BIME 533/HSERV 509 Winter 2021

Tues and Thurs 1:30 pm-2:50pm

Zoom: https://washington.zoom.us/j/99521619050

Canvas URL: https://canvas.uw.edu/courses/1433549

Course Instructor:

Anne M. Turner, MD, MLIS, MPH, Professor, Dept. of Health Services, SPH, and Dept. of Biomedical and Health Informatics, SOM (amturner@uw.edu) Office phone 206-221-3615

Course Description:

Public Health and Informatics is a 3-unit graduate-level core course designed to provide an overview of the discipline of public health informatics. Public Health and Informatics is one of four informatics domain core courses taught in the Biomedical and Health Informatics (BHI) graduate program. When viewing health as a spectrum from populations to the molecular, Public Health and Informatics is the broadest of the four domains. The other three informatics domains are Consumer Health Informatics, Clinical Informatics, and Bioinformatics. PHI encompasses population health, epidemiology, surveillance health promotion, disease prevention, environmental health, and global health. (why is this topic important?)

We will cover topics designed to provide you with background about public health including the history and structure of public health, disease surveillance, environmental health, health communications, data quality, privacy and security, and global health informatics.   Information systems and tools relevant to public health will be explored. You will learn how to evaluate a public health surveillance system and develop a public health dashboard to monitor the health of the community. Informatics issues, such as data vocabulary and messaging standards (including FHIR), syndromic surveillance systems, policy, privacy and security, interoperability, data integration, risk factor data, social determinants of health, health information exchange, and ethical issues of particular importance to public health will be discussed. The course content will be delivered through a combination of didactic lectures, case presentations, break-out exercises, and discussions. Students will gain experience in investigating and evaluating informatics solutions to public health problems.

Prerequisites: BIME 530 or permission of the instructor

Course Objectives:

At the completion of the course, students will be able to:

1. Describe the mission and practice of public health
2. Describe fundamental informatics principles and their application to public health
3. Apply the public health approach to a public health problem
4. Assess the source and quality of public health data
5. Evaluate population studies in terms of data source and quality
6. Define and describe current public health surveillance
7. Evaluate a public health surveillance system based on the CDC Evaluation guidelines
8. Identify, define and describe risk factors and social determinants of health for a defined population
9. Define data, vocabulary, and messaging standards relevant to public health and health information system interoperability
10. Describe emerging challenges and opportunities for sharing data between clinical and public health information systems.
11. Describe different structures of health information exchange
12. Define and explain privacy, confidentiality, and security
13. Apply principles of data visualization and human-centered design to the development of a public health dashboard
14. Discuss the role of policy in carrying out public health initiatives
15. Apply an ethics framework to a public health informatics issue
16. Describe the role of public health informatics in global health

Course Overview:

The first part of the class will cover the domain of public health and disease surveillance to provide background of the field. We will then investigate sources and types of population-related data and informatics issues pertinent to managing, integrating, and securing public health data. Over the quarter you will work alone and with others to apply skills gained in class regarding community health assessment, the public health approach, risk factor identification, data summarization, evaluation of public health systems, and data visualization.

The assigned readings, modules, and website reviews for each class should be completed before each class session so that you are able to discuss them in class.

Course Schedule:

Week/Module	Dates	Topics

1	Jan 5/7	Intro to Public Health/ PH Approach
2	Jan 12/14	Public Health Data/ Surveillance
3	Jan 19/21	PH Information Systems & Evaluation
4	Jan 26/28	Interoperability: Data Standards/Vocabularies
5	Feb 2/4	Data Viz/Design Thinking/Environmental Health
6	Feb 9/11	Health Information Exchange/EHR Data
7	Feb 16/18	Policy/Privacy and Security
8	Feb 23/25	Global Health Informatics
9	Mar 2/4	Disease Modeling/Ethics
10	Mar 9/11	Course Wrap up and Group Presentations

Course Rules of the Road and Policies:

Your attendance and participation are critical to success in this class. Please read the assigned readings prior to class and be ready to discuss them. In reading the materials. Please consider questions that may need clarification, issues that you would like to discuss with others, how to apply the concepts and skills to your interests/work. If there are concepts or assignments that need clarification, I encourage you to raise them in class, post them on the discussion board, or feel free to contact me outside of class.

Expectations for communications and classroom interaction

In terms of communications and classroom interaction, we will follow UW Netiquette guidelines. Please review these guidelines https://www.uwb.edu/it/learning/netiquette-guidelines

The expectation is that students will attend all classes. Please let me know if you are not able to attend class. Repeated absences or tardiness will affect your participation grade.

Your participation is key to the success of the class. Please arrive to class a few minutes early since as it can take several minutes to let everyone into the class.

I encourage you to keep your video on and microphone off when not speaking. Participate through asking questions either through raising your hand, using the raising hand icon, or asking a question in the chat.

You are welcome to use laptops for class-related activities. Please refrain from checking email and outside work, shopping, etc.

