

# INFO 648 Healthcare Informatics

### Spring 2022

**Prudence W. Dalrymple, PhD, MS (Informatics), FMLA, FAMIA**

Phone: 312 519 0742

Email: [prudencedalrymple@gmail.com](mailto:prudencedalrymple@gmail.com)

Office Hours: I am available on campus or by phone for appointments at mutually convenient times. The best way to reach me is by email. I will also arrange online office hours throughout the term. If you have concerns or questions about completing this course successfully, please feel free to contact me before the end of Week 2 to discuss steps to help you achieve success.

# Course Description:

INFO 648 is the first course in the MS in Health Informatics (MSHI) and the Healthcare Informatics Certificate (HIC). It may also be taken as an elective by students in other Drexel programs to familiarize students with the many aspects of health informatics, such as clinical medicine, nursing, public health, consumer and patient information, and bioinformatics. It introduces applications of information systems in a variety of healthcare environments, including education, research, and clinical settings. It includes extensive reading and critical discussion of relevant professional research literature. Health informatics is a large, complex, and rapidly evolving field—one that offers multiple, diverse opportunities and challenges.

There are no pre-requisites.

# Delivery Method:

This course is offered online (asynchronously). That means that you can work at your own pace during each week, but due dates are firm. Students are expected to have read assigned materials by the date noted. Most students find that the opportunity to learn from each other through discussion boards and other activities is the best way to benefit from online learning. The class offers a variety of assignments designed to help you develop analytic and verbal presentation skills, as well as to become comfortable with the course content. Students are expected to demonstrate the highest standards of academic integrity and honesty, consistent with the expectations of the department and the institution.

# Course Objectives

### Upon successful completion of this course, a student will be able to:

* Describe how standards and structures affect the expression, collection, manipulation and representation of data and information in biomedicine and public health
* Describe the role of decision support in healthcare
* Articulate and give examples of sociotechnical issues in healthcare informatics
* Demonstrate the ability to evaluate informatics tools, systems and applications used in healthcare
* Discuss the effect of privacy and security regulations on the development and implementation of informatics applications in healthcare
* Describe recent developments in bioinformatics and be able to conduct a basic search in a bioinformatics database
* Critically discuss current research literature in healthcare informatics.

### In addition to learning the content of the course, each student will be able to:

* + Work successfully in a group to organize, complete, and document a task
  + Use library, online, and other sources independently to identify and use existing knowledge and past experience
* Present material in a variety of communications styles: oral, technical, written
* Recognize barriers and difficulties associated with real-world design problems

### Learning is not a spectator sport. You are expected (and required) to participate in the class by contributing your insights, supporting your classmates through constructive criticism and response, and submitting your assignments on time.

**Assignments & Grading:**

**Briefing Paper (15%)** Select one article from the most recent 2 years of the **Yearbook of Medical**

**Informatics** or the **Journal of the American Medical Informatics Association (JAMIA**).

* Let me know which article you have chosen, to avoid duplication.
* Prepare a brief (2 page) critical summary (see instructions posted elsewhere in the course shell)
* Post it in the Course Discussion board by the date specified in the course calendar so that others may benefit from your brief.

**Health Informatics Standards (15%):** Students will be assigned a standard that is used to support health

data exchange and interoperability.

* The deliverable is a written report of no more than three (3) pages that describes and evaluates the standard.
* The summary report must be posted on the Discussion Board for that week.
* See the full assignment description on Blackboard.

**Healthcare Datasets Review (15%) *:*** Students will choose a health-related set

* Thedeliverable is a short paper that describes the requirements for accessing and using the data sets, what data elements are available, how the data owners manage the issues of privacy and confidentiality.
* See the full assignment description on Blackboard.

**Readings and Discussion Board (25%)**

* One or more questions will be posted on the Discussion Board (DB) approximately every other week.
* Review the learning objectives and the DB question(s) to focus your attention.
* Your responsibility is to participate in each discussion by posting a detailed, insightful reply to

each question AND

* Post responses to at least  **(2)** other student replies.
* Make your first post by Thursday at midnight. Your post will derive from reading and viewing any other materials posted in the course.
* The subsequent responses will likely reflect your response to others’ comments. The DB closes at 11:59 pm on the Sunday after the week’s lecture.

