

University of Florida
College of Public Health & Health Professions Syllabus
PHC 6446: Systems Thinking in One Health

Fall 2024

Delivery Format: Online with Weekly Discussion Session

Weekly Online Discussion Session, T (4:05pm-4:55pm)

Zoom Link: <https://ufl.zoom.us/j/92194601081>

Canvas Site: <https://ufl.instructure.com/courses/521997>

Instructor Name: Benjamin Anderson, MPH, PhD, CPH

Room Number: EPI 115

Phone Number: (352) 273-9572

Email Address: ander88@ufl.edu

Office Hours: T (3:00 PM – 4:00 PM) or by appointment

Teaching Assistants: N/A

Preferred Course Communications: Inbox in Canvas

Prerequisites

There are no prerequisites for this course other than a passion for learning and a desire to engage colleagues in thoughtful and respectful conversations around the course topics.

PURPOSE AND OUTCOME

Course Overview

In this course, students will engage in a dynamic learning environment to understand how systems thinking can be used to uncover the root causes of complex health problems at the human, animal, and environmental interface, and to identify leverage points where small interventions can lead to significant changes.

Relation to Program Outcomes

Systems Thinking is deemed a core competency of the One Health approach, which employs interdisciplinary problem-solving at the human, animal, and environmental interface. This course is specifically part of the **Core Concentration** requirements of the MHS in One Health and the PhD in Public Health (One Health Concentration) degree programs. Successful completion of this course fulfills the Systems Thinking learning objective.

Course Objectives and/or Goals

The goal of this course is to learn and apply Systems Thinking strategies to ultimately mitigate complex health problems at the human, animal, and environmental interface (One Health).

At the end of this course, you will be able to:

1. Introduce the concept of Systems Thinking as it relates to the One Health Approach.
2. Identify the underlying structures, behaviors, and dynamics of different types of complex systems.
3. Explore the relationship between structural and functional elements of a system.
4. Apply mapping techniques (Causal Loop Diagram, Social Network Analysis, etc.) to visualize interconnections and feedback loops within and across various systems.
5. Design mitigation and evaluation strategies targeted at leverage points within a system to maximize effective change.

6. Critically analyze the scientific literature on Systems Thinking.
7. Communicate Systems Thinking concepts effectively with peers.

Instructional Methods

This course will be delivered online with one weekly live synchronous session. The activities carried out in the synchronous discussion sessions will supplement the online learning instruction that will be delivered through the Canvas course site. Synchronous sessions are meant to be highly interactive and provide a space for students to critically discuss the course concepts with their peers. While it is expected that all students attend the synchronous discussion sessions, some accommodations may be made on a case-by-case basis for students who cannot attend due to work schedule conflicts. If this applies to you, please notify me by e-mail at the start of the course.

Blended Learning

What is blended learning and why is it important?

A Blended Learning class uses a mixture of online asynchronous and synchronous instruction to help you maximize your learning. Knowledge content that, as the instructor, I would have traditionally presented during a live class lecture is instead provided online before the live class takes place. This lets me focus synchronous class time on course activities designed to help you strengthen higher order thinking skills such as critical thinking, problem solving, and collaboration. Competency in these skills is critical for today's health professionals.

What is expected of you?

You are expected to actively engage in the course throughout the semester. You must come to synchronous discussion sessions prepared by completing all out-of-class assignments (via Canvas). This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the synchronous sessions, you may struggle to keep pace with the course, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live sessions. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

DESCRIPTION OF COURSE CONTENT

Course Materials and Technology

There is no required textbook for this course. All readings will be made available through the Canvas course site.

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

- helpdesk@ufl.edu
- (352) 392-HELP - select option 2
- <https://helpdesk.ufl.edu/>

Additional Academic Resources

[Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

[Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources.

[Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

[Writing Studio](#): 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)

On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)

ACADEMIC REQUIREMENTS AND GRADING

Assignments

Modules – *This is the asynchronous component of the course.* Every two weeks, a new module will be released via Canvas, which you can access by the ‘Modules’ tab on the left-hand side of the course site menu. Module content will include assigned videos and readings on topics that will frame class discussions and activities. When it is noted, you should work towards completing an assigned video and reading prior to the synchronous discussion session for which a corresponding activity is planned.

Synchronous Discussion Sessions – There will be one online synchronous session scheduled each week via Zoom. Synchronous sessions will focus on discussion and activities that correspond to the asynchronous content of each module.

Application Exercises – For each module, you will be asked to complete an individual application exercise. For these assignments, you will be asked to practice applying a knowledge concept or skill covered in class or in the reading. For example, this might include completing a network map of a complex issue or completing a multisectoral stakeholder analysis. Each application exercise will require a written summary of the applied method. These will be graded on a standard rubric.

Discussion Boards – For each module, one question will be posted on the Discussion section of the Canvas course site that you will be required to respond to. In addition, you will respond to at least two posts from your classmates. The purpose of this activity is to extend the discussion of module topics beyond the classroom and provide opportunity to practice communicating your ideas in written format.

