Fall 2020

CSE 101 : Computer Science Principles

LECTURE 0 – COURSE INTRODUCTION

1

Course Information

CSE 101 : Computer Science Principles

Course webpage: https://ppawar.github.io/Fall2020/CSE101-F20/index.html

Meetings: Lecture: Tue/Thu 5:00-6:20 PM

Lab: Mon: 12:30-1:50 PM

Place: C105 or Online by Zoom (untill 8 October)

2

Staff

Instructor

- Pravin Pawar
- Office: B424
- Email: Pravin.pawar@sunykorea.ac.kr
- Phone: +82-032-626-1227 / +82-010-8692-4908
- Office Hours: *Tue/Thu 10:30 AM - 12:30 PM in person or online by Zoom*
- *Skype: pravin.pawar*
- *Kakao talk: pravinpawar*

3

Staff

Teaching Assistants (Shared resources with Prof. Alex)

- Graduate (grading TA)
  - Seonghwan Jeong
- Undergraduate (tutoring TA)
  - Juan Kim
  - HanSeung Choi
  - Abhishek Gaire
  - Yoora Kim
  - KyungBae Min

4

Tutors

- Phyo Htet Naing (Tyler)
- Adrian Sowandi
- Hojung Lim
- Sujeong Youn

Tutor recommended for those who would like additional personal coaching.

Get a tutor as soon as you can.

Follow your tutoring hours rigorously!!

5

Announcements

Zoom meeting invitation will be sent in advance for the specific class times.

The zoom meeting session will be recorded and will be made available for viewing later online.

It is expected that you attend each lecture (unless medical situation).

The instructor will record your attendance in-between the lecture break on blackboard.

Please bring a laptop to each class
- Classes will involve lecture segments, demos
- Labs will involve student exercises

Additional video lectures are noted in the syllabus. These are strongly recommended for extra instruction to help understand Python.

6

Misc Information

- For non-CS majors: This course is an excellent way to get an introduction to what computer science is all about and learn how to program
- For CS majors: This course is the launching point into the CS major for those who have no background in CS at all

7

Course Overview

CSE 101
- introduces the important, central ideas of computer science
- explores computational thinking and problem solving
- covers the fundamentals of computer programming

Computer science is the *study of problem solving with computers*
- Astronomers don't study telescopes. They *use* telescopes to study the stars!
- Likewise, computer professionals *use* computers to solve important problems in the modern world
- Computer scientists also build computers and software that makes the computer hum

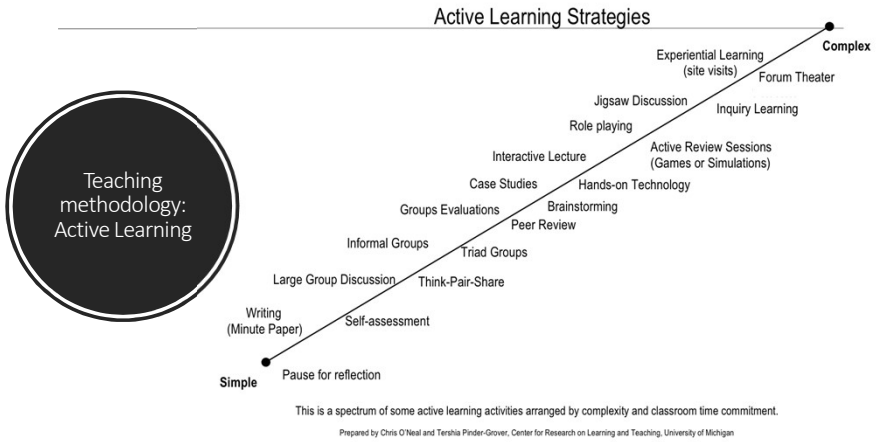
An important thread of this course is **computational thinking**, which is the way computer scientists think about and solve problems

8

Major Course Topics

- Algorithmic thinking (how to devise solutions to problems)
- Flowcharting
- Introduction to computer programming using the Python programming language
- Basics of computer hardware
- Data representation (how does the computer save data?)
- Data organization (how do we manage complex data?)
- Program design, implementation (coding), testing and debugging
- Limitations of computers
- Introduction to natural language processing
- Additional topics as time allows
- Also, some of this list may be modified if we find other more interesting topics later

