

Syllabus: CISC106 - General Computer Science for Engineers

Instructor: Jonathan Leighton
Office: Smith Hall, Rm. 413
Office Hours: MW: 10:30 am – 12:00 pm, and by appointment
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Lectures: Gore Hall, Rm. 104
MW 8:40 am – 9:55 am

Lab Sections: Spencer Lab, Rm. 010
30L - M 12:20 pm – 1:10 pm
31L - M 1:25 pm – 2:15 pm

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Course Description: CISC106 focuses on principles of computer science illustrated and applied through programming in a general purpose language. Programming projects illustrate computational problems, styles, and issues that arise in computation. The current languages taught are Python (11 weeks) and MATLAB (3 weeks).

Co-requisite: MATH241

Intended Course Audience:

- Engineering student - but NOT computer science major
- Beginning programmer - someone who has NEVER programmed before
- Students who can follow instructions precisely

Textbook, Software and Equipment:

- (required) *Starting out with Python, 3rd ed.*, by Tony Gaddis, Pearson/Addison-Wesley, 2014.
- (required) A USB flash memory drive to save your work between one lab period and the next.
- (required) This class will use i>clickers and Sakai. Before the second class, you must log onto to the class Sakai website (sakai.udel.edu/portal/) and register your i>clicker using the "i>clicker" link in the left hand margin. (Do NOT register your clicker at www.iclicker.com). Be sure to bring your i>clicker to every class to obtain full participation credit. For more info about clickers, see: <http://sites.udel.edu/ats-student-response/faqs-for-students-iclicker/>.
- (required) Please see the Resources folder on the course Sakai website, for the document entitled "Installing Python 3.4.3 and Matplotlib". **IMPORTANT:** Carefully read and follow the instructions in this document.

Useful Pythons Links:

- docs.python.org/release/3.4.3/tutorial
- docs.python.org/3.4
- www.greenteapress.com/thinkpython (not all compatible with Python v3.4)

Course Objectives By the course's end, you should be able to:

1. Develop abstract, computational data models
2. Follow and explain an explicit Design Recipe to go from an idea to a tested, working program
3. Develop inputs to test for program correctness
4. Write programs over atomic data, classes, mixtures of data, and data of arbitrary size
5. Use basic input and output libraries for text, graphics, plots, and files
6. Use function composition
7. Use conditional statements
8. Understand the concepts of: state, mutation, and scope
9. Write and understand iterative programs using for and while loops
10. Write and understand recursive programs
11. Understand basic searching algorithms and their complexity
12. Recognize basic time/space behavior of simple programs
13. Write programs for numeric problems
14. Use MATLAB at an introductory level

Assignments and Grading:

- Exams:
 - Midterm 3/23/16 (20%)
 - Final TBD (25%)
- Programs (2) (20%)
- Labs (5) (20%)
- MyProgrammingLab (5%)
- Lab Attendance (5%)
- Class Attendance/Participation/clicker (5%)

Grading:

1. Certain grade guarantees are defined below. For example, a student earning 83.3% of the total course points is guaranteed to receive a grade of B or better. In the professor's subjective opinion, if the above scale does not fairly represent the class' achievement as a whole, grades may be curved up (e.g., lowering the threshold for an A- from 90% to 89%). Grades will never be curved down. Any adjustment will apply to all students. This grading policy has one exception to ensure mastery of skills, and to ensure that one lab partner is not doing an unfair portion of the labs/programs.
 - **EXCEPTION:** A student that fails both exams cannot receive a course grade higher than a D+, and the course grade cannot be more than four grade increments higher than your best exam grade. For example, if a student's best exam grade is a C, the course grade can be no higher than B+.

