Beijing Jiaotong University

2019 Summer Session

CPM 101 Introduction to Programming

Course Outline

Term: July 08-August 09,2019

Class Hours: 10:00-12:00 (Monday through Friday)

Course Code: CPM 101

Instructor: Dr. Mahfuza Farooque

Home Institution: Pennsylvania State University

Office Hours: TBA

Email: mff5187@psu.edu

Credit: 4

Class Hours: This course will have 72 class hours, including 40 lecture hours, professor 10 office hours, 10-hour TA discussion sessions, 2-hour review sessions, 10-hour extra classes.

Course Description:

CPM101 is an introductory class and no prior computer programming experience is assumed. This course is a skills course. Students are required to achieve proficiency at programming in the Python language. Emphasis will be on the fundamental components of the language and the use of good programming techniques to solve introductory level problems and learn some of the fundamental algorithms of computer science.

Topics include but are not limited to: Variable and Expressions, Types, Branching,
Loops, Function, Strings, List. The course will involve problem solving, designing algorithms and developing programs in the Python language. Assignments will be designed to allow students to practice these concepts. Students will be expected to demonstrate knowledge of these concepts through assignments and exams. Students will be expected to follow good programming practices
and specifications given in the course to ensure their knowledge.

Course Objectives:

After this course, students will be able to

- Develop algorithms and pseudo code,
- Implement simple problems based on developed pseudocodes and
- Test, debug and correct programs

Required Textbooks:

Tony Gaddis Starting Out with Python Third edition.

Supplementary textbooks:

Richard L. Halterman Fundamentals of Programming Python (Available in online)

You could also use other online resources.

Grading & Evaluation:

• Class participation and Quizzes: 20%

• Midterms: 30%

• Final: 50%

Letter grades will be assigned per the following scale which will be strictly followed.

• 90 – 100 % A

• 80 – 89% B

• 70 – 79% C

• 60 – 69% D

• 0 – 59% F

Course Schedule

Tentative course outline is mentioned below:

Week1: Python Installation, Basic Input/Output, Variables

Session 1: Introduction to Computers and Programming, