subject to any academic sanctions imposed by the professor (from receiving a 0 on the assignment to receiving a failing grade in the class).
 - c. A copy of all the material involved in the case (Academic Dishonesty Report Form and the Request For Instructor to Adjudicate Form) and a brief statement from the professor concerning the facts of the case and the course syllabus should be mailed to the Office of Judicial Affairs for inclusion in the student's discipline record.

First Offense - Not In Violation Plea (student does not admit the violation)

If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is the first or second violation of academic dishonesty. The student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:

1. The student will be placed on Disciplinary Probation for a minimum of one semester by the Office of Judicial Affairs.
2. The student will be subject to any academic sanctions imposed by the professor.

Second Violation of Academic Dishonesty

If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, and if it is determined this is the second violation, the student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:

1. Suspension for a minimum of one semester or expulsion
2. The student will be subject to any academic sanctions imposed by the professor.

NOT RESPONSIBLE FINDING

When a student is found not responsible of academic dishonesty, the work in question (assignment, paper, test, etc.) would be forwarded to the Department Chair. It is the responsibility of the Department Chair to ensure that the work is evaluated by a faculty member other than the

individual who brought the charge and, if necessary, submit a final grade to the Registrar. For the protection of the faculty member and the student, the work in question should not be referred back to the faculty member who charged the student with academic dishonesty.

In the case of a Department Chair bringing charges against a student, an administrator at the Dean's level will ensure that the student's work is evaluated in an appropriate manner.

Academic Handbook: Students are expected to abide by the Academic Handbook, located at <http://students.georgiasouthern.edu/sta/guide/>. Your failure to comply with any part of this Handbook may be a violation and thus, you may receive an F in the course and/or be referred for disciplinary action.

University Calendar for the Semester: The University Calendar is located with the semester schedule, and can be found at:
<http://students.georgiasouthern.edu/registrar/Spring2007.html>

Attendance Policy: Federal regulations require attendance be verified prior to distribution of financial aid allotments. Attendance will not be recorded after this initial period.

One Final Note: The contents of this syllabus are as complete and accurate as possible. *The instructor reserves the right to make any changes necessary to the syllabus and course material.* The instructor will make every effort to inform students of changes as they occur. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course.