

**Syllabus**  
**Environmental Monitoring and Analysis**  
**Fall 2012**

**Time:** Tuesday 9:00-11:00 and Thursday 9:00-Noon

**Location:** Class Location: Drachman Hall, Room A119  
Lab Location: MRB 130 – Lutz Lab  
BRL Room B-111

**Instructor:** Eric A. Lutz, PhD (Course Coordinator)  
MEZCOPH/CEP - EOH

**Office:** MRB, Room 113

**Phone:** 520-398-1638

**Email:** [ealutz@email.arizona.edu](mailto:ealutz@email.arizona.edu)

**Office Hours:** By appointment – communication by email is best.

**Teaching Assistant:** Kerton Victory

**Office:** MRB, EOH Cubes outside Room 113

**Email:** [kerton2@email.arizona.edu](mailto:kerton2@email.arizona.edu)

**TA Office Hours:** Tuesday 11:00AM - 1:00PM  
Thursday 1:00PM – 3:00 PM  
Or, by appointment

**Catalog Description:** Environmental Monitoring and Analysis

**Course Description:** Introduction to multi-media sampling techniques and analytical methods for evaluation outdoor/indoor air, soil/surfaces, and water. The course will cover environmental science and industrial hygiene approaches for anticipating, recognizing, evaluating, and controlling hazards, with the primary focus on recognition and evaluation of contaminants, including data interpretation for risk reduction and regulatory compliance. The course will also emphasize environmental investigative techniques, instrument selection, and quality control, including documentation, calibration, and sample management.

**Course Prerequisites:** CPH 584 concurrently, or permission of the instructor.

**Course Learning Objectives:** Monitoring is critical to the assessment of environmental hazards, whether those environments are outdoors, indoors, at work, or at home. Standard sampling and analytical techniques have been developed to assess contaminant levels for a variety of media, including water, air, and living systems (bio-markers and microbiology). While techniques for sampling are, in general, fairly standard, new analytical methods are also developed when existing methods are insufficient to quantify contaminant levels. This course will provide an introduction to multi-media sampling techniques and analytical methods for evaluation outdoor/indoor air, soil/surfaces, and water.

**MPH/Section Competencies Covered:** Analytical skills, including defining a problem, determining appropriate uses and limitations of data, selecting and defining variables relevant to the problem, evaluating the integrity and comparability of data, and identifying gaps, understanding how data illuminates ethical, political, scientific, economic, and overall public health issues, understanding basic research designs, and making relevant inferences from data; communication skills, communicating effectively both in writing and orally, interpreting and presenting accurately and effectively scientific information, soliciting input from stakeholders, leading and participating in groups, and using multi-media methods to communicate; policy and development, identifying public health laws, regulations, and policies, developing mechanisms to monitor and evaluate programs; cultural skills interacting competently, respectfully, and professionally with persons from diverse backgrounds, developing and adapting approaches to public health problems that consider cultural differences; basic public health science skills, defining, assessing, and understanding the health status of population and determinants of health and illness, and understanding EOH research methods; financial planning and management skills, developing strategies for determining priorities, and monitoring programs.

**Class Materials:** All materials will be provided on the D2L site at [www.d2l.arizona.edu](http://www.d2l.arizona.edu). You are required to be prepared and participate fully in all classes and labs. Assignments should be read prior to respective lecture and lab times. Pre-lab preparations should include practicing the posted calculations, otherwise it is very unlikely that you will complete the laboratory activities in the time allotted.

**Recommended Texts/Readings:** No text book is required. All required materials will be made available on D2L. However, the following books are recommended, depending on your discipline and career goals:

- Occupational Health and Air Pollution – “Air sampling instruments for evaluation of atmospheric contaminants” (ISBN-13:978-1 88241 7087) Amazon \$120.
- Water Quality – “Standard Methods for the Examination of Water and Wastewater” 21<sup>st</sup> Ed. 2005 APHA, AWA, WE \$185 (purchase through instructor to get discount).
- Microbiology – “Manual of Environmental Microbiology” 3<sup>rd</sup> Ed. Hurst 2007, \$160.

**Class Attendance/Participation:** When in class, you are expected to participate fully. You are expected to submit assignments on time. You will be asked to provide an email address: The D2L website has web mail postings specific to this course. Check both your UA and D2L email frequently as the instructor/TA may communicate to either account.

**Grading/Student Evaluation:** Student evaluations will be made based on accumulation of points for Lab Reports, and a Final Paper, as follows:

Deliverables	Available Total	% of Grade
Lab Reports (minimum 3 pages, maximum 5 pages) 6 Reports at 1 points each	6	38%
Final Report Paper (minimum 10 pages)	10	63%

Grades Awarded	Accumulated Point Range for Grade
A	$\geq 14$
B	11 - 13
C	6-10
E	$\leq 7$

Except for emergency situations (e.g., medical, supported by appropriate documentation), **late Reports will receive zero points. All Reports are due 1 week following their assignment date, as follows**, with the exception of the Final Report.

