



# THE UNIVERSITY OF WINNIPEG

## APPLIED COMPUTER SCIENCE

Winter 2019

Course Number: **ACS-2816-050**

Course Name: **Health Information Systems**

Course Website: <http://courses.acs.uwinnipeg.ca/2816-050/>

### Instructor Information

**Instructor:** Kevin Robertson

**E-mail:** [ke.robertson@uwinnipeg.ca](mailto:ke.robertson@uwinnipeg.ca)

**Phone:** n/a

**Class Time:** Tuesday 6:00-9:00 pm

**Class Location:** 3D03

**Office:** 3C07

**Office Hours:** Tuesday 4:45-5:45 pm or  
by appointment

### Important Dates

1. **Lectures Begin** January 8<sup>th</sup>, 2019
2. **Reading Week:** February 16<sup>th</sup> – 22<sup>nd</sup>, 2019 (no classes)
3. **Midterm Test:** February 26<sup>th</sup>, 2019
4. **Last Day of Class:** April 2<sup>nd</sup>, 2019
5. **Final Exam:** April 16<sup>th</sup> – 6:00 pm 2019  
<http://www.uwinnipeg.ca/exam-schedules/index.html>
6. **Voluntary Withdrawal Date w/o academic penalty:** Friday, March 15<sup>th</sup>, 2019  
(A minimum of 20% of the work on which the final grade is based will be evaluated and available to the student before the voluntary withdrawal date.)

### Course Objectives/Learning Outcomes

This course is an introduction to health informatics concepts and their applications. It provides an overview of concepts and current themes in health informatics – a discipline that deals with the collection, storage, retrieval and use of health related data, information and knowledge. We will explore a number of topics central to the understanding of the field. This course is intended for those who wish to get sufficient background to follow progress and potentially carry out development activities in the field. Readings and case studies describe health informatics systems.

## **Evaluation Criteria**

- **Assignments: 10%**
  - o There will be 4 assignments worth 2.5% each.
  - o May include any or a combination of the following:
    - Theory, programming, or analysis homework
    - Closed-book in-class quizzes.
  - o Due at the beginning of class on due dates.
  - o No late assignment will be accepted, or under special circumstances accepted with 20% off for each late day.
  - o Assignments should be handed in by due date on paper (no handwritten) unless email submission is requested. Handwritten assignments will not be accepted.
  - o Multiple submissions are not permitted. Students may submit a partially completed assignment, and will receive credit for those attempted problems.
  - o If electronic hand in is requested, students are responsible to review their assignments before submission to make sure the correct files are attached to the email.
- **Term paper: 10%**
  - o You will required to study a current article related to the course and present in class its summary by using a PowerPoint presentation.
- **Midterm Exam: 30%**
  - o Closed-book in-class
- **Final Exam: 50%**
  - o Closed-book final exam.

## **Exam Requirements**

- Photo ID at exam is required.
- You are expected to write the test/exam on its given day.
- No electronic devices (e.g. cell/smart phone, laptop, scientific calculators, translators, etc.) are permitted.
- Midterm and final exams are closed-book.
- Unless a medical certificate is provided, no accommodation is made for missed exams.
- Missed exam will receive a mark of zero, unless a medical certificate is provided, no accommodation is made for missed exams.
- Please contact the instructor as soon as possible if extenuating circumstances require you to miss a class, assignment, test or examination.
- Keep a copy of all class work (e.g., assignments, tests) handed back in case there is an error in recording of marks by the instructor.

**Final Letter Grade Assignment**

Historically, numerical percentages have been converted to letter grades using the following scale. However, instructors can deviate from these values based on pedagogical nuances of a particular class, and final grades are subject to approval by the Department Review Committee.

A+	90+ - 100%	B+	75 - 79%	C	60 - 64%
A	85 - 90%	B	70 - 74%	D	50 - 59%
A-	80 - 84%	C+	65 - 69%	F	below 50%

**Email Communication**

Emails from accounts at uwinnipeg.ca are usually not filtered by the UofW email filter. Thereby it is recommended electronic communication used for the course utilize a UofW email account to minimize the risk of filtering.

