



THE UNIVERSITY OF WINNIPEG

APPLIED COMPUTER SCIENCE

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| Course Number: | ACS-3909-002 |
| Course Name: | Advanced Internet Programming |
| Course Webpage: | https://nexus.uwinnipeg.ca/d2l/home/59006 |

Instructor Information

Instructor: Prof. Yaser Al Mtawa **Office:** 3D06B **E-mail:** y.almtawa@uwinnipeg.ca

Office Hours: Wed 1:30 pm - 2:30 pm (3D06B)

Class Meeting Time: Friday 2:30 pm-5:30 pm (Room: 1C16A)

Instructor's Home Page: <https://acs.uwinnipeg.ca/yalmtawa>

Important Dates

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|---|---|
| First Class: | Friday, January 12, 2024 |
| Reading Week (no classes): | February 18-24, 2024 |
| Midterm Test: | Friday, March 8, 2024 |
| Final Withdrawal Date w/o academic penalty: | Friday, March 15, 2024* |
| Last Class: | Monday, April 8, 2024** |
| Final Exam (Comprehensive): | TBD |
| University closures: | Louis Riel Day Monday, February 19, 2024 |
| | Good Friday March 29, 2024 |

* 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.

** Class make-up day: Monday, April 8 for Good Friday holiday closure.

Course Objectives/Learning Outcomes

This course provides students with a thorough knowledge of server-side web programming. Topics include n-tiered systems, session tracking, interfaces and stereotypes, dynamic web page design, database connections, and XML processing. Students gain considerable knowledge and experience by learning important features needed for e-commerce, applying advanced web application techniques, and utilizing web databases.

Evaluation Criteria

- Assignments (20%)
 - Three assignments, worth 6, 7, and 7%, respectively.
 - Due date will be posted on Nexus
 - Due at 11:59:59 pm (Nexus clock) on due dates
 - No late assignment will be accepted, or under special circumstances accepted with 20% off for each late day.
 - All assignments are to be completed individually and only submitted via Nexus
 - Students are responsible for making sure the correct files are submitted through Nexus.
- Midterm Exam (30%)
 - The midterm test is during class time
- Final Exam (50%)
 - The final exam covers all material discussed in the course

Test / Exam Requirements

- Photo ID is required for the exams
- Exams will be delivered in person.
- The use of computers, calculators, phones, or other electronic devices is not permitted during exams
- Midterm and final exams are closed book

Student Services and Information

- Students are responsible for regularly checking their UWinnipeg e-mail addresses to ensure timely receipt of correspondence from the University and/or their course instructors.
- 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 the opportunity for students to make up work or examinations without penalty. A list of religious holidays can be found in the 2020-21 Undergraduate Academic Calendar.
- Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams or during lectures/laboratories are encouraged to contact Accessibility Services (AS) at 204.786.9771 or <https://www.uwinnipeg.ca/accessibility-services/> to discuss appropriate options. All information about a student's disability or medical condition remains confidential.
- 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 at <https://www.uwinnipeg.ca/respect/>.

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.

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|----|-----------|----|----------|---|-----------|
| 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% |

Prerequisite and Restriction Information

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

- Requisite courses: A grade of at least C in ACS-2909/3, ACS-2814/3, and ACS-1904.

E-mail Communication Requirements

- E-mails from accounts at uwinnipeg.ca are usually not filtered by the UofW e-mail filter. Thereby, it is recommended that electronic communication used for the course utilize a UofW e-mail account or the Nexus platform to minimize the risk of filtering.
- Use 'ACS-3909-001' as subject in e-mail communication related to the course.

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 204.988.7611. 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.

Regulations, Policies, and Academic Integrity

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

Avoiding 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/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.

Non-academic misconduct. Students are expected to conduct themselves in a respectful manner on campus and in the learning environment irrespective of 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://copyright.uwinnipeg.ca/docs/copyright_policy_2017.pdf

Privacy

Students have rights in relation of the collecting of personal data the University of Winnipeg:
<https://www.uwinnipeg.ca/privacy/admissions-privacy-notice.html>.

Class Cancellation, Correspondence with Students and Withdrawing from Courses

- When it is necessary to cancel a class due to exceptional circumstances, the course instructor will make every effort to inform students via uwinnipeg e-mail 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 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.
- 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.

Text Book / Reading List / Tools

We will use the following books as guide, supplemented with readings throughout the course:

Recommended Textbooks:

- Web Programming and Internet Technologies: An E-Commerce Approach” Porter Scobey and Pawan Lingras
Publisher: Jones & Bartlett Learning; 2nd Edition (Sept. 22 2016)
ISBN 9781284070682
- B. A. Syed, Beginning Node.js.
Cambridge: O’Reilly, 2014.
- E. Brown, Web Development
with Node & Express.

Besides the information contained in the main texts, I may also distribute papers, and discuss appropriate material and examples from other sources. Students are responsible for all material covered in the class.

Topics to be covered (Tentative)

Node.js

1. Understanding Node.js
2. Core Node.js
3. Node.js Packages
4. Events and Streams
5. Getting Started with HTTP

Express

1. Introducing Express
2. Saving Time with Express
3. Quality Assurance
4. The Request and Response Objects
5. Templating with Handelbars
6. Form Handling
7. Cookies and Sessions
8. Middleware
9. Sending Email
10. Production Concerns

11. Persisting Data
12. Rest APIs and JSON
13. Static Content
14. Implementing MVC in Express
15. Security
16. Debugging
17. Deployment and Scalability

Note that all topics listed may not be covered and may be offered in a slightly different time order.