INTD 560: Survey of Health Informatics
Seminar E 02
Class number 40367 (BearTracks)

Time:

Fall term, Mondays 1300-1350, MST (in-class lecture; also requires participation in online discussion, asynchronous)

Place:

ED 433A

Course eClass web site:
https://vista4.srv.ualberta.ca/webct/urw/lc5122011.tp0/cobaltMainFrame.dowebct
(requires CCID log in to access)

Course Coordinator:

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Computing Science Contact :
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Prerequisites:

Graduate student standing preferred
No background is assumed
Knowledge of healthcare and of the health system would be an asset

Course Description:

This course provides a broad survey introduction to health informatics, the field concerned with the application of information and communication technology (ICT) for the acquisition, storage, management and use of information in health care. The course provides an overview of current developments, issues and challenges in the emerging field of health informatics and covers various underlying themes including proper use of information technology, appropriate data entry, data privacy concerns, decision support, electronic health record, ethical issues, among others. The course, considering viewpoints in public health, nursing, ICT in medicine and computer science, is a series of lectures given by experts in various subfields of health informatics and culminates with a mini conference prepared by the students presenting selected topics of interest.

Course Objectives:

- Understand the current landscape of the practice of applied health informatics
- Understand the basic foundations and the major issues in health informatics and health information systems
- Identify the basic tenets of health information management
- Better determine and define areas of interest in health informatics
- Understand the issues related to good communication between the ICT world and health care communities

Methods of teaching:

- 1 hour in class lecture per week
- 2 hours on-line discussion per week—student participation will be assessed and graded for amount of participation, relevance to topic, and quality of discussion

Course Requirements:

Student grading is based on the following:

- Term paper (30%)
    - Term papers will be due on Friday, December 11th by 9 am MST. They must be delivered to Dr. Sales via email by the due date and time. More detail on the term paper is given below.
- Poster Presentation (35%)
    - A poster session will be held after the last class session on December 7th. All students will present their posters at this session.
- Class Participation (assessed through online discussion participation) (35%)

The University of Alberta Grading system

The University of Alberta uses a letter grading system in graduate courses with a four-point scale of numerical equivalents for calculating grade point averages.

Descriptor	Letter Grade	Grade Point Value
Excellent	A+ A A-	4.0 4.0 3.7
Good	B+ B	3.3 3.0
Satisfactory	B- C+	2.7 2.3
Failure	C C- D+ D F	2.0 1.7 1.3 1.0 0.0

Each of the course evaluation strategies (term paper, poster presentation, and class participation) will be assigned a percentage mark (e.g., 80%). The conversion to a letter grade will be made based on the final mark.

Details of course assignments

Class participation (35%)

Students are expected to attend all class sessions unless they have given the instructor prior notice about their absence. In-class sessions are primarily didactic, with some opportunity for discussion and clarification as needed. Most discussion will take place online. Questions will be posed each week to guide discussion about the topic for that week, and the discussion about each question will be monitored by both the instructor for that topic and the course coordinator. Students may pose additional questions beyond those posed for discussion. However, all students will be expected to respond to at least two of the main discussion questions with substantive responses that demonstrate understanding of the topic. Any questions clarifying the topic should be posed during the week that topic is discussed. Each week, the discussion questions will be updated to reflect the topic for that week. The grade for course participation will be based on weekly participation.

Term Paper (30%)

A term paper on a question related to health informatics chosen by the student constitutes a major assignment for this course, worth 30% of the final mark. Students should select a question of interest to them related to health informatics. All students must submit the question for their term paper to the course coordinator, Dr. Sales, by the end of the fourth week of class. Term papers should not exceed 10 pages, single-spaced, and must be written in a scholarly style. Either APA or Vancouver citation styles are acceptable, but the student must adhere to the rules of the style they choose. All references must be cited; students are accountable for rules regarding plagiarism and scholarship at the University of Alberta (see section on academic integrity below). All term papers should be the work of an individual student, not collaborative efforts.

Final term papers are due by 9 am on Friday December 11th. They must be submitted via email to Dr. Sales (anne.sales@ualberta.ca).

Poster Presentation (35%)

Each student will also prepare and present a poster on the same topic as their term paper. Rules for poster preparation include:

- ***Size of Board/Method of Display.*** Your poster should be no more than 3x7 feet; your display should be printed on paper or lightweight poster board so it can be attached to the poster board with push pins.

