

University of Florida
College of Public Health & Health Professions Syllabus
Aquatic Systems & Environmental Health (PHC 6301; 3 credit hours)

Semester: Spring 2021

Delivery Format: Hybrid: Online content delivery with 1 hour weekly class meetings

Weekly synchronous class meetings: Tuesdays, Period 9 (4:05-4:55pm)

Course materials accessed through Canvas

Instructor Name: Andy Kane
Room Number: Room 101, Building1379
Dr. Kane Contact: 273-9090 (office); 213-8407 (cell); KANE@UFL.EDU
Office Hours: By appointment
Preferred Course Communications: Canvas

Prerequisites: One year each of college-level biology and chemistry.

PURPOSE AND OUTCOME

Course Overview

This online, team-taught course will provide an overview of aquatic resources including oceans, estuaries, rivers, lakes, streams and ponds, with focus on respective biotic communities and environmental health. We will address the physical and chemical nature of water, and the hydrologic cycle in order to understand water and land usage, and examine contaminant fates and effects in different ecosystems. The course will provide a taxonomic and ecological summary of aquatic biota, from algae and invertebrates to vertebrates and pathogens. A case study approach will be used to provide resources pertaining to contaminant input, other anthropogenic activities, harmful algae, and changes in the environment such as climate change. Biotic indices of environmental change, including application of bioindicators, will be discussed and evaluated relative to both environmental and human health.

Relation to Program Outcomes

Aquatic Systems and Environmental Health (ASEH) examines freshwater, estuarine and marine systems to support further, in-depth studies and understanding of the different sciences that examine aquatic systems ranging from chemistry, toxicology, pathology, parasitology, microbiology, fisheries biology and management, climatology, hydrology, policy, communications, epidemiology, and statistics. An integration of these constructs provides needed insights into species- and systematic biology and the dynamics of our changing environment to build working a vocabulary to understand aquatic systems from an environmental and public health perspective.

Course Objectives and/or Goals

1. Discriminate between the different types of aquatic environments and respective biota; conceptualize form and function in aquatic biota to discern an organism's ecological niche and potential susceptibility to environmental stressors;
2. Mastery of common terminology used to describe water quality and aquatic systems;
3. Describe biological and water quality factors that influence environmental contaminant exposure, uptake and toxicity to aquatic organisms;

4. Interpret outcomes, in a broad sense, of natural and anthropogenically-accelerated environmental change in aquatic resources, including resource-dependent human communities;
5. Describe sources, and mechanisms, of infection for various waterborne diseases;
6. Describe common classes of environmental contaminants that can enter aquatic systems and understand the mechanism by which a variety of biota may be affected;
7. Critically review scientific literature pertinent to aquatic and environmental health; and
8. Organize and present well-synthesized scientific discussions, using oral, written and visual formats, on topics relevant to aquatic biology, and environmental and public health.

Instructional Methods

General information: This course has no required textbooks. Course content is derived primarily from online course modules within Canvas, as well as materials contributed by *you* as part of the "course community."

Announcements, assignments, discussions, examinations and grading also take place through UF's learning platform and interface, Canvas.

You will need a WiFi-enabled computer with sufficient RAM, hard disk memory and processing speed to access web content in the form of text, pdf files, PowerPoint files and YouTube movies. Your computer should have a built-in camera and microphone, or an externally connected camera and microphone, to engage in weekly meetings that bring on- and off-campus students together for discussions, presentations and field excursions! Slow or intermittent internet access speed can be frustrating and corrupt file transfers, and possibly affect taking exams. It is your responsibility to ensure that your internet connectivity is functional and sufficient to engage with course content and materials.

The class meets live for one class period each week throughout the semester. Weekly synchronous (live) meetings are scheduled for Tuesday afternoons using Zoom, Period 9 (4:05-4:55pm) for all class registrants. Students wanting to attend synchronous class gatherings in person with the instructor will meet in Room 101, Building 1379. On-campus meeting location may change based on number of students attending in-person, and possible planned excursions.

Access URL for the class Zoom Room: *to be posted* prior to 1/11/21.

What is expected of you?

You are expected to actively engage in the course throughout the semester. You must keep up with course content and assignments as the course progresses throughout the semester in order to participate in classroom discussions. Your participation in discussions fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives. To foster engagement and interaction, the instructor asks that students maintain their video presence during the synchronous, weekly class Zoom meetings.

DESCRIPTION OF COURSE CONTENT: COURSE SCHEDULE

This course is taught as a series of modules, covering different aspects of communications styles and approaches. Each set of modules may contain lectures, external links, videos, discussions and required readings, as well as assignments. You are responsible for all course content regardless of the format. The topical Outline/Course Schedule below details the dates of content modules and assignments. This schedule is tentative based on guest lecturers and field opportunities that may alter the dates/timing of some content delivery throughout the course.

