

CSE 101: Introduction to Computers

Stony Brook University, Fall 2016

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

- 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

Course Information

Lecture Meetings: Monday and Wednesday, 7:00–8:20 PM, in Javits 100

Lab Meetings: Mondays, Tuesdays, and Thursdays, at assorted times. See SOLAR or the course Web page for a list of times and locations. ***LABS DO NOT BEGIN UNTIL THE WEEK OF SEPTEMBER 12!***

Textbooks:

- *Computational Thinking for the Modern Problem Solver*, by D. Riley and K. Hunt (Chapman and Hall/CRC 2014). (required)
- *Blown to Bits: Your Life, Liberty, and Happiness after the Digital Explosion*, by H. Abelson, K. Ledeen, and H. Lewis (Addison-Wesley 2008). Available for free online at <http://www.bitsbook.com> (optional, but recommended)

Copies of both books are available on 2-hour reserve in the Science and Engineering Library.

- Students are also **REQUIRED** to purchase access to the "Programming in Python 3" zyBook e-book from Zyante (<http://zybooks.zyante.com>) (\$67). Detailed registration instructions will be posted on Blackboard.

Course Software: Students will need to download and install Python 3 and the PyCharm Edu development environment. Information on obtaining both pieces of (free) software will be given during class.

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

Important Dates

- 9/5: No class (Labor Day)
- 10/10: Midterm 1 (8:45–10:15 PM, location TBA)
- 11/9: Midterm 2 (8:45–10:15 PM, location TBA)
- 11/23: No class (Thanksgiving Break)
- 12/21: Final Exam (8:00–10:45 AM, location TBA)

Instructor Information

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

Instructor Office Hours: Monday and Thursday, 1:00–3:30 PM, in New Computer Science 204. I am also available at other times by appointment.

Grading Policy

Course grades will be based on a combination of:

- ten weekly programming laboratory assignments (10% total)
- three homework assignments (two written, one programming) (9% total)
- one final programming project (6%)
- two written midterm exams (20% and 25%, respectively)
- one written final examination (30%)

See the course Web page for the letter grade conversion table. All grades will be posted on Blackboard.

Late Assignment and Make-up Exam Policy: Each assignment clearly states its due date. Late submissions will **NOT** be accepted for weekly labs, the programming homework assignment, and the final project. Written homework assignments are due within the first 10 minutes of lecture on their respective due dates; submissions turned in after that will have their grades reduced by half for each 24-hour period (or portion thereof) that they are late (this penalty is cumulative, so a paper that is 24.5 hours late will have its score reduced to 25% of the original grade). 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.

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

Students With Disabilities

If you have a physical, psychological, medical or learning disability that may have an impact on your ability to carry out assigned course work, please contact the staff in the Disabled Student Services (DSS) office, 128 Educational Communications Center (E.C.C), Phone/TTY: (631) 632-6748. DSS will review your concerns and determine with you what accommodations are necessary and appropriate. All information and documentation of disability are confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information please visit <http://www.stonybrook.edu/ehs/fire/> and search Fire Safety and Evacuation.

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. Any suspected instance of academic dishonesty will be reported 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/uaa/academicjudiciary/> (Adopted by the Undergraduate Council 9/12/06)

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

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).

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 Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Tentative Course Calendar

Week	Date	Main Topic(s)	Lab	Notes/Reading Assignments
1	8/29	What is Computer Science?	N/A	RH Chapter 1
	8/31	Introduction to Python		ZB 1.1–1.10, 2.1–2.7, 3.6–3.8
2	9/5	NO CLASS (Labor Day)	N/A	
	9/7	Data Representation		RH Chapter 2
3	9/12	Boolean Logic; Python Conditionals	1	Labs begin this week; RH Chapter 3; ZB 4.1–4.4
	9/14	Loops in Python		ZB 5.1–5.8
4	9/19	Solving Problems	2	RH Chapter 4
	9/21	Algorithmic Thinking		HW 1 due at the start of class; RH Chapter 5
5	9/26	Modeling Solutions	3	RH Chapter 6
	9/28	Functions and Random Numbers in Python		ZB 6.1–6.12
6	10/3	Turtle Graphics in Python	4	
	10/5	Strings in Python		ZB 3.1, 7.1–7.4
7	10/10	Midterm 1 review (in class)	5	
	10/12	Pattern-Matching and Regular Expressions		RH Chapter 8
8	10/17	Data Organization	6	RH Chapter 7
	10/19	Collections in Python		HW 2 due Friday, 10/21; ZB 3.2–3.4, 4.5, 8.1–8.12
9	10/24	Collections in Python (Cont'd)	7	
	10/26	Networks and the Internet		B2B appendix and Chapter 5
10	10/31	Information Security	8	RH Chapter 12
	11/2	Classes and Objects in Python; File I/O		ZB 9.1–9.6, 12.1–12.2

Week	Date	Main Topic(s)	Lab	Notes/Reading Assignments
11	11/7	Recursion	9	
	11/9	Midterm 2 review (in class)		
12	11/14	Introduction to Cryptography	10	
	11/16	Privacy Online		
13	11/21	TBA	N/A	HW 3 due at the start of class
	11/23	NO CLASS (Thanksgiving Break)		
14	11/28	Software Errors and Testing	N/A	RH Chapter 9
	11/30	The Limits of Computation		RH Chapter 10
15	12/5	Other topics as appropriate	N/A	
	12/7	Other topics as appropriate		Project due Friday, 12/9
Finals		Final Exam (Wednesday, 12/21, 8:00–10:45 AM, location TBA)	N/A	

Key: RH = Riley & Hunt (*Computational Thinking...*) ZB = zyBook B2B = *Blown to Bits*