A	A-	B+	B	B-	C+	C	C-	D+	D	D-
93.3%	90.0%	86.7%	83.3%	80.0%	76.7%	73.3%	70.0%	66.7%	63.3%	60.0%

2. **Lateness Policy:** All assignments have a due date and a latest submission date, which is 2 days after the due date. Unexcused late assignments will be penalized 10% of the earned points per day or fraction thereof (e.g., 2 minutes late counts as one day late) to the latest submission date. Without a documented university-approved excuse (e.g., illness, family emergency), assignments will not be accepted more than 2 days late.
3. **Attendance**
 - Students are required to attend ALL lab sessions. Attendance is marked by your TA as follows: Absent = 0, Late = 1, Present = 2, Excused = no grade (excused grades are not counted in your course grade).
 - Students are expected to attend ALL class lectures. Attendance is evaluated indirectly through participation in clicker questions. Students are responsible for anything taught or announced

in lecture. Studies have shown that the most significant factor in getting a good grade in a computer science class is simply attending and taking good notes.

4. Submission of Assignments:
 - All assignments must be submitted electronically to the course Sakai site. Do NOT email your assignment to the Professor or TA.
 - Lab 1 is done individually. All other labs and programs are done in pairs. Both members of the pair must be in the same lab section. Both members of the pair must fully contribute to and understand each assignment. If one member of the pair does not contribute a fair share (for example, cannot explain what his/her program does), that member's grade may be reduced accordingly. **Students may change partner at any time, and should do so if their partner is not fairly contributing.** Note that, if there is no one else available to partner with, one or both students may have to work independently until a partner can be found.
 - All assignments must include both your name and your partner's name.
 - Please periodically check Sakai to verify your grades are recorded correctly.
5. Finally, a philosophical note on grades. I do the best I can to measuring how much course material you demonstrate that you know. This evaluation is done through assignments and tests. I do not attempt to grade intelligence. I do not grade based on how many hours you put into the course.

Sakai Announcements/Email: Sakai Announcements/Email is the only consistent method of communication I have with the entire class. It is imperative that you know that you are receiving mail from the class Sakai list. Anything announced at least 24 hours prior is considered your responsibility to know. Check email regularly, as well as before, during or after any unusual event (i.e. power outages, snow, tests, holidays).

Academic Honesty: Discussion with others to better understand material from class or the text, or to better understand general programming concepts is ENCOURAGED. Those discussions must end when working on your specific assignments. Except for working with your lab partner, students in one pair are PROHIBITED from accessing or comparing assignment answers with those of any other person, prior to submitting the assignment. Students may not use any web site that contains answers. Copying all or portions of another group's program or lab is plagiarism, a serious offense, and the one most common in computer science courses. Anyone that provides program code to another group is also guilty of academic dishonesty. Both will be prosecuted in accordance with the University's Policy on Academic Honesty.

If you are struggling with an assignment, seek help from a teaching assistant or from the instructor. If you do not have sufficient time to complete an assignment, then submit a partial solution. Do not get answers from, or compare answers with, another person or group. Note that by putting your name on your submission, you are claiming that you were a full participant in doing the work that resulted in your submission. If your lab partner writes the solution to an assignment without your participation, you are engaging in academic dishonesty by including your name on the submission. If your lab partner writes the solution without your participation, and it turns out that they engaged in academic dishonesty, you will also be held liable for academic dishonesty if your name is included on the submission. **Fully participate in your assignments!** Make sure that you understand what is being submitted, and have no doubts about its origin. If you did not participate in, or do not understand the solution that you're submitting, remove your name or don't submit it. Refer to the www.udel.edu/studentconduct website for more information.

Note that submitted assignments are compared (by computer) with each other and with submissions from past CISC106 classes, where appropriate. Entering i>clicker responses on behalf of another student is considered academic dishonesty. Anyone found with more than one clicker will have them confiscated and will be prosecuted in accordance with the university's Policy on Academic Honesty.

Laptops and cell phones: I expect your full attention in class. Cellphone usage or using your laptop/tablet for anything not directly related to the lecture, is inappropriate and disrespectful. At the beginning of class, turn off or silence your cell phone. The only permitted uses of a laptop/tablet during lecture time are taking notes, or using IDLE or MATLAB.