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 and laboratory assignments.

General Course Info
Term: FALL 2017
Department: COMP
Course Number: 101
Section 001 Time: TR 9:30-10:45
Section 002 Time: TR 11:00-12:15
Location: SN 011
Website: http://www.cs.unc.edu/Courses/comp101-f17

Instructor Info
Name: Diane Pozefsky
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Office Hours: check calendar on website

Learning Assistants
Thomas Allen (tjallen@live.unc.edu) [Section 002]
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Office Hours
See calendar
Changes will be reflected on the class calendar.

Other Sources for Help
Grading in this class is based on the best practices as taught in the class. If you get help from people other than the LAs or instructor or find possible solutions on the web, you may produce a web page that is correct but does not meet our standards. Neither of these are valid reasons for not meeting our standards.
A major source of help outside of office hours is Piazza (link on website). Asking questions on Piazza means that all of the instructors see the question and you therefore have a better chance of getting your question answered in a timely fashion. In addition, your classmates will be following the questions as well and can often answer your question even more quickly. Again, all instructors monitor Piazza and will be able to clarify and/or correct any answers.

Textbooks and Resources
There are no required or recommended textbooks. Sakai will be used primarily for the returning of comments and grades. All assignments and projects will be submitted through the website as explained in class. Any computed grades shown on Sakai should be disregarded. (See grading below.) Required software includes Komodo Edit, 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 those for web page.

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. Computer science majors interested in taking this course require the approval of the instructor.

Prerequisites and Placement Credit
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

Disclaimer
The professor reserves to 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
Each class will begin with a 30-minute lecture that is followed by a 45-minute lab that allows the student to apply the concepts just presented. Students are encouraged to do the lab in pairs or small groups. Your work will be checked off by an instructor or LA before the next introductory lecture begins. Students are strongly encouraged to change seats and work with different students at the beginning of the semester in order to find students who may be suitable partners.

Topics are accompanied by a significant number of resources, including presentation slides, code examples, reference materials and videos. These materials will be posted before the beginning of class. In addition, there is a single directory of videos and examples that students will find a valuable resource.

Labs
The labs will be graded before you leave class. Basically, the grading is

  • 0: missed class
  • 1: tried but missed the general concept
  • 2: got the general idea

You are allowed to miss 3 (three) labs without penalty. That is, the grade will be based on 3 less labs than are given.

If a student has an excused absence for class, they will be allowed to submit the lab before the next class. At the beginning of the next class, a solution to the lab will be posted and the lab will not be accepted.

With a large class, it is possible that we occasionally miss posting the grade for a lab that was properly checked off. Challenges to whether the lab was checked off must be made within 3 days of the posting and must be made by submitting a grade problem form (a google form available on the website). Speaking or emailing the instructor is not sufficient.
Tests

There will be five (5) 45-minute tests during the semester. They are scheduled for September 7, September 21, October 5, November 2, and November 16. The exam will be followed by a shorter lecture and lab. By the nature of this course, each of them will be cumulative and will be asking you to apply principles. Students who are permitted extra time accommodations should make arrangements to complete the exam at the same time as the rest of the class in order to not miss class time. The low grade of the exams will be dropped.

Final Exam

The final exam is a practical application of the material taught during the class. You will be assigned to a team of 3, with your team members being people you have not worked with before. You will be given a set of topics to choose from as well as source material that you can use. Much like the projects during the semester (see below), you will be asked to create a web site with a set of required elements.

Assignments and Projects

Assignments and projects may be done in teams of up to 3 people. Working individually or in pairs is permitted but there will be no reduction in scope if students choose to work in smaller groups. If you chose to work alone, you are strongly encouraged to find a classmate to review your website before submission. Our experience shows that such reviews do have a positive impact in your grade. There will be an assignment or project most weeks of the semester.

Assignments will be well specified, with only formatting differences allowed. There will be no research required.

Unlike assignments, the topics for 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. Images that are used must be acceptable for re-use; when we study images, we will identify some generally useful resources.

Assignments and projects will generally be due at 5 p.m. on Saturday and graded before the beginning of class on Tuesday. (We generally grade on Sunday and therefore give you as much time as possible to complete the work.) Both will be graded on a 20 point scale. Note that waiting until Saturday to start an assignment has the disadvantage that you will have much less instructor support.

There will be considerably fewer projects than assignments (9 assignments and 4 projects) and therefore each project is worth a higher percentage toward your final grade.
Key Dates

Assignments and projects are generally due as described above. There will be assignments or projects due almost every week. Assignments and Projects will be posted at least one week before they are due.

The final exams follow the regular university schedule and for section 001 it is at 8 am Tuesday, December 12 and for section 002 is at noon on Thursday, December 14. The exams are held in Sitterson 011. Students who wish to take the exam during the other section’s time will be accommodated as long as space is available. A form for switches will be made available after Thanksgiving.

Grading Criteria

All assignments and projects will be turned in by posting on the provided web site under your onyen following class instructions. Labs will be posted the same way. Each student will maintain a web page that links to all their work; we will build this as our first lab. All team members will receive the same grade.

