**Web Programming**

**COSC 360 001 2021S1**

**Summer** **2021 – Term 1**

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**Instructor:** Dr. Mohamed Abdelpakey **E-mail:** mohamed.abdelpakey@ubc.ca

**Classroom Schedule**: Mon/Thu 1-4:30 pm

**Location:** <https://ubc.zoom.us/j/65859919323?pwd=R0ZsZlJidWtjS0Y5eFJ6TnJDR3hBQT09>

**Office Hours:** Wednesday 11:30-1:00 pm or by appointment

**Course Website:** Canvas

**Text Book:** Fundamentals of Web Development 2nd edition, Randy Connolly & Ricardo Hoar, Pearson Education Inc. ISBN 13: 978-0-13-448126-5

**Labs**

**L01:** Mon/Wed    5:30-7:30 pm      **TA:** Sherif Elbishlawi              **Email:** bishlawi@mail.ubc.ca

**L02:** Tue/Thu       9:30-11:30 **TA:** Khandoker Ayman     **Email:**mdayman@student.ubc.ca

**Calendar Course Description**

Design and implementation of web-based information systems and app development. Rich user interfaces, asynchronous updates, client-side and server-side scripting using standard technologies such as HTML, CSS, SVG, JavaScript, PHP. Data manipulation with SQL, JSON, XML. Modern scripting frameworks and libraries.

*Prerequisite*: All of COSC 121, COSC 304 and third-year standing.

**Course Format**

Interactive classes consisting of topic introduction, understanding evaluation, and concept mastery with in-class and lab exercises. Practical skills and applications of topics are re-enforced with lab activities and project work. Course materials are available on Canvas.

Midterm break and other calendar dates can be found at <http://okanagan.students.ubc.ca/calendar/>

**Course Overview, Content and Objectives**

This course will provide learners with the opportunity to develop a technical understanding of the Internet environment and the structure of the World Wide Web. Core concepts will be covered through pre-readings and exercises. In class, learners will build upon these concepts through discussions, exercises, and coding examples. Learners will gain a solid foundation of modern front end and backend development and integration strategies. Technical skill will focus on the design and implementation of effective web sites. Fundamental knowledge and skills will be acquired that can be applied to web development projects in a multitude of industries and of varying complexity. In addition to practical skill and theory, learners will explore asynchronous JavaScript, web services, frameworks and libraries to efficiently build advanced websites. Learners will advance their skills through both theory and practical concepts involving MVC, and AJAX, enabling them to build an easy to maintain high performing web sites.

**Learning Outcomes**

Upon completion of this course, students will be able to:

* Design and build a simple web site that organizes information effectively
* Understand and utilize the DOM
* Use cascading style sheets to create style standards for a web site
* Create a navigational framework that matches the content and genre of the site
* Compare and contrast different CSS layout techniques
* Utilize CSS frameworks to simplify complex CSS layout tasks
* Explain separation of concerns as it applies to the design and implementation of a web site
* Describe the issues involved in developing a web interface
* Utilize client-side scripting to perform tasks such as element transitions and data validation
* Describe how JavaScript interacts with client environments
* Summarize the need and issues involved in web site implementation and integration
* Explain why accessibility issues are an important consideration in web page development
* Design and implement a web interface
* Explain and compare media file-formats including lossy lossless compression
* State how server-side technology works
* Utilize server-side scripting to programmatically generate HTML in response to client responses
* Compare and contrast server-side scripting technologies
* Build a web application utilizing PHP
* Utilize databases to create dynamic web applications
* Investigate and describe mechanisms for maintaining state in web applications
* Utilize cookies and web storage to maintain web application state
* Describe RESTful web services
* State potential shortcoming in web security
* Design and implement secure web services
* Write an asynchronous web application using programming best practices
* Integrate third-party web services into an application
* Compare and contrast common data interchange formats used in web applications
* Identify how content can be created/refreshed automatically
* Understand how to construct a web application that can handle exceptions gracefully

**Evaluation Criteria and Grading**

Lab assignments 20%

Quizzes 40%

Final exam 40%

Final grades will be based on the evaluations listed above and the final grade will be assigned according to the standardized grading system outlined in the UBC Okanagan Calendar.

