

CIS 201 – Web Programming

Course Syllabus and Calendar – Spring 2009

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Brigham Young University Hawaii

1 Overview

This is the last time we will teach this class. It is being phased out in favor of a more advanced class, CIS 401, Web Application Programming, that will rely on additional prerequisites in order to take students farther into the development and programming process.

The Internet, and especially the World Wide Web, have changed our lives in ways so far reaching and profound that history will rank it with the steam engine and the printing press among influential technologies. It changes everything.

The hardware and operating system on which a program runs is called its platform. The world wide web is the platform for the 21st century. Today we write programs to run on the web so that people everywhere can, through our programs, interact with us.

The Spring 2009 class project is to create a working electronic commerce shopping cart. This will develop and demonstrate your knowledge and proficiency in programming. Along the way we will create a number of smaller web projects. By the end of the course you will be able to design and develop your own web programs.

2 General Calender

Programming skills build one upon another. The early skills will take time to master but will then be used constantly as more advanced skills are added.

We assume students are already familiar with programming and can write programs in some language to create output, get keyboard input, make decisions, and perform repetitive actions. Some students

will also have skill with arrays and subroutines. But some students may have forgotten what they once knew.

We will begin with a review of basic programming, including output, input, and simple calculation. We will introduce online programming (output only, html, img).

We will continue with a review of choices and decision making (equals, not equals, less than, greater than, etc.), including Boolean operators (and, or, not). We will expand our treatment of online programming (output only, choices).

We will continue with a review of repetition (looping). We will expand our treatment of online programming (output only, looping).

Then we will introduce arrays and subroutines.

We will introduce online programming input and concepts of state and event-driven operation. We will learn about regular expressions. We will modify earlier online programs to include inputs.

Finally we will introduce database and structured query language. We will create a shopping cart.

2.1 Testing

Quizzes: Most days will begin with a brief quiz focused on knowledge and skills recently covered in class. The quiz will generally start at the exact start of class time and last for five to ten minutes. Immediately after the quiz we will have opening prayer and start the lecture portion of the class.

Exams: About once a week (on Friday) there will be a Final Exam. This is to give you many opportunities to pass the various sections of the final.

3 Grading

See the individual sections below for details of how the points are done. At this time there are 41 points possible. You need this many points for each grade:

5 D; 7 D+; 11 C-; 15 C; 20 C+; 25 B-; 29 B; 33 B+; 36 A-; 39 A

Exams: Your CIS 201 grade is calculated on the basis of points in several categories of skill. Normally these recognize your performance on Exams, but they may also recognize your performance on labs and projects. Each exam consists of sections worth some number of points. If you get a question partly right, you may get partial credit. You can retake each section as many times as you want before the end of the semester to maximize your grade. Exams are individual work.

Labs: When exams show sufficient ability, points can also be earned by completing labs. This is the only way to earn the top grades. Most labs are online projects. I encourage you to help each other but there are limits. (1) Identify. Each screen must show the author's name clearly. Each program must begin with a comment that identifies the author. (2) Copy ideas, not code. Friends can teach, help debug, and explain, but not contribute code. Code you find on the Internet or elsewhere may be studied but must not be included in anything you submit. Copying ideas is okay. Copying code is plagiarism (not allowed). (3) If you wrote every line and you understand it, you can turn it in without guilt, no matter how much help you got.

3.1 Basic String

(io, var, seq,.chomp; style)

Earned for performance on an in-class exam.
1 point for correctly doing basic string handling.
+1 point for good programming style.

3.2 Basic Numeric

(io, var, seq; story; style)

Earned for performance on an in-class exam.
1 point for correctly doing basic calculation.
+1 point for solving a story problem.
+1 point for good programming style.

3.3 Choices Numbers

(if/else; and/or; story; style)

Earned for performance on an in-class exam.

1 point for correctly doing basic numeric comparison.

+1 point for a comparison involving and/or/not.

+1 point for solving a story problem.

+1 point for good programming style.

3.4 Choices Strings

(lt, le, gt, ge, eq, ne; style)

Earned for performance on an in-class exam.