Syllabus Changes

The syllabus may be revised throughout the quarter. When there is a revision, I will make an announcement either in class or through a Canvas announcement. The current version will be available on Canvas.

Readings

The assigned weekly readings, website reviews, and online modules are posted on the course schedule and the course website. Readings and assigned modules should be completed before class. The readings will include chapters from the Magnuson textbook and journal articles.

Textbook: Public Health Informatics and Information Systems, 3ʳᵈ Edition, 2020, Magnuson and Dixon Editors. Can be purchased through Springer
- springer.com/us/book/9783030412142

Reading discussions

Each student will sign up to lead an online discussion of a reading or readings. The questions will be posted on Sunday by noon. Students will provide responses by 6pm the following Tuesday. The lead will present a 15 minute summary of the readings and discussion the following Thursday. On weeks when there are two discussion questions posted, students will be responsible to participate in only one discussion. Questions should be drawn from the readings and be thought-provoking. Discussion responses should be informed, thoughtful, focused on the question and the reading. Responses should be ˜10-20 sentences in length.

Written Assignments

All written assignments should be professionally and academically written. Please check for grammar, spelling, and flow prior to submitting. Papers should begin with titles and include your name and date followed by an introduction, body, conclusion, and **references**. For written assignments, an outline format is **not** acceptable. The file name for the assignment document should begin with your last name (or group name) and the assignment number.

Assignments

1. **Homework Assignments (HW)-** includes 5 individual assignments related to topics covered in class (Introduce Yourself!, This is public health, public health data sources, standards case study, Covid-19 data visualization)
2. **Midterm paper on an evaluation of a public health surveillance system plus in-class presentation**
3. **Group project on innovative Informatics Solution to a Public Health Problem** includes 2 progress summaries, final paper, presentation, peer evaluation
4. **Discussion** - each student leads a weekly reading discussion and participates in a weekly reading discussion board
5. **Class Participation** - contribute to in-class discussions and breakout sessions throughout the 10 week quarter

Assignment Submission

Please submit assignments as PDF files or Word Doc files via Canvas. File names should start with your last name followed by the assignment type (ex. *Turner_Hmwk 1*) Assignments should be. 1.5 spaced in a standard 12-point font.

Policy on late assignments

Please submit assignments on the due dates/times indicated for each assignment. Late assignments will be penalized by 5% for each day they are late. Please discuss with me in advance if you will have a problem submitting an assignment on the day it is due.

Deliverables:

Deliverable	Points	Due Date (noon)
Homework	15 total	
1. Introduce Yourself!	1	1/5/21
2. This is Public Health!	2	1/7/21
3. Public Health Lit and Data Sources	3	1/12/21
4. Standards Case Study	4	1/21/21
5. COVID-19 Data Viz. (Part A)(Part B)	2.5 2.5	Part A (Q1-4): 1/28/21 Part B (Q5-12): 2/18/21
Midterm Evaluation Paper	20 total	

Submit a chosen system to the instructor (email)		1/19/21
Paper		2/2/21
Presentation		2/4/21
Group Project	40 total	
Part A: Progress Report	2.5	2/16/21
Part B: Progress Report	2.5	2/23/21
Final Report	25	3/9/21
Final Presentation	8	3/11/21
Self and Peer Evaluation	2	3/12/21
Discussion	15 total	Weekly
Lead	5	Varies: Sign up for reading. Submit on Thurs and 15 min report out the following Thurs
Responses	10	Weekly response by Tuesday
Class Participation	10	Class period, including breakouts
Total	100	

Grading:

Students will be evaluated on the following:

1. Course homework assignments (15%)
2. Midterm evaluation paper (individual) (20%)
3. Innovative Informatics Solution to Public Health Problem(group) (40%)

- Project 1a Identification and description of PH Problem including target populations and geographic location (2.5%)
- Project b Summary of brainstorming session and description of selected innovation (2.5%)
- Project c Development of infographics to explain and sell innovation idea
- Report summarizing 1a-1c (25%)

- Project presentation (8%)
- Self and group evaluation (2)
- Student-led weekly discussion (5%) and discussion board responses (10%)
- Class participation (10%)

Academic Integrity:

For individual assignments, the work that you submit should be your own. For group or paired assignments, each member of the group is expected to contribute equally.

If you use material from other sources, please make sure that you give appropriate credit. Any standard citation format is acceptable but be consistent, If you need clarification on how to cite sources appropriately, please consult a standard reference such as .

For more information about academic responsibilities in general, please visit https://depts.washington.edu/grading/pdf/AcademicResponsibility.pdf Student conduct code Link

Accommodations:

Washington State law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, is available at Religious Accommodations Policy (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (https://registrar.washington.edu/students/religious-accommodations-request/)

Student support services links:

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  o Technology Support help@uw.edu 221.5000
  o UW Libraries (https://www.lib.washington.edu/)
  o UW Writing Center (https://www.lib.washington.edu/ougl/owrc)
  o UW Career Center (https://careers.uw.edu)
  o SOM Center for Equity, Diversity and Inclusion http://cedi-web01.s.uw.edu