Computer Science Principles

CSE 101

Instructor Info

- Francois Rameau
- Office Hrs: Mon 10:30 - 11:45a
- B423
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Course Info

- Prereq: None
- Tues & Thurs
- 2-3:20p
- C107

Lab Info

- Wed
- 2-3:20p
- C107

TA Info

- Alice
- Office Hrs: Tues & Thurs 10-11a
- MCZ 104
- James
- MCZ 104

Overview

Introduces central ideas of computing and computer science, instills practices of algorithmic and 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. Includes weekly computer programming assignments, but assumes no previous programming experience.

Course Website

`https://rameau-fr.github.io/suny-cse101/`

Material

Required Texts

Explorations in Computing: An Introduction to Computer Science and Python Programming by John S. Conery. Chapman and Hall/CRC, 2014. ISBN 978-1466572447.

Recommended Text

How to Code in Python 3 by Lisa Tagliaferri, Digital Ocean, New York, NY. ISBN 978-0-9997730-1-7

Other

Any required journal articles, online references, and book chapters will be provided in class.

Grading Scheme

30%	Homeworks (5 to 6)
30%	Quizzes (5 to 6)
20%	Final Exam
10%	Lab Worksheets
10%	Attendance/Participation

Grades will follow the standard scale: A = 89.5-100; B = 79.5-89.4; C = 69.5-79.4; D = 60-69.4; F <60. Curving is at the discretion of the professor.

Learning Objectives

- Become familiar with computing tools and techniques to create computer program artifacts.
- Build the ability to use multiple levels of abstraction, models, and simulation in computation.
- Learn to use algorithms to develop and express solutions to computational problems.

Major topics

- Data representation and compression
- Computational thinking and problem-solving
- Basic algorithms for searching and sorting
- Boolean logic
- Fundamentals of programming in the Python language
- Social, legal, and ethical issues in computing

FAQs

Do I need any knowledge about coding?

No, you can join this class with zero pre-requisite.

Do I need my personal computer?

No, you do not need a personal laptop as desktop computers will be provided during lab sessions. However, having your own computer is highly encouraged as a few in-class activities might be proposed.

Is this class about computer hardware?

No, this class will not cover hardware but will focus on algorithmic and programming.

Academic integrity

Students are encouraged to collaborate and discuss their homework with classmates. However, all work must be original, and any violation of academic integrity, such as plagiarism or cheating, will not be tolerated and will be reported to the appropriate university authorities. Note that the codes and reports you will submit will be carefully checked for plagiarism.
For more information on academic integrity, please visit this link: `http://www.stonybrook.edu/commcms/academic_integrity/index.html`.

Students with disability

If you have a physical, psychological, medical, or learning disability, please contact the Department of Student Affairs. They will determine with you what accommodations if any, are necessary and appropriate. All information and documentation of disability is confidential

Critical incident management

The 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.

Class Schedule

Period	Topics
1 Week	Introduction to Computer Science Principles
2 Week	Arithmetic operations
3 Week	Variables & Functions
4 Week	Functions & Conditionals
5 Week	Quizz 1 - String & Error and exceptions
6 Week	Loops & List
7 Week	Quizz 2 - Loops & List
8 Week	Loops & List
9 Week	Quizz 3 - Search & Sort
10 Week	Search & Sort
11 Week	Quizz 4 - Recursion
12 Week	Recursion
13 Week	Quizz 5 - Object Oriented Programming
14 Week	Object Oriented Programming
15 Week	Final exam