**Services for Students**

Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams (e.g., private space) or during lectures/laboratories (e.g., note-takers) are encouraged to contact Accessibility Services (AS) at 786-9771 or [accessibilityservices@uwinnipeg.ca](mailto:accessibilityservices@uwinnipeg.ca) to discuss appropriate options. All information about a student's disability or medical condition remains confidential <http://www.uwinnipeg.ca/accessibility>.

Students may choose not to attend classes or write examinations on holy days of their religion, but they must notify their instructors at least two weeks in advance. Instructors will then provide opportunity for students to make up work examinations without penalty. A list of religious holidays can be found in the 2018-19 Undergraduate Academic Calendar.

All students, faculty and staff have the right to participate, learn, and work in an environment that is free of harassment and discrimination. The UW Respectful Working and Learning Environment Policy may be found online at [www.uwinnipeg.ca/respect](http://www.uwinnipeg.ca/respect).

**Misuse of Computer Facilities, Plagiarism, and Cheating**

Academic dishonesty is a very serious offense and will be dealt with in accordance with the University's policies. Be sure that you have read and understood Regulations & Policies #8, in the 2018-2019 UW Undergraduate Academic Calendar available at <http://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf> and the UW academic misconduct policy available at <http://pace.uwinnipegcourses.ca/sites/default/files/pdfs/publications/Academic%20Misconduct%20Policy.pdf>

Additional information is available at University of Winnipeg library video tutorial "Avoiding Plagiarism" <https://www.youtube.com/watch?v=UvFdxRU9a8g>

**Required Text Book(s)/Reading List**

Biomedical Informatics, Computer Applications in Health Care and Biomedicine

Shortliffe, Edward H.; Cimino, James J. (Eds)

Springer 4<sup>th</sup> Edition 2014

ISBN 978-1-4471-4473-1 (Hardcover)

ISBN 978-1-4471-4474-8 (eBook)

**Optional Complementary Text Book(s)**

Health Informatics: Practical Guide for Healthcare and Information Technology Professionals

Holt, Robert .E.; Yoshihashi, Ann (Eds)

6<sup>th</sup> Edition 2014

ISBN 978-1-3047-9110-8 (Paperback)

ISBN 978-0-9887-5292-4 (eBook)

**Prerequisite Information\***

(This information can be found in the UW Undergraduate Academic calendar)

- **Prerequisites:** A grade of at least C in ACS-1803(3) or permission of Department Chair

\*Make sure that you have the necessary prerequisites to take this course. If you have not successfully completed the above listed course(s), it is in your interest to go to student registration office and officially drop the course.

**Course Outline (Tentative)****I. Foundational Health Informatics**

- Introduction to Health Informatics
- Biomedical Data: Acquisition, Storage and Use
- Biomedical Decision Making
- Health Systems Design and Basic Concepts
- Standards in Health Informatics
- Ethics, Privacy and Confidential in Health Informatics
- Evaluation and Technology Assessment

**II. Applied Health Informatics**

- Electronic Health Record Systems
- Management of Clinical Information
- Consumer Health Informatics
- Patient Monitoring Systems
- Medical Imaging Informatics

**III. Health Informatics Ahead**

- Future of Computer Applications in Health Care

**Additional Course Related Information**

1. When it is necessary to cancel a class due to exceptional circumstances, instructors will make every effort to inform you via uwinnipeg email, as well as the departmental assistant and Chair/Dean so that class cancellation forms can be posted outside classrooms.
2. Your uwinnipeg email address will normally be used for course related correspondence.
3. Please note that withdrawing before the VW date does not necessarily result in a fee refund.
4. **Avoiding Academic Misconduct.** Uploading essays and other assignments to essay vendor or trader sites (filesharing sites that are known providers of essays for use by others who submit them to instructors as their own work) involves “aiding and abetting” plagiarism. Students who do this can be charged with Academic Misconduct.
5. *Avoiding Copyright Violation.* Course materials are owned by the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides. Students who upload these materials to filesharing sites, or in any other way share these materials with others outside the class without prior permission of the instructor/presenter, are in violation of copyright law and University policy. Students must also seek prior permission of the instructor /presenter before photographing or recording slides, presentations, lectures, and notes on the board.