



THE UNIVERSITY OF WINNIPEG

APPLIED COMPUTER SCIENCE

Course Number: ACS-2816-001
Course Name: Health Information Systems
Course Webpage: <https://nexus.uwinnipeg.ca/d2l/home/75601>

Instructor Information

Instructor: Victor Balogun
E-mail: vi.balogun@uwinnipeg.ca
Office Hours: Tuesday 12:00pm – 1:00 pm **3D18**
Class meeting time: Tue/Thu 10:00 am - 11:15 am **3C13**

Important Dates

1. First Class: Tuesday, January 6, 2026
2. Reading Week (no classes): February 15 – 21, 2026
3. Midterm Exam: Tuesday, February 24, 2026
4. Final Withdrawal Date w/o academic penalty*: Friday, March 13, 2026
5. Last Class: Thursday, April 2, 2026
6. Final Exam (Comprehensive): Date **TBD**
7. Final Exam Period: April 9 – 22, 2026
8. University closures: Louis Riel Day Monday, February 16, 2026
Good Friday Friday, April 3, 2026

*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 will provide an overview of the important topics in Health Informatics. It will discuss data as the building block for health care information including the basic concepts of data flow, data storage, and health record management within both private and public health care systems.

This course will provide the critical foundation needed by students in the Health Informatics and Information Systems streams to develop essential health information systems knowledge. It is aimed at developing students' understanding of the different types of information systems used in

the health care industry, and how these systems work together to ensure safe and secure exchange of personal health information and records. Students will explore important information system models and techniques used during the information life cycle. The students will also study the relationships between health information stakeholders with respect to the collection, storage, accessibility, sharing, maintenance, standardization, and security of health records within health information systems.

Evaluation Criteria

1. **Quizzes** (3 quizzes, to be done in class. Each quiz worths 4%) **12%**

2. **Midterm Exam (18%)** – *February 24, 2026*

- During the regular class time
- Missed exams will receive a mark of zero, unless a medical certificate is provided, no accommodation is made for missed exams.

3. **Group Discussions and Reflections (10%)**

- Students will be expected to read the textbook, lesson notes, study the Review Questions and watch posted videos/links (if any) ahead of the class.
- During class, students will be randomly distributed into groups.
- The instructor will provide a relevant topic or guiding questions for students to discuss relating to the lesson of the day.
- Students will discuss the topic/question in their groups for about **10 minutes**
- Students will be given limited time during class to write down their reflections/thoughts based on the discussion in the group discussion forum on Nexus.
- Each group might be required to appoint a representative to summarize/debrief each group's findings.
- Students will receive **marks** based on their group participation and reflection activities.

4. **HIS Project – Development & Presentations: (25%)**

- Students will be randomly organized into Project Teams.
- The instructor will provide a list of projects in the field of Health Information Systems (HIS) that the students/team will select from.
- Students, as a team will carry out the project using the Agile methodology that will be described in the class.
- The Project lifecycle will be divided into three distinct milestones for reviews and assessments as follows: (i) Project Planning Review (PPR), (ii) Mid Project Review (MPR), and (iii) Project Completion Review (PCR).

Project Deliverables:

- **Selection of Project Topic** – 0%
- **Submission of Project Proposal** - 3%
- **Project Planning Review (PPR) Report** – 5%
- **Mid Project Review (MPR) Report** – 5%
- **Project Completion Review (PCR) Report** - 5%

- **Final Presentations** and Software Product demo - 7% (Group 4%, Individual 3%)

5. Final Exam (35%) - Date TBD

- Cumulative

Test / Exam Requirements

- Photo ID is required for mid-term exam and the final exam. Students must be prepared to present their student ID.
- Midterm and Quizzes will be delivered via Nexus and proctored via Respondus.
- The final exam will be delivered in-person at an examination venue to be determined.
- Quizzes, Mid-term and Final exams are **Closed** book.

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

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-services>.

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 2024-25 Undergraduate Academic Calendar online at

<http://uwinnipeg.ca/academics/calendar/docs/important-notes.pdf>

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%

NOTE: Final grades require departmental/program approval and may be subject to change.

Required Text Book / Reading List

Biomedical Informatics, Computer Applications in Health Care and Biomedicine
 Shortliffe, Edward H.; Cimino, James J. (Eds)
 Springer 5th Edition 2021
 ISBN 9783030587208 (Hardcover)

Digital Health Care: Perspectives, Applications, and Cases

Phillip Olla, PhD; Joseph Tan, PhD
Jones & Bartlett Learning 1st Edition 2023
ISBN: 9781284153859

Prerequisite Information

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

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

Regulations, Policies, and Academic Integrity

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).