**Team Project (25%)** This project involves planning, writing and presenting a well-designed and clearly-written evidence-based project to the class. To demonstrate a critical review of current research literature and information, each team will prepare a class presentation containing the following:

* an audio-visual presentation briefly summarizing and describing the topic, including the key points of the readings. Team projects will be graded on the content and quality of the presentation, not on the technology used or not used.
* a minimum of 5 unique items to further explicate and illustrate the topic such as a list of relevant professional journals, a multi-media presentation, or a list of professional and/or regulatory groups. Each one of these items is a unique category.
* The instructor will assign students to teams, which saves time and replicates the world of work, where the needs of the organization, rather than employees’ personal preferences, drive decisions.
* The instructor must also approve the topic; be sure to submit your proposed topic by the date specified in Blackboard. See the full assignment description.
* Depending on the background of the current class of students, an alternative assignment with a stronger data science focus may be proposed.

**Reflective Evaluation (5%)** Using the provided template, students will

* assess their individual contributions to the Team Project and as the functioning of the team as a whole.
* Students will also comment on their achievement of the learning objectives for the course.

**Assignments are due at 11:59 p.m. [ET**] on the date shown on the course schedule in Blackboard. Your assignment will have points deducted for being late. Papers and presentations will be evaluated based on clarity, organization, degree to which stated criteria are met, thoroughness, and appropriate style.

**Academic Honesty and Integrity**

Drexel University Is committed to academic honesty and to protecting members of the community from

the results of dishonest conduct. Drexel University's Academic Honesty policy may be found at: <http://www.drexel.edu/provost/policies/academic_dishonesty.asp>

**Regarding plagiarism**:

On all submitted assignment, doing your own work is absolutely essential. You cannot clip and

paste text from the internet into your work and pass it off as your own. You must cite the

sources of any information, quotations or ideas, which are not your own, using standard citation

methods. Plagiarized work will automatically get a zero on the assignment.

**Citation style:**

The health informatics field uses both the Vancouver style and the American Psychological

Association (APA) Style. When working on a group assignment, all references must be consistent;

therefore negotiate with your team as to the style you want to use.

For APA style, see: <http://www.library.drexel.edu/tutorials/citations>

For Vancouver style, see: [http://www.biomedicaleditor.com/va ncouver-style.html](http://www.biomedicaleditor.com/va%20ncouver-style.html)

If you have ANY questions about how to cite a work in your assignments, please contact

the Hagerty Library for guidance ([tjs49@drexel.edu](mailto:tjs49@drexel.edu)).

**Communicating with the Instructor:**

There is DB for logistical/administrative questions where you can post questions about assignments, logistics, etc. Because there are more of you than there are of me, a classmate may be able answer more quickly. Address communications of a personal nature directly to the instructor.

## Required Textbook:

**There is one required textbook for this course**, available in print or electronic copy.

Hoyt, RS & Hersh, WR . Health Informatics: A Practical Guide, 7th ed. Informatics Education: 2018. ISBN 78-1-387-64241-0 (Print) ISBN 978-1-387-82750-3 (eBook)

Additional required readings and/or supplementary readings will be posted within the course shell.

**Accommodations:**

Any student with a documented disability who needs accommodations should contact the Office of Equality and Disability at James E. Marks Intercultural Center; 3225 Arch Street, Suite 011, Philadelphia, PA 19104 (Mailing address: 3141 Chestnut Street, 81-210, Philadelphia, P19104)

Phone: 215.895.1401

TTY : 215.895.2299

Fax: 215.895.1402

Email: [disability@drexel.edu](mailto:disability@drexel.edu)

All communication is strictly confidential.

