CS164 Syllabus

Introduction to Computing:
From Transistors to Turing Machines

Fall 2024

Instructor Information:
    Name: Brian L. Stuart
    E-Mail: bls96@drexel.edu
    Office Hours: TBD
    Office: 3675 Market St, Office 1132
    Phone: 706-255-2372(C)

Catalog Description: An introduction to the field of computer science. Exposure to core areas (selected from algorithms, artificial intelligence, computer architecture, databases, graphics, human-computer interaction, programming languages, scientific computation, software engineering) while introducing and reinforcing the importance of programming.

Text: None

Objectives: The primary focus of this course is to provide an overview of the breadth of the field of Computer Science. Along the way, you will be exposed to how computers work, the connection between software and hardware, some major types of software, elements of the theory of computing, and the HTML and Tranquility languages. Note, however, that although some of the activities in this course do involve writing HTML and Tranquility, this is not a web development course. The roles of HTML and Tranquility are illustrative of the process of using languages in computing.

Topics:
This list of topics is as follows:
- What is Computer Science?
- The role of abstraction in Computer Science
- Boolean algebra and logic circuits
- Number systems and data representation
- Computer structure
- Programming Languages
- Fundamental programming concepts
- Graphics
- Artificial Intelligence
- Cryptography
- Theory of computation
- Basic Programming with Tranquility

Grading: There will be several projects in this class which will comprise 30% of the grade. In addition, there will be several lab assignments worth a total of 35%. The remaining 35% will be ascribed to a midterm exam (15%) and a final (20%).
To properly understand my grading, you must first change your ideas about grades. If you appeal a grade as ask me to give you "points back" that's thinking about grades backward. That makes it sound like you think you are born with 100 points, and you lose points for grevious failures. The reality is that you start with 0 points, and I give you poing for things you do that demonstrate understanding. Futhermore, individual items only have numeric grades; they do NOT have letter grades. The letters only come into the picture at

the end of the term when I decide on how numbers map to letters. The mapping will be no more constrained than a 90-80-70 scale, but could include some curving.

Assignment Guidelines: This course includes a mixture of individual and group work. The exams are to be the result of individual effort. Unless stated otherwise by the instructor, the exams will be closed-book, closed-notes, closed-friends, closed-Google, closed-Wikipedia, etc. For the most part, the labs are open to group collaboration. In many cases, the lab instructions will detail specific forms of cooperation that are expected. Unless stated otherwise, all out-of-class assignments are to be done individually.

Project Submissions: You should submit projects electronically via Blackboard. Submit each file of a project individually, rather than using any form of archiving, especially zip. Do NOT include any spaces in file names. Textual submissions are subject to some constraints. I do not have the time, money, disk space or inclination to support every commercial, proprietary, closed, undocumented word processor format out there. For that reason, I do not accept submissions in any of them. You must submit your assignments in an open well-documented format. One option is plain ASCII text. Please note that source code is normally plain ASCII text; the file name extension has nothing to do with the file format. If you need to express equations or some other material that you feel you can't express well in plain ASCII, then I encourage you to use a typesetting language such as troff or TEX. If you are using a word processor, then save the file as PDF and submit that.

Academic Integrity: For all problem sets and programming projects, you are encouraged to discuss the assignments and solution strategies together. However, the collaboration stops there. All written solutions and code must be the result of individual effort.

Unapproved collaboration or use of code from unapproved sources are violations of academic integrity. Additionally, any posting of questions, assignments, or exams from this course to any external discussion sites will be considered a violation of academic integrity. This includes, but is not limited to, Chegg, CourseHero, Koofers, Slader, stackoverflow, and Reddit. Any use of ChatGPT or similar things will be considered a violation of academic integrity. The sanction for academic integrity violations can range from a zero grade on the assignment to summary failure for the course at the discretion of the instructor.

Incomplete Policy: Recent changes to university incomplete policy have made incompletes essentialy unworkable. Consequently, I do not intend to do incomplete any longer. If you have or anticipate difficulty in getting all of the assignments completed, you need to talk to me directly as early as possible.

Academic Policies:
This course follows university, college, and department policies, including but not limited to:
- Academic Integrity, Plagiarism, Dishonesty and Cheating Policy:
  http://www.drexel.edu/provost/policies/academic_dishonesty.asp
- Student Life Honesty Policy from Judicial Affairs:
  http://www.drexel.edu/provost/policies/academic-integrity
- Students with Disability Statement:
  http://drexel.edu/oed/disabilityResources/students/
- Course Add/Drop Policy:
  http://www.drexel.edu/provost/policies/course-add-drop
- Course Withdrawal Policy:
  http://drexel.edu/provost/policies/course-withdrawal
- Department Academic Integrity Policy:
  http://drexel.edu/cci/resources/current-students/undergraduate/policies/
  cs-academic-integrity/
- Drexel Student Learning Priorities:
  http://drexel.edu/provost/assessment/outcomes/dslp/
- Office of Disability Resources:

`http://www.drexel.edu/disability-resources/`

The instructor(s) may, at his/her/their discretion, change any part of the course before or during the term, including assignments, grade breakdowns, due dates, and schedule. Such changes will be communicated to students via the course web site. This web site should be checked regularly and frequently for such changes and announcements.

Students requesting accommodations due to a disability at Drexel University need to request a current Accommodations Verification Letter (AVL) in the ClockWork database before accommodations can be made. These requests are received by Disability Resources (DR), who then issues the AVL to the appropriate contacts. For additional information, visit the DR website at

`http://drexel.edu/disability-resources/`

or contact DR for more information by phone at 215.895.1401, or by email at `disability@drexel.edu`.