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Fall 2017

PHLD 9231 - Health Informatics & Decision Making

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Course Syllabus

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Instructor:	Gulzar H. Shah, PhD, MStat, MS
Office:	2009A Hendricks Hall
Phone:	(912) 478-2419
E-Mail Address:	gshah@georgiasouthern.edu
Course credit:	3 Credit Hours

Office Hours:

Mondays 10:00-11:30 AM; Wednesdays 3:00-4:30 PM or by appointment

Will be on Skype during this period (My Skype id is gulzar_gsu)

Graduate Assistant:	Kristie C. Waterfield, MBA
E-Mail Address:	kw05271@georgiasouthern.edu

In person meetings:

Class Meets: Fridays 9:00 AM – 12:00 PM on **Aug 18, Sep 15, Oct 13, Nov 10**

                         Hendricks Hall 3001

Prerequisites: none

Catalog Description: This course focuses on the fundamental concepts of managing information as an asset in public health and healthcare delivery contexts. Emphasis will be placed on converting data into information and converting information into decision support models.

Required Textbooks:

   Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014.

Required Readings:

   In addition to the required text reading, additional readings are given, as listed in the **course schedule**.

Optional Readings:

   Kabene SM (ed.). *Healthcare and the Effect of Technology: Developments, Challenges and Advancements*. New York: Information Science Publishing, 2010.

   Gopen GD & Swan JA. The science of scientific writing. *American Scientist*. Nov/Dec90, Vol. 78 Issue 6, p550-8.

Suggested Software:

   Endnotes or Mendeley

   Webcite (free registration at http://www.webcitation.org/)

Communication: My preferred communication method is email (address above). Expect class announcements, updates, and other items as they arrive to be distributed via email.

Program Goals: At the completion of this program the student will be able to:

   1.   Analyze the main components and issues of the organization, financing and delivery of public health systems in the United States.
   2.   Analyze the legal, values and ethical dilemmas in Public health that are inherent in efforts to control cost, while assuring access and quality of services for the public.
   3.   Evaluate the methods for ensuring community health safety and preparedness.
   4.   Analyze the policy development, assessment, and evaluation process for improving the health status of populations.
   5   Evaluate the principles of program development and evaluation as it relates to public health initiatives

6.   Analyze budget preparation with justification and evaluation as related to public health initiatives.
7.   Analyze the process for strategic planning and marketing for public health.
8.   Analyze quality, cost benefit and performance improvement concepts to address organizational performance issues in public health.
9.   Apply how "systems thinking" can contribute to solving public heath organizational problems.
10. Analyze health policy and management effectiveness using appropriate channels and technologies (i.e. GIS) in public health.
11. Analyze leadership skills for building partnerships in public health.
12. Analyze the trends in resources allocation, and financing and evaluate their effects on consumers, providers, and payers in public health.
13. Evaluate the economic, social and legislative influences impact on public health systems in the US.
14. Apply population and individual ethical considerations in relation to benefit, cost and burden of public health programs.
15. Evaluate the potential impacts of legal and regulatory laws and regulations on the conduct of public health research and practice.
16. Apply information from various sources to resource and program decision making.
17. Analyze the principles of health equity to public health leadership.
18. Compare the impacts of rural verses urban on the health of communities.
19. Apply qualitative and quantitative research methods for public health problem solving.
20. Demonstrate the ability to manage programs within budget constraints.
21. Evaluate grants proposals or cooperative agreements for funding from external sources.
22. Apply prevention effectiveness models to prevention strategies through cost effectiveness, cost-benefit, and cost-utility analysis.
23. Apply ethical decision-making and conduct in all aspects of public health practice.
24. Advocate for programs and resources that advance the health of the population.
25. Develop a plan to implement a policy or program, including goals, outcomes and process objectives, staffing plan, budget and implementation steps.

Course Objectives: At the completion of this course the student will be able to:

1.   Identify and describe the types of information systems available to lead and manage public health initiatives and projects (goals 3, 10, 16);

2.   Compare the strengths, weakness and costs of public health information systems; (goals 8, 10, 16);

3.   Identify and describe various decision-making approaches (goals 2, 4, 5, 7, 8, 10)

4.   Describe management principles to health information systems and technology (goals 20, 23);

5.   Apply decision making concepts to find reasonable answers to public health leadership and managerial problems; (goals 2, 4, 5, 7, 8, 10);

6.   Describe the various tools available to public health leaders to make decisions amid a dynamic environment of diversity and scarce resources (goals 19, 20, 22, 23);

7.   Develop an evaluation model using information systems or decision making that determines a possible solution for a public health problem or healthcare management issue (goals 3, 8, 10, 16, 19, 21, 22, 24, 25).

