

Course Syllabus

WTP Computer Science

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Staff

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Schedule

Day	Topics	Textbook readings
Week 1: Programming Fundamentals		
Monday	6/28 Introduction and Course Overview	Chapter 1, Appendix A
Tuesday	6/29 Variables, Expressions, Statements and User Input	Chapter 2, 5.1-3, 5.11, 8.1, 8.4
Wednesday	6/30 Control Statements and Lists	Chapter 5.4-7, 7, 8.3, 8.5-7, 10.1-5
Thursday	7/1 Functions	Chapter 3, 6.1-4
Friday	7/2 Algorithms and Complexity - Searching, Sorting	Handout on algorithms and notation
Week 2: Advanced Topics		
Monday	7/5 Review (more on Strings, Lists and Dictionaries)	Chapter 8.6-10, 10.6-9, 11.1-4
Tuesday	7/6 Objects and Graphics	Chapter 15, 17.1-6
Wednesday	7/7 Inheritance	Chapter 18
Thursday	7/8 Recursion	Chapter 5.8-10, 6.5-7
Friday	7/9 Data Structures - Lists and Dictionaries, Stacks, Queues	Chapter 11, 12
Week 3: Project		
Monday	7/12 Review (More on Objects, Recursion and Data Structures)	Chapter 13
Tuesday	7/13 Final Project	
Wednesday	7/14 Final Project	
Thursday	7/15 Final Project	
Friday	7/16 Final Project	

Textbook

Allen B. Downey, *Think Python: How to Think Like a Computer Scientist*, 3rd ed., Green Tea Press, 2008.
<http://greenteapress.com/thinkpython/thinkpython.pdf>

Website

Handouts and problem sets will be posted here: <http://people.csail.mit.edu/oshani/wtp>

Classes

The lecture will be held in 32-044 followed by a lab in 32-083 every weekday from 9:00-10:45 and 11:00-12:45. We will hand out an outline of the lecture at the beginning of the class. You can look over it and make notes as the lecture progresses. The goal is to try to let you pay more attention to the lecture instead of trying to copy down every word. After the lecture we will hand out any other supplementary notes, the problem set for that day, the readings for the next day and the problem set solutions from the previous day.

Class participation is welcomed and encouraged. Ask questions both during lecture and during lab time - if you are having trouble with an idea, it is highly likely you are not the only one. Your questions will help others too. They will also help us to make sure we are going at the right pace. There are no formal grades, but we will be writing letters of recommendations for you at the end of the program. Your participation in class will help us to get to know you better and write a better letter for you.

Homework

We will spend most of the class time in the lab working on the problem sets. You will receive the new problem set at the end of the lecture portion of the class. The problem sets will be a mixture of written and programming exercises. The written exercises can be done at home. Usually the problem sets will cover material presented in class. Occasionally, they will introduce new material. The problem sets will be due at the beginning of lecture the next day. You should try to finish the programming part of each assignment in class because there are not enough computers in the dorm for all of you to work on homework at home. Sometimes we may have the lab open in the evening if most of the class hasn't finished the programming portion of the problem set. Most of the problem sets will have some exercises marked as "Optional". You do not have to do those but if you finish the problem set in class and still have time, do try to do them. The optional problems are fun and will give you extra practice with the material you have seen so far.

Homework isn't graded but please do them. This is how you learn. You may feel you understand everything in lecture but it is not until you try to apply the concepts that you truly understand them. The lectures build on top of the previous ones, so you should try to follow and not skip problem sets. We will give you feedback on your solutions and hand them back the day after you turn them in.

Collaboration Policy

We encourage collaboration - you can discuss ideas presented in class, you can help each other debug your programs (don't just fix your friend's program but rather ask them questions to help them find the problem themselves), you can discuss approaches to solving a particular problem but you should write your answers and programs on your own. Friends don't let friends copy their code. Letting your friend copy your program is not helping them, it is taking away from them the opportunity to learn. If you collaborated with other students on the homework, please write down their names on the top of your homework. Otherwise, write down "I worked alone".

Final Project

Most of the last week of class will be spent working on a programming project. Stay tuned for more details later.