



THE UNIVERSITY OF WINNIPEG

APPLIED COMPUTER SCIENCE

Course Number: ACS-2816-050

Course Name: Health Information Systems

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

Instructor Information

Instructor: Kevin Robertson

E-mail: ke.robertson@uwinnipeg.ca

Office Hours: Tuesdays 5:00-6:00 pm **Office:** 3C07

Class meeting time: Tuesdays 6:00-9:00 pm **Room:** 3D03

Important Dates

1. First Class: Tuesday, January 7, 2020
2. Midterm Test: Tuesday, Feb 25, 2020
3. Reading Week (no classes): February 17-21, 2020
4. Final Withdrawal Date w/o academic penalty*: Friday March 13th, 2020
5. Last Class: Tuesday, March 31st, 2020
6. Final Exam (Comprehensive): Tuesday, April 7, 2020 at 6:00 p.m.
Room: TBA
7. University closures: Louis Riel Day Monday, February 17, 2020
Good Friday Friday April 10, 2020

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. It is recommended that you talk to your lecturer before making the decision to withdraw from the course.

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.

In this course students will develop information system literacy as it differs from computer literacy. They will develop a thorough overview of the different ways computers can be used in organizational management and operations.

Evaluation Criteria

- **Assignments: 15%**
 - o There will be 3 assignments worth 5% each.
 - o May include any or a combination of the following:
 - Theory, 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 be 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: 45%**
 - o Closed-book final exam.
 - o Room: Tuesday April 7th, 2020, room 3D03

Students should contact the instructor as soon as possible if extenuating circumstances require missing an assignment, test or examination. A medical certificate from a practicing physician may be required before any adjustments or additional actions are considered.

Test / 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 – 89 %	B	70 – 74%	D	50 – 59%
A-	80 – 84%	C+	65 – 69%	F	below 50%

Required Text Book(s)/Reading List

Biomedical Informatics, Computer Applications in Health Care and Biomedicine
 Shortliffe, Edward H.; Cimino, James J. (Eds)
 Springer 4th 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)
 6th Edition 2014
 ISBN 978-1-3047-9110-8 (Paperback)
 ISBN 978-0-9887-5292-4 (eBook)

Lecture notes will be posted on the course website on the day of class. Recommended readings from the books should be completed before the next class and questions may be posted via email on at the start of the next class.

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

There are no formal pre-requisites listed in the calendar. However, it is assumed that students have a basic computer orientation.

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 204-786-9771 or accessibilityservices@uwinnipeg.ca to discuss appropriate options. All information about a student's disability or medical condition remains confidential.

<https://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 2019-20 Undergraduate Academic Calendar online at <http://uwinnipeg.ca/academics/calendar/docs/important-notes.pdf>

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 <https://www.uwinnipeg.ca/respect>.

Misuse of Computer Facilities, Plagiarism, and Cheating

Academic dishonesty is a very serious offense and will be dealt in accordance with the University's policies.

Avoiding Academic Misconduct and Non-academic Misconduct. Students are encouraged to familiarize themselves with the Academic Regulations and Policies found in the University Academic Calendar at:

<https://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf>

Particular attention should be given to subsections 8 (Student Discipline), 9 (Senate Appeals) and 10 (Grade Appeals). Please note, in particular, the subsection of Student Discipline pertaining to plagiarism and other forms of cheating.

Detailed information can be found at the following:

- Academic Misconduct Policy and Procedures: <https://www.uwinnipeg.ca/institutional-analysis/docs/policies/academic-misconduct-policy.pdf> and <https://www.uwinnipeg.ca/institutional-analysis/docs/policies/academic-misconduct-procedures.pdf>

- Non-Academic Misconduct Policy and Procedures: <https://www.uwinnipeg.ca/institutional-analysis/docs/student-non-academic-misconduct-policy.pdf> and <https://www.uwinnipeg.ca/institutional-analysis/docs/student-non-academic-misconduct-procedures.pdf>
- “Avoiding Plagiarism”: <https://www.youtube.com/watch?v=UvFdxRU9a8g>

Misuse of Filesharing Sites. 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.

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.

Research Ethics: Students conducting research interviews, focus groups, surveys, or any other method of collecting data from any person, including family member, must obtain research ethics approval before commencing data collection. Exceptions are research activities done in class as a learning exercise. For submission requirements and deadlines, please visit: <http://www.uwinnipeg.ca/research/human-ethics.html>

Class Cancellation, Correspondence with Students and Withdrawing from Course

When it is necessary to cancel a class due to exceptional circumstances, the course instructor will make every effort to inform students via uwinnipeg email (and/or using the preferred form of communication, as designated in this outline), as well as the Departmental Assistant and Chair/Dean so that class cancellation forms can be posted outside classrooms.

Students are reminded that they have a responsibility to regularly check their uwinnipeg e-mail addresses to ensure timely receipt of correspondence from the University and/or the course instructor.

Please let course instructor know if you plan on withdrawing from the course. Note that withdrawing before the VW date does not necessarily result in a fee refund.

Topics to be covered (tentative list).

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
- Interoperability & Integration
- 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