 Course Requirements: The major outcome of this course will be a research proposal, developed throughout the course, in stages, that addresses an issue in public health informatics or uses informatics/decision making models to address a public health problem. During each stage, feedback will be given to aid students to successfully transition to the next stage. Students will begin with a research question or topic and build this into a full grant proposal to be handed at the end of the semester. An outline of the proposal format (NIH/AHRQ style) is included at the end of the syllabus. **The proposal will be turned in through Folio. Instructions for turning in the proposal will be posted in the LEARNING MODULE for the week the assignments are due.** Specific assignments and the schedule is:

Assignment	Description	Due dates
Research proposal deliverable 1	*Research question and specific aims.* In one page, state the relevant public health informatics problem and your research question. The research question should develop naturally from the issue. List 2 or 3 specific aims for your proposed project. Specific aims are the general steps you would undertake to answer the question. Aims are not the hypotheses.	SUNDAY 9/10 (MODULE 4) by 11:59 PM
Research proposal deliverable 2	*Preliminary outline, general framework, and methods.* Following the included guide, prepare a detailed outline of the proposal. The outline should indicate the proposal's major sections and subsections. At this point try to have developed both the methods (describe what kind of study design will be used, preliminary measures and analysis techniques) and a conceptual framework to help guide your investigation. The framework may come from one of the IS theories or decision-making models discussed in class, those introduced in the readings, or elsewhere.	SUNDAY 09/24 (MODULE 6) by 11:59 PM
Summary data from a public health information system	Students will select a public health information system (a web-based data query system – WDQS) and explore the topics/variables for which information is available from the system. Based on the system's capacity for the info, the students will develop up to three research questions and use the selected WDQS to create summary tables required to answer your research question. Interpret summary data briefly, not to exceed 600 words of text. In addition to several systems developed by CDC, AHRQ's HCUPnet (http://hcupnet.ahrq.gov/), and NACCHO's Profile Query System (http://profile-iq.naccho.org/), many state health departments have developed their own WDQSs (see Friedman DJ, Parrish RG. Characteristics, Desired Functionalities, and Datasets of State Web-based Data Query Systems. Journal of Public Health Management & Practice. 12(2):119-129, March/April 2006).	SUNDAY 10/22 (MODULE 10) by 11:59 PM

Research proposal deliverable 3	*Final proposal.* Students will write the background and approach sections (i.e., specific aims, significance, innovation, and approach) of a grant application in the NIH/ARHQ style. Excluding references, the total length of the paper should be between **5 and 6 single** spaced pages. All sources are expected to be cited properly following an accepted citation style (APA, Vancouver, etc.).	SUNDAY 11/19 (MODULE 14) by 11:59 PM
Topic presentation.	For each module **two** students will take an active role by providing an approximate 15 to 20 minute overview presentation on that module's decision making method or information systems theory. Each method/theory for the week is listed within the syllabus. **All presentations will be made in person during the in-class meeting** following the assigned module. Presenters are expected to make PowerPoint presentation covering, as appropriate: the central phenomenon, models, defining key constructs, units of analysis, usefulness, predictions, limitations and applications. Students will be able to select the topic of their choice from the list of articles included in each of the modules.	FRIDAYS: Sep 15, Oct 13, Nov 10
Weekly quizzes.	Each module will have a quiz that covers lecture materials and readings. All questions will be in short answer format. The quiz will become available on Wednesdays and be due on Friday by 11:59 PM. For "on campus" modules, **class discussion** will take the place of the quiz.	FRIDAYS, 11:59 PM
Final exam.	The intent of the exam is to be a practice from your comprehensive exam. It will be two to three essay questions that not only cover class content, but will ask you to integrate what you have learned in other courses. You will be free to use whatever class materials you wish. The exam will be made available **on 12/04 at 12:00 AM (midnight)** and must be submitted through **Folio** by **12/05 at 11:59 PM** (that provides about 48 hours). For the exam you must: 1) provide citations to justify your points and 2) write well (grammar, style, logic, etc). Expect each question to require 3 to 4 pages (excluding references) to answer.	(12/04-12/05)

Each week or "learning module" will be a combination of readings from the book, readings from selected articles, power point presentations, web demonstrations, assignments and quizzes. You may consider using Google Hangout for this. This helps keep the power point videos a manageable length and optimized for the web. All power point videos are viewable within Folio. Disclaimer: if you watch the videos through YouTube I have no control over the content of what "suggested" or "recommended" videos will appear.