**Late Policy**

Generally, late labs/assignments are not accepted. In case of extreme situations such as illness, childbirth, or bereavement, or by prior arrangement with the instructor, labs/assignments can be rescheduled. The following policy is applied to late assignments without an excuse:

**0 to 24 hours late:** 25% mark deduction (e.g., if an assign. is worth 20 marks, then 5 marks will be deducted regardless of the mark you get in the assignment; no negative marks will be given).

**24 to 48 hours late:** 50% mark deduction

**More than 48 hours:** no mark

**Passing Criteria**

In order to pass the course:

* Students MUST pass exam portion of the course. In other words, you must achieve 50% of the combined exams grade.

**Expectations**

Students expected to deliver the assignments on time and attend the quizzes.

The bottom line is to pass the final exam to pass the course.

**Tentative Course Schedule and Required Readings**

The following table provides a tentative schedule for the term and may be adjusted dependent on the class needs. See the updated schedule on the course website.

|  |  |
| --- | --- |
| **Week** | **Topics** |
| **Week 1** | **Topic 1:** Course overview, network basics  **Topic 2:** Basic HTML elements and structure  **Topic 3:** CSS basics: styling |
| **Week 2** | **Topic 4:** HTML tables and forms, form control elements  **Topic 5:** Advanced CSS – floats, positioning, and CSS frameworks  **Topic 6:** Media, images, file formats |
| **Week 3** | **Topic 7:** Client-Side scripting, Javascript, DOM, Form Handling  **Topic 8:** Client-Side Scripting with JavaScript, Syntax, DOM, Events and Forms |
| **Week 4** | **Continue**  **Topic 9:** Java Script with JQuery  **Topic 10:** Server Side Development with PHP |
| **Week 5** | **Topic 11:** PHP with Arrays and Superglobals  **Topic 12:** Database Connections with PHP |
| **Week 6** | **Topic 13:** Managing State, Query Strings, Information Passing, Cookies, and Session State  **Topic 14:** Error Handling and Validating User Input  **Final exam review** |

**Grading Practices**

Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014>

**Final Examinations**

The examination period for **S2021 T-1 is June 21 – 25, 2021.**   Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member.  Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on **Academic Concession** can be found under **Policies and Regulation in the *Okanagan Academic Calendar***<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>

**Academic Integrity**

The academic enterprise is founded on honesty, civility, and integrity.  As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity.  At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required.  This also means you should not cheat, copy, or mislead others about what is your work.  Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed.  For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President’s Advisory Committee on Student Discipline.  Careful records are kept in order to monitor and prevent recurrences.

A more detailed description of academic integrity, including the University’s policies and procedures, may be found in the Academic Calendar at: <http://okanagan.students.ubc.ca/calendar/index.cfm?tree=3,54,111,0>.

**Cooperation vs. Cheating**

Working with others on assignments is a good way to learn the material and we encourage it. However, there are limits to the degree of cooperation that we will permit. Any level of cooperation beyond what is permitted is considered cheating.

When working on programming assignments, you must work only with others whose understanding of the material is approximately equal to yours. In this situation, working together to find a good approach for solving a programming problem is cooperation; listening while someone dictates a solution is cheating. You must limit collaboration to a high-level discussion of solution strategies, and stop short of actually writing down a group answer. Anything that you hand in, whether it is a written problem or a computer program, must be written by you, from scratch, in your own words. If you base your solution on any other written solution, you are cheating. If you provide your solution for others to use, you are also cheating.