9



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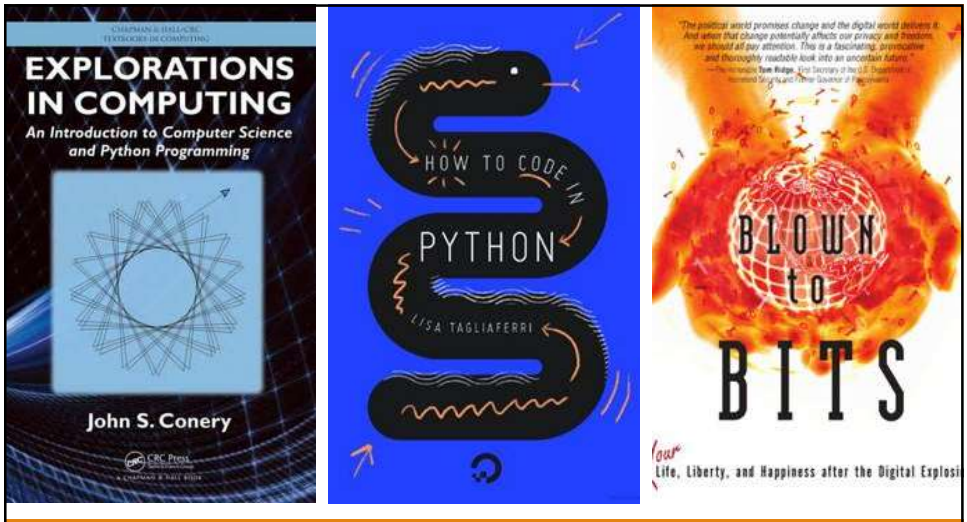

Textbooks

11

Software

Necessary software:

- Python (www.python.org/downloads)
- PyCharm
- Jupyter Notebook
- These are all free!

Download links will be available on the course website

We will use one of the first few classes to setup the software and get familiar with it

12

Homework Assignments

- Over the course of the term you will be required to solve computational problems by writing software in Python
- These homework assignments will reinforce concepts from class and have you explore new concepts, too
- All work will due on fixed dates and times
- All work will be completed on an individual basis (write your own code) *unless otherwise instructed*!
- You will use **Blackboard** to submit your completed assignments
- Please start early on the assignments! Most students find that completing the homework assignments for CSE 101 takes **a lot** longer than they anticipated

13

Late Homework Policy

- Assignments must be turned in by the due date and time.
  - Any part of an assignment that's late means the entire assignment is late.
  - If your assignment is incomplete or not entirely working by the due date, turn in what you have to get some partial credit.
- If you have an emergency situation, email me before the due date and I may be able to work something out
- Bottom line: Plan ahead, start early!

14

Lab

Lab exercises will involve a variety of programming tasks, such as:

- running existing programs and collecting data about them
- writing your own, original, short programs to solve problems
- fixing errors in programs

15

Examinations

- Examination dates are posted on the schedule page of the course website. Tentative dates are:
  - Quizzes: Thu 19 Mar, Thu 2 Apr, Tue 28 Apr, Tue 2 Jun
  - Midterm exam 1: Mon 13 Apr
  - Midterm exam 2: Mon 18 May
  - Final exam: Thu 18 Jun 3:15 PM – 5:45 PM
- Do not miss exams
- Arrange your work and travel schedules as needed to be present for examinations
- Makeup exams will only be given for verified, officially sanctioned university activities.
- All examinations will be closed-notes and closed-book, except one sheet of notes (A4 or 8.5x11), both sides (handwritten or typed) for midterm and two sheets for end-term (will be updated as Corona situation evolves)