<u>Grading</u>:

Research proposal	**Question & specific aims**	**2%**
	Preliminary outline	**3%**
	Final proposal	**30%**
Class participation	**Topic presentation + discussion board postings**	**10%**
	Weekly quizzes	**30%**
Summary data from a public health information system	**Use of public health information system: formulation of research question, presentation of summary data and their interpretation.**	**10%**
Final exam		**15%**
Total		**100%**

The following scale will be utilized in grading:

90.0% - 100%   A

80.0% - 89.9%   B

70.0% - 79.9%   C

60.0% - 69.9%   D

< 59.9%   F

Attendance Policy: In class participation is required. Federal regulations require attendance be verified prior to distribution of financial aid allotments. Chronic attendance problems will lead to a reduction in your grade.

Dates to Remember: Additional important dates are located on the University Calendar:

Instructional Methods: The course meets once a month for three hours. The way we use this time will vary, and will include lectures, article discussions, in-class exercises, and student-led presentations. Discussion and debate of course material is crucial for success in the course. Therefore, <u>students are required to read all material assigned for the class and to come to class prepared to discuss the assigned readings</u>.

Expectations: This course will involve the completion of a number of written assignments. Writing as a means of effective communication, argumentation, and presentation of ideas is extremely important as a public health professional, or a professional of any sort. It is expected that students will turn in assignments that express their ideas thoughtfully, with attention to organization, spelling, and grammar. In addition, proper citation and quotation of references in writing is absolutely critical, and failure to do so can have serious repercussions both in the academic and professional realms. If you have questions about citation, please seek help from Dr. Shah or another source. If you would like assistance in developing your writing skills, the University Writing Center (871-1413) is an excellent resource.
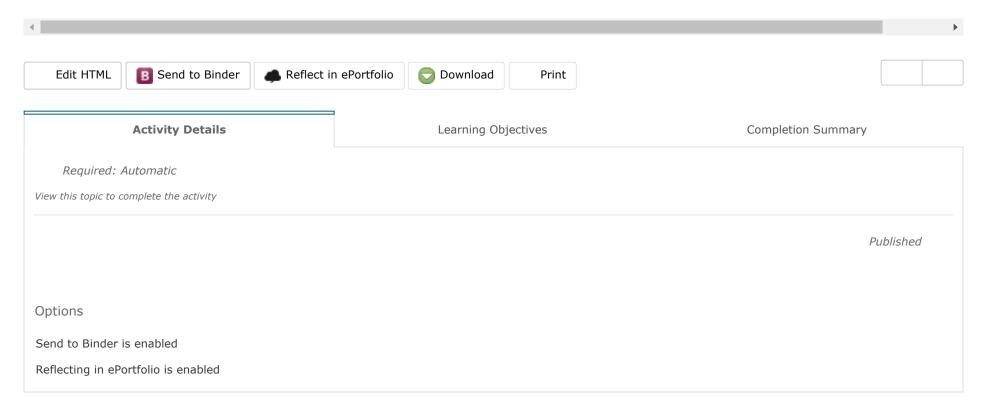
Academic Misconduct: As a student registered at this University, it is expected that you will adhere to only the strictest standards of conduct. It is recommended that you review the latest edition of the *Student Conduct Code* book, as well as the latest *Undergraduate & Graduate Catalog* to familiarize yourself with the University's policies in this regard. Your continued enrollment in this course is an implied contract between you and the instructor on this issue; from this point forward, it is assumed that you will conduct yourself appropriately.

Academic integrity relates to the appropriate use of intellectual property. The syllabus, lecture notes, and all materials presented and/or distributed during this course are protected by copyright law. Students are authorized to take notes in class, but that authorization extends only to making one set of notes for personal (and no other) use. As such, students are not authorized to sell, license, commercially publish, distribute, transmit, display, or record notes in or from class without the express written permission of the instructor.

Academic Handbook: Students are expected to abide by the Academic Handbook, located at http://students.georgiasouthern.edu/sta/guide/. Your failure to comply with any part of this Handbook may be a violation and thus, you may receive an F in the course and/or be referred for disciplinary action.

University Calendar for the Semester: The University Calendar is located with the semester schedule, and can be found at: http://www.collegesource.org/displayinfo/catalink.asp.

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One Final Note: The contents of this syllabus are as complete and accurate as possible. The instructor reserves the right to make any changes necessary to the syllabus and course material. The instructor will make every effort to inform students of changes as they occur. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course.

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