Assignments and projects 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 through the URI validation WITHOUT errors. There will be a significant penalty for validation errors: 25% of the grade. Challenges to deductions must also be made within 3 days of posted grades and again must be done through the google form.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labs (grade computed based on 3 less labs than are done)</td>
<td>25</td>
</tr>
<tr>
<td>Tests (low grade dropped)</td>
<td>20</td>
</tr>
<tr>
<td>Final Exam (no make ups possible)</td>
<td>5</td>
</tr>
<tr>
<td>Assignments</td>
<td>25</td>
</tr>
<tr>
<td>Projects</td>
<td>25</td>
</tr>
</tbody>
</table>

To reiterate, I do not use Sakai to compute grades and attempt to block it from attempting to present any grades. If it should present grades, you should ignore those numbers and use the above rubric to estimate your grade.

There will be an extra credit project due on Thanksgiving weekend. It will be posted well before the due date so that you can complete it before Thanksgiving break. If you choose to do the project, you may earn up to 5 extra points on your grade (that is your grade will be computed as above and then the points that you have earned will be added to it.) There will be no late submissions accepted for the extra credit so you need to decide before you have all your grades as to whether you want to submit it.
While I would prefer to assign final letter grades based on class performance, I have grown tired of arguments with students so I now have a fixed grade ranges. Yes, they are high standards, but as I need to choose cutoffs outside of the class performance, I need to make them high. Grades are computed without rounding. Thus 94.999 is still less than a 95.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Numeric Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt;= 95</td>
</tr>
<tr>
<td>A-</td>
<td>&gt;= 90</td>
</tr>
<tr>
<td>B+</td>
<td>&gt;= 88</td>
</tr>
<tr>
<td>B</td>
<td>&gt;= 84</td>
</tr>
<tr>
<td>B-</td>
<td>&gt;= 80</td>
</tr>
<tr>
<td>C+</td>
<td>&gt;= 78</td>
</tr>
<tr>
<td>C</td>
<td>&gt;= 74</td>
</tr>
<tr>
<td>C-</td>
<td>&gt;= 70</td>
</tr>
<tr>
<td>D+</td>
<td>&gt;= 68</td>
</tr>
<tr>
<td>D</td>
<td>&gt;= 60</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60</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. The reason for this is that our primary goal for the labs is to assure that you are learning the material and our goal is to help you rather than focusing on the grade.

Late Policy: We will count the number of days that assignments and projects are late. They are not considered turned in unless you have submitted the google form, at which time the assignment or project will be graded.

A day is 24 hours. You will be given 7 free late days. Beyond the 7, your final grade will be reduced by 1 point for each additional late day. Example: if you accumulate 8 late days, you will be given a pass on the first 7, but your final grade will be reduced by 1 point.

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 assignments or projects are the work of multiple students, all names must
appear on the website. If multiple students work on the same website, all of their home pages should point to the SAME copy, even if it is on another student’s space. Warning, we will grade the first copy of a multi-authored website that we find. The same product posted with different names is considered to be illegally copied. Be sure to include all names. 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 and key assignments. The calendar on the website is the definitive one.

<table>
<thead>
<tr>
<th>Tuesday</th>
<th>Thursday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 22 intro to web</td>
<td>24 files, folders, CSS</td>
<td></td>
</tr>
<tr>
<td>29 HTML</td>
<td>31 validation, context</td>
<td>Sept 2 ASSIGNMENT</td>
</tr>
<tr>
<td>5 classes</td>
<td>7 EXAM, pseudo-elements</td>
<td>9 ASSIGNMENT</td>
</tr>
<tr>
<td>12 alerts</td>
<td>14 box model</td>
<td>16 PROJECT</td>
</tr>
<tr>
<td>19 links</td>
<td>21 EXAM, fonts</td>
<td>23 ASSIGNMENT</td>
</tr>
<tr>
<td>26 JavaScript</td>
<td>28 images, multimedia</td>
<td>30 ASSIGNMENT</td>
</tr>
<tr>
<td>Oct 3 tables</td>
<td>5 EXAM Excel for tables</td>
<td>7 PROJECT</td>
</tr>
<tr>
<td>10 writing functions</td>
<td>12 <em>University Day</em></td>
<td>14 ASSIGNMENT</td>
</tr>
<tr>
<td>17 assignment stmts</td>
<td>19 <em>Fall Break</em></td>
<td>21 ASSIGNMENT</td>
</tr>
<tr>
<td>24 float</td>
<td>26 forms</td>
<td>28 PROJECT</td>
</tr>
<tr>
<td>31 writing to the page</td>
<td>Nov 2 EXAM, onload</td>
<td>4 ASSIGNMENT</td>
</tr>
<tr>
<td>7 arrays</td>
<td>9 booleans</td>
<td>11 ASSIGNMENT</td>
</tr>
<tr>
<td>14 if</td>
<td>16 EXAM, switch</td>
<td>18 PROJECT</td>
</tr>
<tr>
<td>21 nesting</td>
<td>23 <em>Thanksgiving</em></td>
<td>25 EXTRA CREDIT</td>
</tr>
<tr>
<td>28 loops</td>
<td>30 compound loops</td>
<td>Dec 2 ASSIGNMENT</td>
</tr>
<tr>
<td>5 canvas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Last update 22 August 2017*