Quizzes – There will be no midterm or final exam in this class. Instead, there will be a quiz for each module throughout the course (7 in total) via Canvas. Questions may be multiple choice, true/false, and/or short answer, and will cover topics from both assigned videos/readings. Quizzes are to be completed independently, but you may refer to your notes and assigned readings. **Chat GPT is not permitted in completing your quiz responses.**

Simulation Intervention Presentation – In week 15, you will conduct a simulation of a complex health issue and be asked to design an intervention that builds upon the systems thinking concepts and activities conducted throughout the course. This simulation will culminate in a presentation structured as an emergency session of the world health assembly that will be recorded and uploaded to the course website.

Grading

Requirement	Due date	% of final grade
Application Exercises (7 total)	See Course Schedule	35%
Discussion Boards	See Course Schedule	10%
Quizzes (7 total)	See Course Schedule	35%
Simulation Intervention Presentation	See Course Schedule	20%

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

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

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

Please be aware that a C- is not an acceptable grade for graduate students. The GPA for graduate students must be 3.0 based on 5000 level courses and above to graduate. A grade of C counts toward a graduate degree only if based on credits in courses numbered 5000 or higher that have been earned with a B+ or higher.

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>

Please note: Any requests for make-ups due to technical issues MUST be accompanied by the UF Computing help desk (<http://helpdesk.ufl.edu/>) correspondence. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

Policy Related to Required Class Attendance

Assignments turned in up to 24 hours late (from 11:59PM of the day the assignment was due) will be discounted 10% of the grade that they would otherwise receive. Assignments turned in more than 24 hours late will not be graded and will contribute zero points toward your final grade unless arrangements have been made in advance with the instructor. Missed assignments will contribute zero points toward your final grade.

Please note all faculty are bound by the UF policy for excused absences.

Excused absences must be consistent with university policies in the Graduate Catalog (<https://catalog.ufl.edu/graduate/regulations/#text>). 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

You are expected to maintain a civil tone and respect the opinions of other persons. While commenting on others' posts is encouraged, aggressive or patronizing tone and language are unacceptable and may result in the loss of your posting and discussion privileges.

Communication Guidelines

You are required to contact the professor by email using the "Inbox" in Canvas for clarification and assistance with the course material and the assignments, and for special issues that may arise. Weekday daytime (US Eastern Time) emails have the best chances of being answered quickly. Please only use the Canvas "Inbox" to communicate with the course instructor and/or TA. While the instructors and TAs will check their UFL email regularly, they will not be held responsible for email sent directly to their UFL addresses.

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.

Recording Within the Course:

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

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: <https://phhp.ufl.edu/policy-classroom-guests-of-students/>

Online Faculty Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

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.
- **U 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>
- **University Police Department:** [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- **UF Health Shands Emergency Room / Trauma Center:** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website.](#)

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

Topical Outline/Course Schedule

Week	Date(s)	Topic(s)	Assignments/Readings
Module 1 – Introduction to Systems Thinking and One Health			
1	8/26-8/30	Introduction to Systems Thinking and One Health	See Canvas
2	9/02-9/06	Systems Thinking Methodology	Quiz 1 Due Application Exercise 1 Due
Module 2 – Health and Healthcare Systems			
3	9/09-9/13	Defining Health; Global Health Systems	See Canvas
4	9/16-9/20	Comparative Case Studies	Quiz 2 Due Application Exercise 2 Due
Module 3 – Food Systems			
5	9/23-9/27	Globalization of Food Supplies; Food Insecurity and Health	See Canvas
6	9/30-10/04	Future of Food Production	Quiz 3 Due Application Exercise 3 Due
Module 4 – Biodiversity and Emerging Disease Hotspots			
7	10/07-10/11	Impact of Climate Change on Biodiversity; Emerging Infectious Diseases	See Canvas
8	10/14-10/18	Future Models of Pandemic Preparedness	Quiz 4 Due Application Exercise 4 Due
Module 5 – Social, Political, and Economic Determinants of Health			
9	10/21-10/25	Theories of Social Determinants; Inequity and Health Outcomes	See Canvas
10	10/28-11/01	Health Equity Frameworks	Quiz 5 Due Application Exercise 5 Due
Module 6 – Applying Systems Thinking			
11	11/11-11/15	Application of Systems Thinking in One Health	See Canvas
12	11/18-11/22	Case Study	Quiz 6 Due Application Exercise 6 Due
Module 7 – Applying Systems Thinking to a Health Intervention			
13	11/20-11/24	Health Intervention Strategies	See Canvas
14	11/25-11/29	HOLIDAY – Thanksgiving	Quiz 7 Due Application Exercise 7 Due
15	12/02-12/04	Simulation Intervention Presentations	Simulation Intervention Presentation Due