16

Grading

- Quizzes - 15% (75 points) - Short quizzes [4 given, lowest grade dropped]
- Problem Sets - 20% (100 points) - Problem sets [8 assignments]
- Labs - 10% (50 points) - Labs [~10 graded lab sessions]
- Class Attendance/Participation - 5% (25 points)
- Midterm Exam 1 - 15% (75 points) - First midterm exam
- Midterm Exam 2 - 15% (75 points) - Second midterm exam
- Final Exam - 20% (100 points) - A cumulative final exam
- Policies:
  - Makeup exams will only be given for verified, officially sanctioned university activities

17

Re-Grading

- To promote consistency of grading, questions and concerns about grading should be addressed first to the TA and then, if that does not resolve the issue, to the instructor.
- You are welcome to contact the TA by email or come to his/her office hour. If you would like to speak with the TA in person, and have a schedule conflict with his/her office hour, you are welcome to make an appointment to meet the TA at another time.
- For the assignments, quizzes and mid-term exams, request for re-grading must be made within one week from after the announcement of grades.

18

- Identify your programming buddy
- Sit next to each other in a class as much as possible
- Discuss your problems with him/her
- Solve Python exercises available online and from the books together
- Help each other to learn the course in a cooperative way!!

Pair Programming

Benefits:

- Fewer bugs
- Spreads code understanding
- Higher quality code
- Can learn from partner
- Two heads are better than one
- Creativity and brainstorming
- Better testing and debugging
- Improved morale

19

Cooperation vs. Copying

- Cooperation (talking over problems) is a good way to learn and is encouraged
- ***Do not copy code. Do not let others look at or copy your code.***
- Copying is not allowed on homework or exams no matter the source
- When you submit your homework or tests, **you are pledging that the work is your own and you have not copied it.**
  - **You are also pledging that you have not allowed others to copy it**.
- **DO NOT COPY! (Our grading TA and *software tools catch it easily*)**

20

TA Assistance

TAs are available almost every day each week

- Schedule is forthcoming (will posted on course web)
- Online as of now, later in "CS Commons" (next to CS Department office)

Come with specific questions and/or code with which you need help

- TAs strive to spend time with everyone that comes to a session so be courteous and share the TA's attention

21

Electronics in Class

- Cell phones should be put away during class
- Laptops may be used during periods where you are asked to work on an exercise during class
- Lecture slides are available on the course website for study before class
- Talk to me after class if there's an issue with this policy

22

Disability

- If you have a physical, psychological, medical or learning disability, please contact the Student Services and Career Team.
  - Location: Academic Building A208
  - Phone: 626-1190
- The DSS will determine with you what accommodations, if any, are necessary and appropriate
- All information and documentation of disability is confidential

23

How to Succeed in this Class

- Attend class and be on time!
  - Not all information is in my lecture notes or in the book
  - I sometimes do in-class demos that emphasize non-obvious details
- This is an introductory course, true, but we're going to cover a lot of ground and move quickly starting from scratch
- The assigned work will take a lot of your time, so practice good time management
- Read the reading assignments and review the lecture notes and try out example code
  - Practice is the only way to become proficient at coding
  - Very often your first, second, or third attempt at solving a problem will not be successful. It is **essential** that you give yourself enough time to try different ideas, taking breaks along the way!
  - Those who write extra code for problems not assigned ("for fun") generally do best in this class
  - Learning to code involves learning to read other people's code
- Ask questions right away if confused. Ask in class, ask a TA, come to my office hours or send email. Don't stay confused and don't get behind!
- Welcome and I hope you enjoy the class!

24

Online Discussion Forum

- Online discussion forum: Piazza
- Find our class page at: http://piazza.com/sunykorea.ac.kr/fall2020/cse101
- TAs will answer the questions if simple ones.
- Otherwise we will.
- Maintain decorum, take responsibility, no anonymous questions.
- You will be enrolled in Piazza.
- Tutorial: https://rutgers.instructure.com/courses/35/pages/piazza

25

Questions?

26

Inspiration

Mark Zuckerberg

Larry Page & Sergey Brin (Google)

Guido van Rossum (Python)

Tim Berners-Lee (WWW)

See more:
https://www.rasmussen.edu/degrees/technology/blog/famous-computer-scientists-who-impacted-the-industry/