**Copyright Disclaimer**

Diagrams and figures included in lecture presentations adhere to Copyright Guidelines for UBC Faculty, Staff and Students <http://copyright.ubc.ca/requirements/copyright-guidelines/> and UBC Fair Dealing Requirements for Faculty and Staff <http://copyright.ubc.ca/requirements/fair-dealing/>.  Some of these figures and images are subject to copyright and will not be posted to ***Canvas.***  All material uploaded to ***Canvas*** that contain diagrams and figures are used with permission of the publisher; are in the public domain; are licensed by Creative Commons; meet the permitted terms of use of UBC’s library license agreements for electronic items; and/or adhere to the UBC Fair Dealing Requirements for Faculty and Staff. Access to the ***Canvas*** course site is limited to students currently registered in this course. Under no circumstance are students permitted to provide any other person with means to access this material. Anyone violating these restrictions may be subject to legal action. Permission to electronically record any course materials must be granted by the instructor. Distribution of this material to a third party is forbidden.

**Grievances and Complaints Procedures**

A student who has a complaint related to this course should follow the procedures summarized below:

* The student should attempt to resolve the matter with the instructor first. Students may talk first to someone other than the instructor if they do not feel, for whatever reason, that they can directly approach the instructor.
* If the complaint is not resolved to the student's satisfaction, the student should e-mail the Associate Head,

Dr. Yves Lucet at yves.lucet@ubc.ca or the Department Head, Dr. John Braun.

**Student Service Resources**

**Disability Assistance**

The Disability Resource Centre ensures educational equity for students with disabilities, injuries or illness. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, e-mail us or visit our website for more information.

**Web:** <http://students.ok.ubc.ca/drc/welcome.html> **E-mail** DRC at: [drc.questions@ubc.ca](mailto:drc.questions@ubc.ca)

**Equity, Human Rights, Discrimination and Harassment**

UBC Okanagan is a place where every student, staff and faculty member should be able to study and work in an environment that is free from human rights-based discrimination and harassment. If you require assistance related to an issue of equity, discrimination or harassment, please contact the Equity Office, your administrative head of unit, and/or your unit’s equity representative. **UBC Okanagan Equity Advisor: ph. 250-807-9291**

**Web:** <https://equity.ok.ubc.ca/> **E-mail:**  [equity.ubco@ubc.ca](mailto:equity.ubco@ubc.ca)

**Health & Wellness - UNC 337**

At UBC Okanagan health services to students are provided by Health and Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Health and Wellness for more information or to book an appointment.

**Web:** [www.students.ok.ubc.ca/health-wellness](http://www.students.ok.ubc.ca/health-wellness) **Email:** [healthwellness.okanagan@ubc.ca](mailto:healthwellness.okanagan@ubc.ca)

**Sexual Violence Prevention and Response Office (SVPRO)**

A safe and confidential place for UBC students, staff and faculty who have experienced sexual violence regardless of when or where it took place. Just want to talk? We are here to listen and help you explore your options. We can help you find a safe place to stay, explain your reporting options (UBC or police), accompany you to the hospital, or support you with academic accommodations. You have the right to choose what happens next. We support your decision, whatever you decide. Visit [svpro.ok.ubc.ca](https://svpro.ok.ubc.ca/) or call us at 250-807-9640

**Independent Investigations Office (IIO)**

If you or someone you know has experienced sexual assault or some other form of sexual misconduct by a UBC community member and you want the Independent Investigations Office (IIO) at UBC to investigate, please contact the **IIO**. Investigations are conducted in a trauma informed, confidential and respectful manner in accordance with the principles of procedural fairness. You can report your experience directly to the **IIO by** calling 604-827-2060.

**Web:** <https://investigationsoffice.ubc.ca/> **E-mail:** [director.of.investigations@ubc.ca](mailto:director.of.investigations@ubc.ca)

**The Hub**

The Student Learning Hub (LIB 237) is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**. **Web:** (<https://students.ok.ubc.ca/student-learning-hub/>) **Ph:** 250-807-9185.

**SAFEWALK -** Download the UBC SAFE – Okanagan app.

Don't want to walk alone at night? Not too sure how to get somewhere on campus?

**Call Safewalk at 250-807-8076**  For more information: <https://security.ok.ubc.ca/safewalk/>