1 point for correctly doing basic string comparison.

+1 point for good programming style.

3.5 Repeat

(while/for; next/last; nested; style)

Earned for performance on an in-class exam.

1 point for correctly doing a basic loop.

+1 point if the loop normally involves using next or last.

+1 point if it involves nested loops.

+1 point for good programming style.

3.6 Arrays as Lists

(push, pop, shift; foreach; style)

Earned for performance on an in-class exam.

1 point for correctly processing arrays as lists.

+1 point for doing it in the context of a foreach loop.

+1 point for good programming style.

3.7 Arrays Indexed

([1], [-1], for, while; style)

Earned for performance on an in-class exam.

1 point for correctly processing an array by index number

in the context of a loop (normally for or while).

+1 point for good programming style.

3.8 Subroutines

(sub, positionals, my, return; foreach)

Earned for performance on an in-class exam.

1 point for correctly construction a subroutine, including proper

use of local variables and the return statement.

+1 point for correctly handling positional input parameters.

+1 point for correctly handling variable parameter lists.

+1 point for good programming style.

3.9 Online

(html/img; cgi/regex; state)

Earned for performance on in-class project activities.

1 point for correctly creating a (static) HTML web page.

+1 point for correctly using img tags to embed pictures.

+1 point for correctly using CGI to write a dynamic web page.

+1 point for correctly processing inputs from the web page.

+1 point for correctly passing state using hidden fields.

3.10 Project Hangman

(CGI,HTML)

Earned for performance on out-of-class lab work.

You must have 25 in-class points before you can earn this.

2 points for correctly building the hangman project.

3.11 Database TableView

(SQL,DB)

Earned for performance on out-of-class lab work.

You must have 25 in-class points before you can earn this.

1 point for correctly running tableviewer without headings.

+1 point for correctly displaying table headings.

3.12 Database Buy One

Earned for performance on out-of-class lab work.

You must complete TableView before you can earn this.

1 point for correctly displaying the inventory table.

+1 point if the "Buy One" buttons cause inventory to go down.

+1 point if inventory correctly stops at zero.

3.13 Database Manager

Earned for performance on out-of-class lab work.

You must complete Buy One before you can earn this.

1 point for correctly displaying the inventory table.

+1 point for correctly adding a new inventory item.

+1 point for correctly modifying/deleting an existing item.

3.14 Database Shop Cart

Earned for performance on out-of-class lab work.

You must complete Manager before you can earn this.

1 point for making a working shopping cart.

+1 point for making a working checkout procedure.

4 The Course

- **Course Number:** CIS 201
- **Title:** Web Programming
- **Course Description:** (tba)
- **Textbook:** (recommended) any book on Perl.
- **Start/End:** Apr 20 to Jun 03, 2009
- **Classroom:** GCB 111
- **Class Time:** MWF 7:30 AM – 9:40 AM
- **Website:** <http://colton.byuh.edu/>

4.1 The Instructor

- **Instructor (me):** Don Colton
- **My email:** doncolton2@gmail.com
- **Website:** <http://colton.byuh.edu/>
- **My Office:** GCB 128
- **Office Hour:** WF 10:00 AM – 11:00 AM

5 Standard Statements

All syllabi are encouraged or required to address certain topics. These are generally considered to be common sense, but we find that it is useful to mention them explicitly anyway.

5.1 Dress and Grooming Standards

The dress and grooming of both men and women should always be modest, neat and clean, consistent with the dignity adherent to representing The Church of Jesus Christ of Latter-day Saints and any of its institutions of higher learning. Modesty and cleanliness are important values that reflect personal dignity and integrity, through which students, staff, and faculty represent the principles and standards of the Church. Members of the BYUH community commit themselves to observe these standards, which reflect the direction given by the Board of Trustees and the Church publication, "For the

Strength of Youth.” The Dress and Grooming Standards are as follows:

Men. A clean and neat appearance should be maintained. Shorts must cover the knee. Hair should be clean and neat, avoiding extreme styles or colors, and trimmed above the collar leaving the ear uncovered. Sideburns should not extend below the earlobe. If worn, moustaches should be neatly trimmed and may not extend beyond or below the corners of mouth. Men are expected to be clean shaven and beards are not acceptable. Earrings and other body piercing are not acceptable. For safety, footwear must be worn in all public places.

