

Public Health Informatics

INF 385T Spring 2012 (Unique Number: 28625)

Mondays, 3:00-6:00pm UTA 1.504

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I. COURSE OVERVIEW, OBJECTIVES AND GRADING

Public Health Informatics (PHI) is an emergent, interdisciplinary field that focuses on the systematic management and dynamic application of information resources to enhance public health practice, education and research. The field of public health subsumes PHI and is concerned more broadly with population based health promotion and disease and disaster surveillance and control.

PHI is practiced around the world by individuals and governmental and non-governmental organizations at the international, national, regional, state and local levels. PHI deals with the entire life cycle of information processing: the collection and analysis of vital statistics data through surveillance; information creation; information storage and retrieval; visualization and graphics; dissemination; use for policy and decision making; and further trend tracking. PHI thus serves as a sort of decentralized and centralized nerve system for various public health organizations and their sponsors.

This course provides an introductory overview of the vast and dynamic field of PHI. It focuses on health promotion, trend tracking (particularly through social networking and geographic visualization), and knowledge management for policy development and for rapid, evidence-based decision making.

Course objectives and grading:

1. To contribute to the advancement of PHI by completing a potentially publishable paper on health promotion, disease or disaster surveillance, and disease or disaster control (40% of course grade).
2. To develop PHI leadership and educational skills through the presentation of selected PHI textbook chapters (and other topics) and leading discussions thereon (20% of course grade).
3. To develop critical and analytical skills about PHI issues and problems by answering questions in a take-home exam (30% of course grade).
4. To proactively participate in group efforts through positive and constructive class participation (10% of course grade).

Completion of the course should prepare individuals to be life-long learners in PHI. The course should also serve to make one more competitive when applying for a post-master's or post-doctoral Public Health Informatics Fellowship at the Center for Disease Control and Prevention (www.cdc.gov).

Prerequisite: Graduate standing.

II. REQUIRED TEXTBOOK AND WEB SITE

Liebowitz, J., Schrieber, R. A. and Andredis, J. D. (2010). *Knowledge Management in Public Health*. Boca Raton, FL: CRC Press. ISBN: 978-1-4398-0600-5.

This book may be purchased at the University CoOp or through an online book vendor for about \$ 80 new or \$ 65 used. We will cover about one chapter per week in this textbook.

Please become familiar with the Centers for Disease Control and Prevention web site (www.cdc.gov) for the purposes of getting oriented to the broad field of public health, supplementing textbook chapters, leading or augmenting discussions, conducting research, and keeping current.

III. EXAMPLES OF OTHER USEFUL BOOKS

1. Hoyt, R.E. (ed). (2010). *Medical Informatics: Practical Guide for Healthcare and Information Technology Professionals*. 4th ed. Raleigh, NC: LuLu.com.
2. Bull, S. (2011). *Technology-Based Health promotion*. LA, CA: Sage Publications.
3. O'Carrol, P.W. and others. (2010). *Public Health Informatics and Information Systems*. NY: Springer-Verlag. Note: This book is essentially a reprint of the 2003 edition.

4. Parvanta, C. and others. (2011). *Essentials of Public Health Communication*. Sedbury, MA: Jones & Bartlett Learning.
5. Campbell, T. C. and Campbell, T. M. (2004). *The China Study: Startling Implications for Diet, Weight Loss and Long-Term Health*. Dallas: Benbella Books.
6. Klatz, R. and Goldman, R. (2003). *The New Anti-Aging Revolution*. Laguna Beach, CA: Basic Health Publications, Inc. A web site supplements and updates this book: (www.worldhealth.net).

IV. EXAMPLES OF ADDITIONAL, USEFUL WEB SITES

www.who.int

www.imia.org

www.amia.org

www.ania.org

www.ahrq.gov

www.dshs.state.tx

www.chinacdc.cn

www.nih.gov

www.toxnet.nlm.nih.gov

www.cochrane.org

www.mypb.org

www.healthmap.org

www.analytictech.com

www.insna.org

www.netminer.org

V. ASSIGNMENTS, GUIDELINES AND GRADING

1. Presentation and discussion leadership of assigned/selected textbook chapter (20% of course grade).

Everyone should read the assigned chapters from the Leibowitz textbook prior to the class in which each chapter will be discussed.