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

Detailed information can be found at the following:

- Academic Misconduct Policy and Procedures:
<https://www.uwinnipeg.ca/policies/docs/policies/academic-misconduct-policy.pdf> and
<https://www.uwinnipeg.ca/policies/docs/procedures/academic-misconduct-procedures.pdf>
- About Academic Integrity and Misconduct, Resources and FAQs:
<https://library.uwinnipeg.ca/use-the-library/help-with-research/academic-integrity.html>

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.

Academic Integrity and AI Text-generating Tools: The use of AI tools in this course is prohibited. This includes all forms of generative AI, like ChatGPT, Claude, Gemini, etc., as well as AI writing and paraphrasing tools, such as Grammarly, Quillbot, etc. If you are unsure if the use of a specific technology is permitted, ask the instructor prior to using the tool for coursework. Suspected misuse of AI may result in a report to the Senate Academic Standards and Misconduct Committee.

Non-academic misconduct: Students are expected to conduct themselves in a respectful manner on campus and in the learning environment, irrespective of the platform being used. Behaviour, communication, or acts that are inconsistent with a number of UW policies could be considered “non-academic” misconduct. More detailed information can be found here:

- **Respectful Working and Learning Environment Policy:**
<https://www.uwinnipeg.ca/respect/respect-policy.html> ,
- **Acceptable Use of Information Technology Policy:**
<https://www.uwinnipeg.ca/policies/docs/policies/acceptable-use-of-information-technology-policy.pdf>
- **Non-Academic Misconduct Policy and Procedures:**
<https://www.uwinnipeg.ca/policies/docs/policies/student-non-academic-misconduct-policy.pdf> and <https://www.uwinnipeg.ca/policies/docs/procedures/student-non-academic-misconduct-procedures.pdf>

Copyright and Intellectual Property: Course materials are the property of the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides—irrespective of format. 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, for example, photographing, recording, or taking screenshots of slides, presentations, lectures, and notes on the board. Students found to be in violation of an instructor's intellectual property rights could face serious consequences pursuant to the Academic Misconduct or Non-Academic Misconduct Policy; such consequences could possibly involve legal sanction under the Copyright Policy: <https://www.uwinnipeg.ca/policies/docs/policies/copyright-policy.pdf>

Privacy

Students have rights in relation to the collection of personal data by the University of Winnipeg.

- Student Privacy: <https://www.uwinnipeg.ca/privacy/admissions-privacy-notice.html>
- Zoom Privacy: <https://www.uwinnipeg.ca/privacy/zoom-privacy-notice.html>
- Exam and Proctoring: <https://www.uwinnipeg.ca/privacy/respondus-privacy-notice.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 Nexus.

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 the 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.

Student Wellness

The University of Winnipeg affirms the importance of student mental health and our commitment to providing accessible, culturally appropriate, and effective services for students. Students who are seeking mental health supports are encouraged to reach out to the Wellness Centre at studentwellness@uwinnipeg.ca or 204-258-3809. For community-based mental health resources and supports, students are encouraged to dial 2-1-1. This program of United Way is available 24/7 in 150 languages. Other resources and contact information can be found at the following link: <https://www.uwinnipeg.ca/student-wellness/contact-us.html>.

Sexual Violence and Human Rights Advisor (SVHRA)

Students who have experienced Sexual Violence can access support from the SVHRA. The SVHRA receives disclosures and can support students with on and off-campus reporting. In collaboration with the Sexual Violence Response Team (SVRT), the SVHRA also provides fast-track referrals to Student Wellness, academic accommodations, security support, and other on and off campus supports. The SVHRA and SVRT operate within a confidential, survivor-centered, and trauma-informed framework. <https://www.uwinnipeg.ca/respect/sexual-violence/>

Disclosures may be made in-person, email, by text, by phone, or Zoom/Teams.

5Ri55, 5th Floor (Rice Centre)

204.230.6660 – call or text (confidential line) svrt@uwinnipeg.ca

Topics to be covered (tentative)

- Health Informatics Overview
- Health Informatics Databases
- Digitizing the Medical Record
- Big Data Analytics & Artificial Intelligence in Health Care
- Public Health Informatics: Equity, Ethical, & Privacy Considerations
- Security & Privacy Issues
- Clinical Decision Support Systems
- Consumer Health Informatics
- Consumer Health Informatics Tools
- Compliance and Privacy of Health Information
- Exploring Digital Health Emerging Technologies
- Sensors and Wearable Electronics in Health Care
- Personalized Medicine, 3D Printing, and Digital Therapeutics
- Technology Transforming Health Care

A permitted or necessary change in mode of delivery may require adjustments to important aspects of course outlines, like class schedule and the number, nature, and weighting of assignments and/or exams.

In order to ensure a safe and comfortable learning environment for everyone, we kindly ask that all students refrain from wearing or using scented products while attending class.