Women. A modest, clean and neat appearance should be maintained. Clothing is inappropriate when it is sleeveless, strapless, backless, or revealing, has slits above the knee, or is form fitting. Dresses, skirts, and shorts must cover the knee. Hairstyles should be clean and neat, avoiding extremes in styles and color. Excessive ear piercing and all other body piercing are not appropriate. For safety, footwear must be worn in all public places.

5.2 Accommodating Special Needs

I am personally committed to making this course as easy as possible (but no easier). To this end, I give many quizzes in the testing center without time limits. To fully teach important concepts, I give lab work, but it is not constrained by the amount of time available in class. I publish important assignments on my web site so you do not have to rely on note taking or memory to know what you need to do. I allow an unlimited number of attempts on labs that are graded by GradeBot, and make it available 24 hours a day throughout the semester. I believe that many cases of special needs are already accommodated by these practices.

For in-class examinations (midterms and final exam) I apply a strict time limit and do not allow outside resources. To avoid giving an unfair advantage, I require those who need a special accommodation to establish their rights by working through the BYUH Special Needs Coordinator.

Brigham Young University Hawaii is committed to providing a working and learning atmosphere which reasonably accommodates qualified persons with disabilities. If you have any disability that may impair your ability to complete this course successfully, you

are invited to contact the Students With Special Needs Coordinator, Leilani A’una or her successor at 675-3518. Reasonable academic accommodations are made for all students who have qualified documented disabilities.

5.3 Plagiarism

<http://en.wikipedia.org/wiki/Plagiarism> has a wonderful article on plagiarism. Read it if you are not familiar with the term. Essentially, plagiarism is when you present the intellectual work of other people as though it were your own. This may happen by cut-and-paste from a website, or by group work on homework. In some cases, plagiarism may also create a violation of copyright law. If you borrow wording from someone else, identify the source.

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to appropriate disciplinary action administered through the university Honor Code Office, in addition to academic sanctions that may be applied by an instructor.

Inadvertent plagiarism, whereas not in violation of the Honor Code, is nevertheless a form of intellectual carelessness that is unacceptable in the academic community. Plagiarism of any kind is completely contrary to the established practices of higher education, where all members of the university are expected to acknowledge the original intellectual work of others that is included in one’s own work.

In this course group work is permitted and encouraged but you are not allowed to turn in work that is beyond your understanding, whether you give proper attribution or not. Make sure you understand what you are submitting and why each line is there.

Faculty are responsible to establish and communicate to students their expectations of behavior with respect to academic honesty and student conduct in the course. Observations and reports of academic dishonesty shall be investigated by the instructor, who will determine and take appropriate action, and report to the Honor Code Office the final disposition of any incident of academic dishonesty by completing an Academic Dishonesty Student Violation Report. If the incident of academic dishonesty involves the violation of a public law, e.g., breaking and enter-

ing into an office or stealing an examination, the act should also be reported to University Police. If an affected student disagrees with the determination or action and is unable to resolve the matter to the mutual satisfaction of the student and the instructor, the student may have the matter reviewed through the university's grievance process.

5.4 Sexual Harassment

BYUH's policy against sexual harassment complies with federal Title IX of the Education Amendments of 1972 to protect university students from student-to-student sexual harassment both in and out of the classroom setting. Any incidents of such student-to-student harassment should be reported to either the Director of Human Resources (293-3713) or the Honor Code Office (293-3531). Allegations of sexual harassment are taken seriously. Upon receiving a report of sexual harassment, the Director of Human Resources will take appropriate action to resolve and correct conditions resulting from individual perceptions or from inappropriate behavior.

5.5 Syllabus is Subject to Change

It is possible that I will revise aspects of the course as we go along. Any changes I make are likely to be to your advantage. If any of my changes seems unfair to you, let me know. I will try to correct it.