Fluency in Information Technology

Bulletin Description
The nature of computers, their capabilities, and limitations. How computers work, popular applications, problem-solving skills, algorithms and programming. Lectures, weekly readings, and laboratory assignments.

General Course Info
Term: TERM FALL 2014
Department: COMP
Course Number: 101
Section Number: 001
Time: TR 3:30-4:45
Location: SN 014
Website: http://www.cs.unc.edu/Courses/comp101-f14

Instructor Info
Name: Diane Pozefsky
Office: FB 146
Email: pozefsky@cs.unc.edu
Phone: 919 590-6117
Web: http://www.cs.unc.edu/~pozefsky
Office Hours: Specific Hours TBD; Open Door Policy

Textbooks and Resources
There are no required or recommended textbooks. Sakai will be used primarily for the returning of comments and grades. All assignments will be submitted through the student’s university website on isis.unc.edu. Required software includes Komodo Editor, Filezilla, Chrome and Microsoft Excel. The first three of these are free software downloads from the web. The last of these is available free through ITS (included as part of student fees). All recommended or required resources are available or referenced on the class website.
**Course Description**

The objective of this course is to introduce students to computers and technology. Rather than rote learning of how to do things, the student will learn to understand how things work and will therefore be able to continue growing skills beyond the course. As a Quantitative Reasoning (QR) course, a key objective of this course is to teach the student how to analyze problems and attack them in a logical sequence of steps. This is a skill that will be worked on throughout the semester.

The primary technologies that will be taught are web page development and spreadsheets.

**Target Audience**

This course is intended for non-majors with a desire to be more comfortable with computer technology and to learn specific skills that they may be able to apply in their courses and career plans. It is a basic introduction to computational thinking and teaches the fundamentals through specific skills. Students pursuing studies in data-intensive fields or in fields that require the use of technology will find the course beneficial as will students with a need to communicate through the internet.

**Prerequisites**

No prerequisites.

No credit by placement or exam.

**Goals and Key Learning Objectives**

By the end of the semester, the student will

- Understand in general terms what computers are and what they can and cannot do, including the ability to
  - Identify and describe hardware and software components of web-based applications
  - Explain how different kinds of information (from numbers to pictures) can be represented in a computer
- Understand what an algorithm is, how to develop them and how to use them to solve problems
- Be able to build a web site using only basic concepts while able to learn advanced functions on their own
- Be adept using the basic features of spreadsheets while able to experiment on their own with advanced features
- Understand how to retrieve data from the web and analyze it in ways to produce new, interesting results
Disclaimer
The professor reserves the right to make changes to the syllabus, including assignment and project due dates. These changes will be announced as early as possible and will be reflected on the course website. If there are discrepancies between this syllabus and the website, the website is considered the definitive information.

Course Requirements
Lectures are presented in the form of videos that will be posted immediately after the prior class. The video will be accompanied by work templates to help you learn the material. I also provide simple examples of the proper use of the elements being taught. In addition to their references in the video and related materials, there is a single directory of the snippets and samples.

Primary work in this class are lab assignments that are done in 3 person teams and are completed during class. Teams will be changed frequently at the beginning of the semester but the goal is that you find a team that works well together. Working individually or in pairs is permitted but the assignments and labs are all intended to be done in teams of three and there will be no reduction in scope if students choose to work in smaller groups. There will be 29 labs in the class, one each day except the first. The labs will be graded on a 0-3 basis before you leave class. Basically, the grading is

- 0: missed class
- 1: tried, but apparently no one did any work before class
- 2: got the general idea, but not quite
- 3: perfect

This component will be based on a total of 75 points instead of the 87 that are available. Therefore, you may miss a class or not quite get an assignment without penalty.

There will also be short (10-15 minute) quizzes every other week. These quizzes are intended to make sure that students understand the basic concepts. They will be designed to be long enough that students may not complete them during the allotted time and such that students will not have time to research answers during the quiz. They are, however, intended to be answered based on the labs that have been done during the past two weeks; students should not need to study specifically for the quiz.

There will be 7 major assignments. Assignments will be done as a team. Like labs, they will be well specified, with only formatting differences allowed. There will be no research or invention required. Assignments will be due at midnight of Friday and will be graded before class on Tuesday. Assignments will be graded on a 10 point scale.

There may be a few labs and assignments that are done individually in order to assure that everyone has the environment set up properly.
In addition, there will be 5 projects given during the semester. Unlike assignments, the topics for these projects are at your team's choosing; you will be given a general class of topics that you need to address and the elements required in the web page. Rules for original work are similar to any paper: direct borrowing must be attributed, as should general concepts. As we will discuss when we study images, they must be acceptable for re-use. Projects will be due at midnight of Friday and will be graded before class on Tuesday. Projects will be graded on a 20 point scale.

