Project C: Web Design

& Database Management

Credit Outline

Credit: COURSE CSE2920: CSE PROJECT C

*Level*: Intermediate

*Prerequisite*: None

*Supporting Courses*: CSE 2120: Data Structures 1

CSE 1210: Client-side Scripting 1

*Description*: Students will be immersed in an authentic, industry-inspired project where they will iteratively develop a dynamic webpage. This webpage will access a database where it stores information. Students will use HTML, PHP, and MYSQL to display static and dynamic information.

*Project Course Focus*: As per the Computer Science Program of Studies, CSE Project courses must connect with a minimum of two CTS courses, one of which must be at the intermediate level. There is an implicit overlap between most CSE courses, but the explicit outcomes that will be from CSE 2120: Data Structures 1 and CSE 1210: Client-side Scripting 1 (courses taken by this year’s CS30 students). Below the relevant outcomes are listed. Overall, this project credit is designed to give students a hands-on and practical exposure to web development and related theories.

**CSE 2120: Data Structures 1**

1. analyze and represent the nature, structure and utility of fundamental data types

2. create and/or modify algorithms that make effective use of fundamental data structures to solve problems

3. create and/or modify programs based on algorithms that make effective use of fundamental data structures

**CSE 1210: Client-side Scripting 1**

3. design, write and debug code using an appropriate Internet markup language

3.1 demonstrate the ability to use an appropriate markup language coding environment

3.2 use appropriate techniques to design a markup language document

3.3 translate design documents into hypertext documents using code elements such as tags, attributes and hyperlinks

3.4 compare the results of the script with the intent of the design document and modify, as required, including:

3.4.1 use appropriate debugging techniques to compare the original design with the implemented document

3.4.2 make changes, as required, to either the design and/or the document to bring both in line with the original intent

Created from the [Alberta Education Program of Studies for CTS: Computer Science](https://archive.education.alberta.ca/media/2160632/cse.pdf)

## **Required Materials**

One-to-one computers for students with internet access

Brackets or Notepad++ editor

Putty

Linux server - running Apache and a MYSQL database

SQL server accounts set up for each individual student

WinSCP

# **Assessment**

Throughout the credit students will acquire additional experience with HTML, PHP, and SQL and will inevitably be more suited to complete earlier assignments. If student would like to revise or resubmit an assignment, this is an option that will be available to them. There is a lot of material though, so students should strive to complete assignments throughout the term instead of leaving it until the end. Please speak to your teacher if this is an opportunity you are interested in taking advantage of.

|  |  |
| --- | --- |
| **Assignment** | **Total Credit Percentage** |
| **Project Journal** | **15%** |
| **Static Webpage** | **35%** |
| **Dynamic Webpage** | **50%** |

## **Project Journal**

Students will be required to keep a journal outlining their daily progress on their assignments for this credit. They are encouraged to also reflect on their learnings during the lessons.

## **Static Website**

The first major assignment students will review HTML containers and industry conventions for website creation.

## **Dynamic Webpage**

The second major assignment carries on from the second assignment. Students will be expected to build a website that communicates with a database.

# **Implementing Universal Design for Learning**

UDL is a proactive approach to designing material before students enter the classroom on the curriculum level in order to improve students’ access to material. The three components of UDL: representation, engagement, and expression/action are super important. Lesson materials should be presented in multiple ways to maximize accessibility to multiple learning styles and also to support students with conditions that prevent them from accessing certain mediums of content. I endeavour to set up my assignments so students can express their understanding of the content in multiple ways instead of insisting on one form that they will be assessed to. If students wish to be assessed in different ways during the term, I can be open and flexible to meet their needs and design content in the future to further accommodate students with similar needs. Through using different interests, and being open to students representing their knowledge by incorporating their own interests, I hope to have multiple means of engagement. I appreciate that UDL shifts the focus from disability to variability of learners. Please approach me if you have any feedback on lessons or assignments.

For this course, this means having closed captioning available for media. For direct instruction, this means having notes available for students before-hand to review and print. During instruction, this means students having the notes available to type on, having slides to view, me verbally presenting information, and acting concepts out.

# **Opportunities for Differentiated Instruction**

This course is designed to be highly flexible or differentiable on specific learners. Differentiated Instruction (DI) acknowledges that students differ by interests, learning profile, and level of functioning. Course content can therefore be differentiated to make instruction appeal to different interests, reach different learner profiles, and if necessary adjust task level to meet different levels of functioning. DI focuses on the student level and instruction can be differentiated by student, group, or class depending on how students vary.

According to interest, students can propose other projects that map onto course outcomes.