- ***Organization.*** Design your poster to highlight the major points of your question and stimulate feedback. The following format is suggested: question; background/relevance; search strategy; findings; conclusions, and relevance to policy, delivery or clinical practice. Present enough information but avoid overcrowding. You may either use a plotter printer to print your poster, or you may print out separate pages (either mounted or not) that cover the main points of your poster.
- ***Graphics.*** Consider various options for presenting the salient points of your research.
  Use graphs to clarify and emphasize the key relationships between figures. Be sure graphs are precise, clearly labeled, placed near the companion text, and large enough for people to read easily.
  Select the type of chart that best illustrates your point. For example, pie charts compare relative parts that make up a whole, and line charts are ideal for depicting trends over time.
  If using tables, make sure columns are not too narrow, too numerous or too long – so they can be easily read. Use tables only when simpler visuals like graphs or charts won't suffice.
  Arrangement. Design the flow of information from left to right. Use lines, frames, contrasting colors, or arrows to call attention to important points.
- ***Lettering.*** Select a clean and simple font and use it consistently throughout the poster. Use both upper and lower case letters, especially in the body of your presentation. Make lettering large enough to read from at least three feet.
- ***Color.*** Use color to attract interest and to dramatize similarities and differences. Emphasis may be lost if more than four colors are used. The background color of the poster boards is light gray or beige.

Each student is responsible for preparing his/her own poster, and any costs incurred in poster preparation or printing are the student's responsibility. During the poster session, each student will have up to five minutes to orally present the contents of their poster. Posters will be evaluated on content, presentation, organization, and aesthetics.

The poster session will be held on **Monday, December 7th following the last class presentation, from 1400-1600** (time may be shortened if not needed). All posters must be prepared for this session; no late posters will be accepted. All students should plan to attend this session.

Additional assignment details:

- Late assignments are not permitted, *except in extraordinary circumstances* and pre-arrangements must be made with Dr. Sales; no course incompletes will be allowed except under extraordinary circumstances requiring prior negotiation and verification of circumstances.

Academic integrity

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.ualberta.ca/secretariat/appeals.htm, Section 30.4.2) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Students should review the definitions of plagiarism and cheating which appear in the Code of Student Behaviour (Section 30.3.2). Academic dishonesty is a serious offence and can result in suspension or expulsion from the University." (GFC 29 SEP 2003)

READING

Required text:

Biomedical informatics : computer applications in health care and biomedicine / Edward H. Shortliffe, editor ; James J. Cimino, associate editor. Edition: 3rd ed. Publication info: New York : Springer, c2006.
ISBN: 0387289860
ISBN: 9780387289861
ISBN: 0387217215 (e-ISBN)

Additional readings will be assigned for each week and will be listed in this course outline.

Course outline

Monday September 14 (all instructors present if possible; Dr. Sales leads)

- Introduction to Health Informatics
- Health Information systems
- Health Information flow and use

Reading: Shortliffe chapters 1-4
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday September 21 (Dr. Shaw)

- Electronic health records
- Canada Health Infoway

Reading: Shortliffe chapters 12-13
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday September 28 (Dr. Zaiane)

- Knowledge management for health informatics
- Introduction to electronic databases
- Health data analysis

Reading: Shortliffe chapter 13
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday October 5 (Dr. Hiruki)

- Pharmacy and Laboratory
- Medical Imaging

Reading: Shortliffe chapter 9, 18
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday October 12—No class—Thanksgiving Holiday

Monday October 19 (Dr. Sales)

- Nursing informatics
- Patient care systems
- Patient monitoring systems

Reading: Shortliffe chapter 16, 17
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday October 26 (Dr. Hayward)

- Decision support for health care
- Supporting professional education through informatics

Reading: Shortliffe chapter 10
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday November 2 (Dr. Hayward)

- Privacy issues in health care
- Ethics and electronic records

Reading: Shortliffe chapter 4, 20, 21
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday November 9 (Dr. Shaw)

- Health user interfaces
- Consumer applications and telehealth

Reading: Shortliffe chapter 14
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday November 16 (Dr. Hiruki)

- Genomic medicine
- Personalized medicine

Reading: Shortliffe chapter 22
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday November 23 (Dr. Sales)

- Public health informatics
- Health information standards
- Language and health informatics

Reading: Shortliffe chapter 7, 8, 15
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday November 30 (Dr. Sales)

- Financing, organizations, and health informatics
- Future thinking in health informatics

Reading: Shortliffe chapter 23, 24
Additional reading:

Questions for class discussion (will be posted on eClass):

Monday December 7 (all instructors present)

In class discussion—tying up loose ends

Poster session