For each of the 5 projects, each student will be asked to critique 3 websites built by their classmates. The feedback will be given to the site developer without attribution and will be used in assigning the grade. (There will be between 3 and 9 critiques depending on the number of sites submitted.) The assignments will be made early Saturday and the reviews are due by 8 pm on Monday. (This short turnaround is necessary in order to return grades on Tuesday.) The reviews themselves will be graded on a 0-5 scale based on whether the reviews were completed on a timely basis and whether they looked at all of the key issues. There will be a single grade for all 3 reviews.

The final project will be similar to the earlier projects and will be due at the final exam. For the final exam, the class will be broken up into smaller groups and each team will present their project to the group. The grade for the final project will include the site produced, the presentation, and the individual's participation in the review (both verbal and online). The first two of these are a single grade for the group, but the last one is an individual grade.

**Key Dates**

Assignments and projects are due at midnight on Friday. There will be no assignments due on holiday weekends.

The final exam is at 4 pm on Thursday, December 11.

**Grading Criteria**

All assignments, projects and labs will be turned in by posting on the UNC web site under your onyen with the name that is given in the assignment. Labs will be posted by one person on the team. All team members will receive the same grade. For assignments associated with a spreadsheet, the spreadsheet will be linked from the web page.

Assignments and projects are due at midnight on Friday. They must be posted properly. If it is not properly posted, it is not there and is given a 0. Grades and comments will be returned through Sakai. We will be learning to use validation tools for web pages and all assignments and labs must validate WITHOUT errors. Any validation error is an automatic 0.
<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labs</td>
<td>25</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Assignments</td>
<td>25</td>
</tr>
<tr>
<td>Projects</td>
<td>25</td>
</tr>
<tr>
<td>Reviews</td>
<td>5</td>
</tr>
<tr>
<td>Final Exam</td>
<td>10</td>
</tr>
</tbody>
</table>

**Course Policies**

*Attendance:* Labs will only be graded in class and therefore you will not be able to get lab credits if you are not in class.

*Late Policy:* We will count the number of days that assignments and projects are late. A day is 24 hours. You will be given 3 free late days. Beyond the 3, your final grade will be reduced by the number of late days. Example: if you accumulate 8 late days, you will be given a pass on the first 3, but your final grade will be reduced by 5 points. In case of illness, accident, and family emergencies *that are discussed with me in a timely fashion*, late days need not be used.

The course final is given in compliance with UNC final exam regulations and according to the UNC Final Exam calendar.

**Honor Code**

Collaboration and peer-learning are encouraged in the class. All assignments, labs, projects and exams are open book, open notes, and open network. In the case of assignments and projects, the work must be that of the student. Directly taking text from other sources is not acceptable. Short excerpts from other sources may be quoted and properly cited. Similarly, styling pieces and techniques may be borrowed from other sources, but must be credited appropriately. If you have questions about whether you are borrowing too much, speak to the professor.
## Course Schedule

The following is a draft of the class lecture schedule.

<table>
<thead>
<tr>
<th>Aug 19 Introduction to course</th>
<th>21 Software and HTML basics</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 links and CSS basics</td>
<td>28 box model and colors</td>
</tr>
<tr>
<td>Sept 2 formatting in context</td>
<td>4 images</td>
</tr>
<tr>
<td>9 anchor points</td>
<td>11 multipage sites</td>
</tr>
<tr>
<td>16 floating elements</td>
<td>18 tables</td>
</tr>
<tr>
<td>23 positional formatting</td>
<td>25 multimedia</td>
</tr>
<tr>
<td>30 introduction to spreadsheets</td>
<td>Oct 2 spreadsheets to tables</td>
</tr>
<tr>
<td>7 Booleans</td>
<td>9 conditionals</td>
</tr>
<tr>
<td>14 table functions</td>
<td>16 FALL BREAK</td>
</tr>
<tr>
<td>21 graphs</td>
<td>23 importing data, sorting &amp; filtering</td>
</tr>
<tr>
<td>28 strings</td>
<td>30 introduction to JavaScript</td>
</tr>
<tr>
<td>Nov 4 data types</td>
<td>6 functions</td>
</tr>
<tr>
<td>11 conditionals</td>
<td>13 arrays</td>
</tr>
<tr>
<td>18 loops and onload</td>
<td>20 strings</td>
</tr>
<tr>
<td>25 jQuery</td>
<td>27 THANKSGIVING</td>
</tr>
<tr>
<td>Dec 2 HTML Canvas</td>
<td>11 Final</td>
</tr>
</tbody>
</table>

Last updated 8/19/2014