CS 111 - Discovering Computer Science

Fall 2020

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Office Hours**:** Posted on our course Notebowl website

Course Description This course is an introduction to computational problem solving. Students will develop their abilities to abstract (or model) otherwise complex problems and generate elegant and efficient solutions. Students will practice these skills by developing computer programs that solve problems motivated by research in the sciences. Additional topics may include Monte Carlo methods, data analysis, population dynamics, computational biology, genetic algorithms, cellular automata, networks, data mining, and fractals.

Textbook *Discovering Computer Science* by Havill. 1st Ed. ISBN: 9781482254143

Software Programming assignments will be written in the Python programming language.

Grading Students earn their grade by completing in-class quizzes each week and submitting HW assignments bi-weekly to Notebowl. In addition, there will be a special final HW assignment. The final grade will be computed according to the following weights:

Distribution:

Category	**Quizzes**	**HW**	**Final HW**
Weight	30%	60%	10%

Grading Scale:

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
>97	>93	>90	>87	>83	>80	>77	>73	>70	>67	>63	>60	<60

Participation Policy Participation in CS 111 is essential, mandatory, and non-negotiable. Students with poor participation may be subject to a grade penalty at my discretion.

Quizzes Every Wednesday, students will take an in-class quiz on the material from the previous week. Questions are a mix of free-response and multiple choice. All quizzes are completed on NoteBowl.

I drop the two lowest quiz scores. **There are no opportunities to "make up" missed quizzes**; missed quizzes will result in a score of zero for that quiz.

Homework Students will complete bi-weekly homework assignments, due every other Monday. HW descriptions will be posted to Notebowl. These will generally require the use of the Python programming language.

All HW assignments will be submitted to Notebowl. To earn credit for the assignment, HW must be submitted in the file format specified in the HW description.

Final Homework The last HW of the semester will be due on the date of our final exam. This special HW will be cumulative, and cannot be dropped from the final grade. Details on the coverage of the quiz will be discussed later in class.

Tentative Schedule of Textbook Coverage

Week	Topic	Week	Topic
1-2	Ch 1-2: Intro to computation and elementary functions/arithmetic	9-10	Ch 8: Data analysis, lists and tables
3-4	Ch 3: Data Abstraction, functions, programming style and structure, scopes and namespaces	11-12	Ch 9-10: Cellular automata, Digital Images, Recursion
5-6	Ch 4-5: Growth and decay modeling, iterative methods. Random walks, Monte Carlo	13-14	Ch 11: Searching and sorting algorithms
7-8	Ch 6: String processing and text documents.		

Academic Integrity Proposed and developed by Denison students, passed unanimously by DCGA and Denison's faculty, the Code of Academic Integrity requires that instructors notify the Associate Provost of cases of academic dishonesty. Cases are typically heard by the Academic Integrity Board which determines whether a violation has occurred, and, if so, its severity and the sanctions. In some circumstances the case may be handled through an Administrative Resolution Procedure. Further, the code makes students responsible for promoting a culture of integrity on campus and acting in instances in which integrity is vio- lated.

Academic honesty, the cornerstone of teaching and learning, lays the foundation for lifelong integrity. Academic dishonesty is intellectual theft. It includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for evaluation. This standard applies to all work ranging from daily homework assignments to major exams. Students must clearly cite any sources consulted—not only for quoted phrases but also for ideas and information that are not common knowledge. Neither ignorance nor carelessness is an acceptable defense in cases of plagiarism. It is the student's responsibility to follow the appropriate format for citations. Students should ask their instructors for assistance in determining what sorts of materials and assistance are appropriate for assignments and for guidance in citing such materials clearly. For further info about the Code of Academic Integrity, see http://Denison.edu/academics/curriculum/integrity.

Disabilities Any student who feels he or she may need an accommodation based on the impact of a disability should contact me privately as soon as possible to discuss his or her specific needs. I rely on the Academic Support & Enrichment Center in 104 Doane to verify the need for reasonable accommodations based on documentation on file in that office.

Appropriate Use of Course Materials The materials distributed in this class, including the syllabus, exams, handouts, study aids, and in-class presentations, may be protected by copyright and are provided solely for the educational use of students enrolled in this course. You are not permitted to redistribute them for purposes unapproved by the instructor; in particular you are not permitted to post course materials or your notes from lectures and discussion on commercial websites. Unauthorized uses of course materials may be considered academic misconduct.

Covid Clause Due to the unpredictability of the COVID-19 pandemic, this syllabus is subject to change in response to public health concerns at my discretion. Students will be notified of any change both in class and by email.