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: SPRING 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-s17

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: Monday 10-12 (check calendar)
Tuesday 8-9
Wednesday 8-9
Thursday 8-9
Friday 10-12 (check calendar)
Open Door Policy

Learning Assistants
Thomas Allen (tjallen@live.unc.edu) [Section 002]
Jon Kaplan (jkap@cs.unc.edu) [Section 001]
Matt Krause (matt1123@live.unc.edu) [Section 002]
Emily Newman (newmane@live.unc.edu) [Section 001]
Parth Patel (parth96@ad.unc.edu) [Section 001]
Jillian Troftgruben (troft@live.unc.edu) [Section 002]

Office Hours
See calendar
Changes will be reflected on the class calendar.
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. 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 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
The course is run in a partially flipped manner. At the end of each class, the next topic is introduced in lecture. A video and exercises covering “how” will be available following class. Students are expected to work through this material at their own pace before the next class. At the beginning of the following class, a lecture will present best practices and usage tips. This is also an opportunity to request clarifications. Following the lecture, there will be a 45-minute lab where you will work 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, snippets and samples that students will find a valuable resource.

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.

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 class and must be made by speaking directly to the instructor either during office hours or before or after class.

There will also be three full-period tests during the semester. They are currently scheduled for February 9, March 2, and April 6. The final exam is also a 75-minute exam. By the nature of this course, each of them will be cumulative and will be asking you to apply principles. The four exams will be weighed equally and the low grade will be dropped.

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 the beginning of class on Tuesday and graded within a week. Both will be graded on a 20 point scale.

There will be fewer projects than assignments (approximately half as many) 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.

The final exams follow the regular university schedule and for section 001 it is at 8 am Friday, May 5 and for section 002 is at noon on Monday, May 1. 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.

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 soon as we have learned all of the needed tools. 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 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 in person.

If there are validation errors, you may resubmit the assignment or project to gain those points back, but that must be done in person and will cost you 3 late days. The 3 late days are charged whether or not the validation works. (See late policy.)
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 assignment given in the middle of the semester. If you choose to do the assignment, 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 assignment so you need to decide before you have all your grades as to whether you want to submit the extra credit assignment.

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>
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<tr>
<td>D+</td>
<td>&gt;= 68</td>
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<tr>
<td>D</td>
<td>&gt;= 60</td>
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<tr>
<td>F</td>
<td>&lt; 60</td>
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</tbody>
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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 come to the instructor’s office at which time the assignment or project will be graded. If you cannot make the available office hours, you are to contact the instructor to schedule an appointment.

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 (or multiple copies if they are posted more than once). The same product posted with different names is considered to be illegally copied. 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. The calendar on the website is the definitive one

<table>
<thead>
<tr>
<th>Tuesday</th>
<th>Thursday</th>
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</thead>
<tbody>
<tr>
<td>Jan 12 course intro</td>
<td>19 intro to HTML</td>
</tr>
<tr>
<td>17 web intro</td>
<td>26 CSS</td>
</tr>
<tr>
<td>24 proper HTML</td>
<td>Feb 2 links, ids, and classes</td>
</tr>
<tr>
<td>31 CSS box model</td>
<td>9 EXAM</td>
</tr>
<tr>
<td>7 images and colors</td>
<td>16 fixed position formatting</td>
</tr>
<tr>
<td>14 float</td>
<td>23 constants and variables</td>
</tr>
<tr>
<td>21 intro to JavaScript</td>
<td>Mar 2 EXAM</td>
</tr>
<tr>
<td>28 forms</td>
<td>9 Excel and Uploads</td>
</tr>
<tr>
<td>7 tables</td>
<td>16 SPRING BREAK</td>
</tr>
<tr>
<td>14 SPRING BREAK</td>
<td>23 writing to the page</td>
</tr>
<tr>
<td>21 subroutines</td>
<td>30 parameters</td>
</tr>
<tr>
<td>28 canvas</td>
<td></td>
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<tr>
<td>Apr 4 arrays</td>
<td>6 EXAM</td>
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<td>--------------</td>
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</tr>
<tr>
<td>11 functions</td>
<td>13 booleans</td>
</tr>
<tr>
<td>18 simple conditionals</td>
<td>20 advanced conditionals</td>
</tr>
<tr>
<td>25 loops</td>
<td>27 nested loops</td>
</tr>
</tbody>
</table>

_Last update 12 January 2017_