Modules	Topic(s)
1 (Week of 1/11)	Introductions of class participants, topical course content, assignments, expectations
2 (Week of 1/18)	Water properties, water chemistry; ocean acidification
3 (Week of 1/25)	Hydrogeology, watershed contamination
4 (Week of 2/1)	Aquatic insect taxonomy and ecology
5 (Week of 2/8)	Aquatic vectors and diseases
6 (Week of 2/15)	Article presentations, communication tools to support student presentations
7 (Week of 2/22)	Midterm Exam
8 (Week of 3/1)	Aquatic algae and vascular plants, harmful algal blooms
9 (Week of 3/8)	Aquatic birds and fishes
10 (Week of 3/15)	Outcomes of aquatic stressors
11 (Week of 3/22)	Aquatic microbiology
12 (Week of 3/29)	Climate change
13 (Week of 4/5)	Student Presentations
14 (Week of 4/12)	Student Presentations
15 (Week of 4/19)	Final Exam

Course Materials and Technology

Handouts for lectures and other reading materials will be distributed in class, via email and the course Canvas shell. Students must have the ability to capture photographs (from their personal digital camera or cell phone) to support their presentation projects throughout the course. Students without a functional digital camera or camera-capable phone can request a digital camera loan from the instructor during the first week of class. Students are expected to have regular access to a computer with internet access and MS Office applications installed.

For technical support for this class, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

ACADEMIC REQUIREMENTS AND GRADING

Assignments

Each module provides follow-up materials, homework assignments, reports, projects or discussion input. These assignments will be graded broadly based on on-time submission (10%), following instructions to provide specific content assigned (65%), and the quality, creativity and context of the content (25%). Student presentation topics will be chosen within the first 3 weeks of the course, and grading will be based on attendance and participation in synchronous class meetings, assignments and presentations, and two exams. Further details on expectations and grading will be provided during the first live class session.

Grading (general):

Requirement	Due date	% of final grade (% must sum to 100%)
Attendance & participation (live sessions)	All sessions	5%
Assignments, homework	All modules	25%
Midterm Exam	February 15	25%
Student Presentation	February 28	20%
Final Exam	April 7	25%

Point system used (i.e., how do course points translate into letter grades).

Points earned	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	Below 60
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Letter grade to grade point conversions are fixed by UF and cannot be changed. *Please be aware that a C- is not an acceptable grade for graduate students. In addition, a grade of C counts toward a graduate degree only if an equal number of credits in courses numbered 5000 or higher have been earned with an A.*

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For additional detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at: <http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Exam Policy

Midterm and final exams will be accessible online through the course canvas website.

Policy Related to Make up Work

Any requests for make-ups or late submittal due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date

of the problem. You **MUST** e-mail the instructor immediately at the time of technical difficulty if you wish to request a make-up. Make-up exams that are needed due to illness or emergencies must be documented, and communication with the instructor by email is required prior to the exam opening or as soon as possible at the onset of documented serious illness or emergency.

Policy Related to Required Class Attendance

Attendance is required for all live classes held on Monday afternoons, as scheduled. Students are expected to attend (in-person for on-campus students, and via Zoom for online students) all classes on time, and be prepared to participate in all class activities. Unexcused absences without prior communication with the instructor, and late assignment submissions, will affect a portion of your grade. Students who cannot attend a class meeting are expected to access missed class content from another student in the class and turn in assignments by posted due dates. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis. All faculty are bound by the UF policy for excused absences.

Excused absences must be consistent with university policies in the Graduate Catalog (<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance>) and require appropriate documentation. Additional information can be found here: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Expectations Regarding Course Behavior

Everyone is expected to engage with the course and fellow participants in a civil tone, and be respectful and supportive of others.

Communication Guidelines

Unless otherwise stated, assignments are submitted by uploading into the course Canvas site. Direct communication with the instructor should be addressed to the instructor's UF email address (KANE@UFL.EDU). Please reach out to the instructor directly for clarification and assistance with any of the course material or assignments, and for special issues that may arise. Weekday morning (US Eastern Time) emails have the best chances of being answered quickly (i.e., within 24 hours).

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: **"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Policy Related to Guests Attending Class:

Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. Therefore, by exception, a department chair or his or her designee (e.g., instructors) may grant a student permission to bring a guest(s) for a total of two class sessions per semester. This is two sessions total across all courses. No further extensions will be granted. Please note that guests are **not** permitted to attend either cadaver or wet labs. Students are responsible for course material regardless of attendance. For additional information, please review the Classroom Guests of Students policy in its entirety. Link to full policy: <http://facstaff.php.ufl.edu/services/resourceguide/getstarted.htm>

SUPPORT SERVICES

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:
Alachua County Crisis Center:
(352) 264-6789
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

Inclusive Learning Environment

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu