

# Syllabus

## CSC 520 Python Programming Department of Computer Engineering Santa Clara University

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Course website:  
Office Hours:

Spring Quarter 2016  
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<http://www.cse.scu.edu/~mwang2/language/>  
Monday 9:00-10:00pm

### Course Description

Python is probably the current most popular scripting language used in industry, and in fact it is not only used as scripting language for quick and dirty tasks but also for serious programming projects in a wide variety of domains. This course teach students how to master Python programming and it includes numeric/string types and operations, dynamic typing, containers (lists, dictionaries, tuples, files), expressions, input and output, assignment/conditional/loop statements, functions, scopes, arguments, iterators and comprehensions, generators, exceptions, modules and packages, classes, operator overloading, inheritance and composition, decorators, metaclasses, performance, testing, documentation, etc.

### Prerequisites

None

### Required Textbooks

1. "Effective Python: 59 Specific Ways to Write Better Python" by Brett Slatkin, ISBN: 978-0134034287, Addison-Wesley 2015
2. "Data Structure and Algorithmic Thinking with Python: Data Structure and Algorithmic Puzzles" by Narasimha Karumanchi, ISBN: 978-8192107592, CareerMonk Publications 2015

### Expected Learning Outcomes

1. Demonstrate the knowledge of numeric/string types and operations, dynamic typing, containers (lists, dictionaries, tuples, files), expressions, input and output, assignment/conditional/loop statements, etc.
2. Demonstrate the knowledge of functions, scopes, arguments, iterators and comprehensions, generators, exceptions, modules and packages, etc.
3. Demonstrate the knowledge of classes, operator overloading, inheritance and composition, decorators, metaclasses, performance, testing, documentation, etc.

4. Practice examples of Python programming using open source Python libraries/tools, and implement example applications in Python.
5. Read current research papers and implement example research group project using Python.

### Grading Policy

Course grade is determined based on the total score (maximum 1100 points + up to 200 optional bonus points for extra work) from:

1. Mid-term and final exams of 200 points each (close book with one A4 note, no sitting together, no wireless connection.) Makeup exams (must have a very good reason) are much difficult than normal exams.
2. Two programming assignments of 200 points each (late penalty: 40 points/day.) Makeups are more difficult too.
3. A group (2-3 people in a team) programming term project of 300 points (late penalty: 60 points/day.) No makeup is allowed.
4. Bonus assignments will be assigned at each week with 20 points each. Due before next lecture begin by email to me (in plain text or PDF) with title "csc520 bN" (where N can be 2, 3,..., 10) and cc to the grader. The solution for bonus assignments will be posted on my protected web page. Please read solutions of bonus assignments before asking questions. No late work accepted for bonus assignments. 75-80% of exam questions are similar to bonus assignments.
5. Class average targeted at **A-**.

Table 1: Grade-score table

1200	1000	950	900	850	800	750	700	650	0
-	-	-	-	-	-	-	-	-	-
1300	1199	999	949	899	849	799	749	699	649
A+	A	A-	B+	B	B-	C+	C	C-	F

### Course Schedule (Wednesday 7:00pm-9:45pm)

Table 2: Course Schedule

#	Week	Readings	Remarks
1	1/18	ITU holiday	Martin Luther King Day
2	1/25	introduction	
3	2/1	Python tutorial	submit due 2/1
4	2/8	types, operators, expressions	
5	2/15	statements, containers	program #1 due 2/14
6	2/22	functions, iterators, comprehensions, generators	
7	2/29	research procedure	program #2 due 2/28
8	3/7		mid-term exam 3/7

9	3/14	Exceptions, modules, packages	
10	3/21	Problem presentation	problem due 3/21
		Classes, inheritances, compositions	group & topic due 3/25
11	3/28	paper presentation	paper presentation 3/28
12	4/4	proposal presentation	proposal due 4/4
13	4/11	decorators, metaclasses	
14	4/18	Performance, testing, documentaion	
15	4/25		final 4/25
16	5/2	evaluate	project defense 5/2

### **Reminder**

- No cheating, and no register complaint without talking to me first.
- No incomplete. No sit-in or audit the class except formally registered.
- Read files under /home/mwang2/tips for help.
- Handouts, assignments, and solutions will be posted on the web. You should check the class web site at least once a week (and don't forget to refresh the webpage to get the latest versions). You are responsible for printing and bring the handout to the class if you prefer printed pages.
- Office hours: Monday 9:00pm-10:00pm.

### **Honor Code**

All students taking course in the school of engineering agree, individually and collectively, they will neither give nor receive unpermitted aid in examinations or other course work that is to be used by the instructor as a basis of grading.