

CSE 101: Introduction to Computers (Section 01)

Stony Brook University, Fall 2017

Course Description

Introduces central ideas of computing and computer science, instills practices of computational thinking, and engages students in the creative aspects of the field. Also introduces appropriate computing technology as a means for solving computational problems and exploring creative endeavors. Requires some programming.

Prerequisite: Passing the math placement exam at level 3, or any equivalent math course.

Course Objectives

Students who successfully complete this course will be able to:

- Use computing tools and techniques to create artifacts
- Use multiple levels of abstraction, models, and simulation in computation
- Use algorithms to develop and express solutions to computational problems

Stony Brook Curriculum TECH Learning Outcomes

Students who successfully complete this course will be able to:

- Demonstrate an ability to apply technical tools and knowledge to practical systems and problem solving.
- Design, understand, build, or analyze selected aspects of the human-made world. The "human-made world" is defined for this purpose as "artifacts of our surroundings that are conceived, designed, and/or constructed using technological tools and methods."

Instructor Information

Instructor: Michael Tashbook (<tashbook@cs.stonybrook.edu>)

Instructor Office Hours: Tuesdays and Thursdays, 4:30–7:00 PM, in New Computer Science 204. I am also available at other times by appointment.

Course Information

Lecture Meetings: Monday and Wednesday, 2:30–3:50 PM, in Javits Lecture Center 110

Lab Meetings: Each lab section meets **ONCE** a week. If you miss your lab section, you may attend a later lab meeting provided that there is a seat available for you. **LABS DO NOT BEGIN UNTIL SEPTEMBER 12 OR 14.**

Lab Section	Meeting Time	Location
L01	Tuesday, 1:00–1:53 PM	Old Computer Science 2114
L02	Thursday, 1:00–1:53 PM	Old Computer Science 2114
L03	Tuesday, 2:30–3:23 PM	Old Computer Science 2114
L04	Thursday, 2:30–3:23 PM	Old Computer Science 2114
L05	Tuesday, 4:00–4:53 PM	Old Computer Science 2114
L06	Thursday, 4:00–4:53 PM	Old Computer Science 2114

Textbook and Required Course Materials:

- *Explorations in Computing: An Introduction to Computer Science and Python Programming*, by J.S. Conery (Taylor & Francis/CRC 2015). Copies of the book are available on 2-hour reserve in the North Reading Room of Melville Library.
- Optional supplementary textbook: *Blown to Bits: Your Life, Liberty, and Happiness after the Digital Explosion*, by Abelson, Ledeen, and Lewis (Addison-Wesley 2008). Available for free online at <http://www.bitsbook.com>
- Students should also download and install Python 3.6 or later (**NOT** Python 2) from <http://www.python.org>. You may also want to download the free PyCharm Edu IDE from <https://www.jetbrains.com/pycharm-edu/> for use in completing lab and homework assignments. Directions on obtaining this software will be provided on Blackboard.

Course Discussion Forum: CSE 101 uses Piazza (<http://piazza.com>) for course-related discussion. The instructor and TAs will monitor this forum regularly to answer questions. More details will be provided in class.

Course Web Site: <http://www.cs.stonybrook.edu/~cse101/>. All course materials (announcements, slides, homework, labs, grades, and supplementary/suggested reading) will be posted on Blackboard.

Important Dates

- 9/4: No class (Labor Day)
- 9/12 or 9/14: Lab meetings begin (see the preceding table for times and locations)
- 9/27: Midterm 1 (in class)
- 11/1: Midterm 2 (in class)
- 11/22: No class (Thanksgiving Break)
- 12/12: Final Exam (5:30–8:00 PM, location TBA)

Grading Policy

Course grades will be based on a combination of:

- four programming homework assignments (5% each, 20% total)
- one final programming project (10%)
- ten weekly programming lab assignments (1% each, 10% total)
- two written midterm exams (Midterm 1 is worth 15%; Midterm 2 is worth 20%)
- one written final examination (25%)

All grades will be posted on Blackboard. See the course Web page for the letter grade cutoffs. Final grades are **NOT** curved.