The assigned discussion leader for each chapter should make a brief presentation of that chapter's material and then lead a discussion on topics covered. It is not necessary to use slides or make handouts or to make detailed presentations, since everyone will have read each chapter ahead of time. The discussion leader may show one or more selected web sites related to the assigned chapter's topic. Likewise, any other class member may present a web site or supplementary material.

All class members should participate actively in each chapter discussion and try to apply it to their respective research paper topics. That is, each chapter's topic and material might be applied directly or indirectly to individual research/journal article paper topics. For example, some papers might be oriented to social networking, to one of the top killer diseases (heart disease, cancer, stroke, etc.), or to geographic public health informatics, etc.

2. Completion of a potentially publishable journal article on a selected or assigned PHI topic (40% of grade).

In addition to the topics covered in the textbook, we can address many of the top killer diseases and how PHI knowledge management addresses or might well address these diseases. A major disease focus can serve as a basis for developing or supplementing your paper.

Early in the semester, each person (or no more than two class partners) should begin developing a journal article paper topic, negotiate the topic with the instructors, and then further develop the paper topic as the semester progresses.

Please scan several potential target journals and gradually narrow to your preferred journal. Read the instructions to authors of the selected journal with regard to form, citation style, and page limitations. In developing your article, you should aim to cite some previous editorial comments and/or past articles from the targeted journal.

It is also often helpful to use ProQuest or RefWorks as authoring and citation aids when developing your article.

Please be prepared to submit a title, abstract and outline to the instructors early in the semester, and to complete a draft for criticism before you submit the final

draft or submit the article for publication. In some cases, you might wish to present the paper at a conference before submitting it to a journal editor for publication.

3 . Completion of a take home exam (30% of grade).

A take home exam will be administered after we have completed nearly all of the textbook chapters.

The exam will include about three or so questions related to PHI topics or issues. You are invited to submit potentially useful take home exam questions. Questions might be related to such topics as these: social networking to detect or contain diseases; health promotion; possible alternative future scenarios for PHI developments; or criticism of a selected journal article.

4 . Positive, constructive and proactive class participation and the sharing of insights and information with classmates (10% of grade).

VI. COURSE POLICIES

1. *If possible, matters pertinent to the course should be raised during the class so that everyone is given the same information.*
2. Please generally avoid the use of email to communicate with the instructor, aside from simple queries. Again, it is best to raise questions in class as they occur, since others might have a similar query and because everyone should be given the same information.
3. Because the instructor welcomes your comments about the course, one or more informal surveys will be given during the semester, in addition to the formal survey at the end of the semester. Specific comments are more useful than vague ones. You may comment to the instructors directly or indirectly at any time during the semester; comments may be oral or written and submitted anonymously.
4. Please read ahead of time the assigned readings to be addressed in class. Avoiding stress becomes especially important as the semester progresses. November and April are almost always very stressful months for everyone, owing to an accumulation of assignments and other pressures.
5. The instructors use a mentoring approach (graduate and seminar oriented) rather than a didactic (undergraduate) approach to instruction. Because we will be exposed to a huge ocean of health information and technology in a somewhat random order, please try to organize the information against your individual career objectives and course assignments.

6. A grade of Incomplete cannot officially be given unless there are extenuating circumstances, such as verifiable illness or death in the immediate family.
7. Life is such that it might be necessary to miss one or two class sessions, but please to attend class on a regular basis. Please let the instructor know ahead of time if you must be absent from class.
8. In fairness to those who submit written work by deadline dates, there will be a small penalty for late submissions.
9. Please take care to cite all quoted or excerpted material from other sources (do not copy and paste).
10. Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Services for Students with Disabilities area of the Office of the Dean of Students at 471-6259 (voice) or 471-4641 (TTY for users who are deaf or hard of hearing) as soon as possible to request an official letter outlining authorized accommodations.