**Important information on University Policy:**

Adds and drops must be submitted by the end of Week 1 April 3 (Sunday 11:59)

Withdrawals must be submitted by the end of Week 7 May 15 (Friday 11:59)

Grading Scale

|  |  |  |
| --- | --- | --- |
| A+ | 100 | Professional work of the highest caliber; virtually flawless. |
| A | 95-99 | Outstanding achievement. Student performance demonstrates full command of the course materials and demonstrates a high level of originality and/or creativity that far  surpasses course and project expectations. |
| A- | 90-94 | Excellent achievement. Student performance demonstrates thorough knowledge of  the course materials and exceeds project and course expectations by completing all requirements in a superior manner. |
| B+ | 85-89 | Very good work. Student performance demonstrates above average comprehension of the course materials and exceeds project and course expectations of all tasks as  defined in the course syllabus. |
| B | 80-84 | Student performance meets designated project and course expectations and  demonstrates understanding of the course materials at an acceptable level. |
| B- | 75-79 | Marginal work; student performance demonstrates incomplete understand of course  materials. |
| C+ | 70-74 | Unsatisfactory work. Student performance demonstrates incomplete and inadequate  understanding of course materials. |
| C | 65-69 |  |
| C- | 60-64 | Unacceptable work at varying levels. |
| D+ | 55-59 |  |
| D | 50-54 | Unacceptable work at several key levels. |
| F | 0-49 | Failing—or dropped and forgot to notify the appropriate personnel. |

**INFO 648 Spring 2022**

**Weekly Calendar with Assignments and Dates Due\*\***

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Required Reading (See note below)** |  | **\*\*\*Activities & Assignments** |
| 1.Mar 28-Apr 3 | Ch 1 Overview of Heath Informatics  Ch 2 Data, Information & Knowledge | pp. 1-7, 15-22  pp. 29-44 | Personal introduction; Learning goals & experience in health care, if any) **DB #1** |
| 2. Apr 4-10 | Ch 4 Electronic Health Records | pp. 73-93 | **Briefing paper due April 10 11:59 p.m.** |
| 3. Apr 11-17 | Ch 5 Standards & Interoperability  Ch 6 Health Information Exchange | pp. 101-26; 131-33  pp.142-144 | **DB#2**  *Instructor assigns Standard for Standards Assignment by April 13* |
| 4.Apr 18-24 | Ch 8 Clinical Decision Support  Sociotechnical Issues | pp. 161-79 | **Standards Assignment due April 24 11:59 p.m.**  *Instructor assigns teams for final project* |
| 5.Apr 25-May 1 | Ch 9 Safety, Quality & Value  Ch 14 EBM & Clinical Practice Guidelines | pp. 185-197 pp.283-92, 296-301 Supp TBA | **DB#3**  Submit topic for Final project by May 1 |
| 6. May 2-8 | Ch 7 Healthcare Data Analytics  Ch 1 Hoyt Hurwitz & Muenchen  Ch 1-3 Kelleher & Tierney | pp. 149-156  pp. 1-23  pp. 1-37, 39-56, 69-86 | **Mid-course evaluation/reflection**  **View supplemental materials**  **Begin work on team project** |
| 7. May 9-15 | Ch 12 Consumer Health Informatics  Ch 13 Mobile Technology & Mhealth | pp. 253-264  pp. 271-278 | **Data sets assignment due May 15** |
| 8. May 16-22 | Ch 17 Telemedicine  Ch 19 Public Health Informatics | pp. 339-349  pp. 373-392  Supp TBA | **DB#4** |
| 9. May 23-29 | Ch 10 Privacy & Security  Ch 11 Informatics Ethics | pp 213-227  pp 233-247 | **Team project due May 29** |
| 10. May 30-June 3 | Ch 18 Bioinformatics  Simulation & Interprofessionalism  Managing Business Continuity | 28pp  Supp TBA  Supp TBA | **DB #5**  **Reflective evaluation due June 3** |

\*\*Specific page ranges are given to focus on the most important parts in this course, and to accommodate supplementary readings. The instructor may adjust the schedule, if necessary.

|  |  |
| --- | --- |
| **Due Date** | **Assignment Due at 11:59 p.m.** |
| 03/31/22 | Introductions due 3/31 |
| 04/3/22 | DB#1 Evolution of Health Informatics |
| 04/10/22 | Briefing paper due |
| 04/17/22 | DB#2 Sociotechnical Issues & Decision Support |
| 04/24/22 | Standards assignment short paper due |
| 05/01/22 | DB#3 Safety, Quality & Value |
| 05/15/22 | Data sets assignment short paper due |
| 05/22/22 | DB#4 Telehealth and Public Health Informatics |
| 5/29/22 | Team Project due |
| 06/03/22 | DB#5 Review & Response to Team Projects |
| 06/03/22 | Reflective Evaluation due |