Late Assignment Policy: Each assignment clearly states its due date. Late or improperly-submitted assignments will **NOT** be accepted for labs, homework, or the final project.

Grade Challenge Policy: The TAs and I will endeavor to post grades as soon as possible after homework, labs, and exams are turned in (normally within 7–10 days). Questions about or challenges to homework, lab, or midterm exam grading **MUST** be made **IN WRITING** within **ONE WEEK** of the grades being posted; after that period, grades are considered final for that assignment.

Exam Policies: All students must bring photo ID to each exam. Students will not be admitted more than 10 minutes late to any exam. Make-up exams will be granted at the instructor's discretion, and **ONLY** for valid medical reasons (a doctor's note is required), for religious reasons, or for documented participation in University-sponsored events. Except for medical excuses, reasonable prior notification (at least 48 hours prior to the exam) to the instructor is **REQUIRED** in order for a make-up opportunity to be considered.

Americans with Disabilities Act

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. <http://studentaffairs.stonybrook.edu/dss/>

Academic Integrity Policy

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Students found guilty of academic dishonesty will automatically receive a final grade of 'F' for the course.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Policy on Electronic Devices in Class

Students are encouraged to bring laptops and tablet devices to class *for note-taking purposes only*, especially during the programming lectures. All communication and entertainment devices should be silenced or (preferably) turned off for the duration of the class unless otherwise directed by the instructor. **No electronic devices of any sort may be consulted or used during exams**; this will be considered an instance of academic dishonesty, and will be treated as such.

Use of Email for Official Communication

Students, faculty, and staff are responsible for making sure they are receiving and checking for official University communications at their primary campus email address (@stonybrook.edu) on a regular basis, or making sure they forward their Stony Brook mail to a personal email account (Google Apps users only).

Tentative Course Calendar

Week	Date	Main Topic(s)	Lab	Reading	Upcoming Assignments
1	8/28	Introduction; What is Computational Thinking?	N/A	Conery Ch. 1	N/A
	8/30	Problem-Solving Concepts		N/A	
2	9/4	NO CLASS (Labor Day)	N/A	N/A	N/A
	9/6	Computer Programming Fundamentals		Conery Ch. 2	
3	9/11	Computer Programming Fundamentals (Cont'd)	1	Conery Ch. 2	Lab 1 and Homework 1 due 9/15
	9/13	Testing and Debugging		N/A	
4	9/18	Iteration, Lists, and Algorithm Design	2	Conery Ch. 3	Lab 2 due 9/22
	9/20				
5	9/25	Exam Review	3	N/A	Lab 3 and Homework 2 due 9/29
	9/27	Midterm 1 (in class)			
6	10/2	Searching/Sorting; Scalability	4	Conery Ch. 4	Lab 4 due 10/6
	10/4				
7	10/9	Machine Learning	5	Conery Ch. 6	Lab 5 due 10/13
	10/11				
8	10/16	Natural Language Processing; Regular Expressions; Strings in Python	6	Conery Ch. 10	Lab 6 and Homework 3 due 10/20
	10/18				
9	10/23	Data Representation and Compression	7	Conery Ch. 8	Lab 7 due 10/27
	10/25				
10	10/30	Exam Review	8	N/A	Lab 8 due 11/3
	11/1	Midterm 2 (in class)			
11	11/6	Divide and Conquer Algorithms; Recursion	9	Conery Ch. 5	Lab 9 and Homework 4 due 11/10
	11/8				
12	11/13	Random Numbers; Classes in Python	10	Conery Ch. 7	Lab 10 due 11/17
	11/15	Graphs and Genetic Algorithms		Conery Ch. 12	
13	11/20	Online Privacy; Cryptography	N/A	N/A	N/A
	11/22	NO CLASS (Thanksgiving)		N/A	
14	11/27	Computer Architecture	N/A	Conery Ch. 9	N/A
	11/29	The Limits of Computing		Conery Ch. 12	
15	12/4	Other topics as appropriate	N/A	N/A	Final Programming Project due 12/8
	12/6	Other topics as appropriate		N/A	
Finals		Final Exam (Tuesday, 12/12, 5:30–8:00 PM, location TBA)			