VII. COURSE CALENDAR (Subject to change)

Monday

January 23

- Preview of course
- Textbook purchasing
- Introductions
- Please start becoming familiar with the CDC web site (www.cdc.gov) and how to consult and use its PHI features and tools and how they relate to CDC's mission. The CDC site, among others, can be useful in illustrating textbook chapter topics and leading discussions as well as doing the research paper.
- Preliminary assignment of textbook chapter topics for presentation and discussion.
- Informal course survey

January 30

- Overview of major web sites.
- To learn a broad context for PHI, please scan such Wikipedia articles as the ones on public health, health informatics, public health informatics, leadership, public administration, management, kinesiology, nutrition, etc.
- **By this date read the Liebowitz textbook's Forward and Preface and skim its entire content.**
- Assign presentation chapter topics, research paper and target journals, and take-home exam.

February 6

- **By this date, please read Liebowitz, Chapter 1, on basics of knowledge management.**
- **Assigned discussion leader should briefly present and lead a discussion on Chapter one's material.**
- Discuss research paper topics and potential publication venues.
- ProQuest and other authoring aids.

February 13

- **Read Liebowitz, Chapter 2 on knowledge management and public health.**
- Discussion of Chapter 2. Assigned discussion leader should lead the discussion.
- Discuss useful web sites.
- Discuss research paper topics and journals.
- Discuss research paper abstract and outline.

February 20

- **Read Liebowitz, Chapter 3, on cross generational knowledge transfer.**
- Discuss Chapter 3.
- Discuss research paper topics, target journals and take-home exam.
- Discuss paper abstract and outline; relate to Chapter 3.

February 27

- **Read Liebowitz, Chapter 4, on knowledge retention trends and strategies.**
- Discuss Chapter 4 as it relates to Chapter 4.
- **DUE: ABSTRACT AND OUTLINE OF RESERCH PAPER AND DESIGNATION OF TARGET JOURNAL.** Please be prepared to discuss your paper with the class and to solicit suggestions and criticisms.

March 5

- **Read Liebowitz, Chapter 5, on examples of knowledge management in public health.**
- Discuss Chapter 5 and relevance to research papers.
- Feedback on paper topics and submission strategies.
- Further discussion of research papers and target journal's articles and editorials to cite.
- Informal course survey.

March 12 SPRING BREAK!!! No class. Go party (and/or do paper and read ahead ☺).

March 19

- **Read Liebowitz, Chapter 6, on knowledge management in an international NGO.**
- Discuss Chapter 6

March 26

- **Read Liebowitz, Chapter 7, on USAID's Nutrition Division.**
- **TAKE-HOME EXAM ISSUED. It is recommended that you read the remaining textbook chapters to see which ideas will help answer exam questions.**
- Discuss papers and take-home questions.

April 2

- **Read Liebowitz, Chapter 8, on knowledge management sharing in large public health organizations.**
- Discuss research paper in context of Chapter 8 concepts.

April 9

- **Read Liebowitz, Chapter 9, on evidence-informed public health decision making.**
- Discuss Chapter 9 and relevance to each research paper.
- Informal course survey.

April 16

- **Read Liebowitz, Chapter 10 on myPublicHealth and decision making.**
- Discuss Chapter 10 and its relevance to research paper and target journal.
- **TAKE-HOME EXAM ANSWERS DUE.**
- Discuss take home answers' relevance to research papers.

April 23

- **Read Liebowitz, Chapter 11, on sharing experience to advance public health.**
- Discuss Open Book Exam Answers
- **BY THIS DATE: SUBMIT COMPLETED RESEARCH PAPER TO INSTRUCTORS IN A FORM SUITABLE FOR SUBMISSION TO THE TARGETED JOURNAL.**
- Please be prepared to summarize your paper for the class.

April 30 Last Class

- **Read Liebowitz, Chapter 12, on public health laboratories.**
- Discuss Chapter 12.
- Preliminary feedback on submitted papers.
- Discussion of submission guidelines and templates.
- Formal course survey