Report	Assignment Date	Due Date
Outdoor Air, 3-5 pgs	6-Sep	13-Sep
Soil, 3-5 pgs	20-Sep	27-Sep
Ground/Surface Water, 3-5 pgs	4-Oct	11-Oct
IAQ , 3-5 pgs	18-Oct	25-Oct
Fomite, 3-5 pgs	1-Nov	8-Nov
Potable Water, 3-5 pgs	15-Nov	29-Nov
Final Report, $\geq 10$ pgs	21-Aug	4-Dec

All reports are required to contain background, methods, results, and discussion sections and a thorough and appropriate bibliography. Tables, graphs, and illustrations are highly encouraged. Reports should be submitted as editable Microsoft Word files, double spaced, Times New Roman font size 12, and contain line numbers. All stylistic formatting must follow the current APA guidelines.

**UPDATED Course Schedule: CPH 502**

Month	Day	Lecture	Day	Lab
August	21	Intro	23	Intro – Calibrtn
	28	Air	30	Air
September	4	Anticipating	6	Air
	11	Soil	13	Soil
	18	Recognizing	20	Soil - ALEC
	25	Water	27	Water
October	2	Evaluating	4	Water
	9	Fomites - KV	11	Fomite - KV
	16	IAQ	18	Fomite - KV
	23	Controls -KV	25	IAQ – Betterton
	30	NO CLASS	1	Biomarkers - SL
November	6	Potbl Water	8	Potbl Water
	13	Calc's-KV	15	Potbl Water
	20	NO CLASS	22	NO CLASS
	27	Review	29	WWTP Tour
December	4	FINAL PAPER DUE		

**Required Statements:**

**Communications:** You are responsible for the information provided during class and laboratory sessions. You are responsible for reading emails sent to your UA account from your professor and the announcements that are placed on the course web site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods or verbally in class. The official policy can be found at:

<http://www.registrar.arizona.edu/emailpolicy.htm>.

**Disability Accommodation:** If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Resources (621-3268; [drc.arizona.edu](http://drc.arizona.edu)) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. The official policy can be found at: <http://catalog.arizona.edu/2008%2D09/policies/disability.htm>.

**Academic Integrity:** All UA students are responsible for upholding the University of Arizona Code of Academic Integrity, available through the office of the Dean of Students and online: The official policy found at: <http://deanofstudents.arizona.edu/codeofacademicintegrity>.

**Classroom Behavior:** (Statement of expected behavior and respectful exchange of ideas)

The Dean of Students has set up expected standards for student behaviors and has defined and identified what is disruptive and threatening behavior. This information is available at: <http://deanofstudents.arizona.edu/disruptiveandthreateningstudentguidelines>.

Students are expected to be familiar with the UA Policy on Disruptive Behavior in an Instructional Setting found at <http://web.arizona.edu/~policy/distuptive.pdf> and the Policy on Threatening Behavior by Students found at <http://web.arizona.edu/~policy/threatening.pdf>.

**Grievance Policy:** Should a student feel he or she has been treated unfairly, there are a number of resources available. With few exceptions, students should first attempt to resolve difficulties informally by bringing those concerns directly to the person responsible for the action, or with the student's graduate advisor, Assistant Dean for Student and Alumni Affairs, department head, or the immediate supervisor of the person responsible for the action. If the problem cannot be resolved informally, the student may file a formal grievance using the Graduate College Grievance Policy found at <http://grad.arizona.edu/academics/policies/academic-policies/grievance-policy>.

**Grade Appeal Policy:** <http://catalog.arizona.edu/2011-12/policies/gradappeal.htm>

**Syllabus Changes:** Information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the lead instructor.

**Telephone and Computer Use:** You are not allowed to have your computer "on" during class, unless expressly permitted by the instructor. Turn your cell phones to silent or vibrate in order to not disrupt the class and disturb your fellow students and professor.

**Plagiarism:** Plagiarism in any form will not be tolerated. All submitted work will be screened using Turn It In.com (or similar). Any submitted document exceeding a total of 30% "match" and/or 10% from any single source will result in an automatic zero for that submission.

What counts as plagiarism?

- Copying and pasting information from a web site or another source, and then revising it so that it sounds like your original idea.
- Doing an assignment/essay/take home test with a friend and then handing in separate assignments that contain the same ideas, language, phrases, etc.
- Quoting a passage without quotation marks or citations, so that it looks like your own.
- Paraphrasing a passage without citing it, so that it looks like your own.
- Hiring another person to do your work for you, or purchasing a paper through any of the on- or off-line sources.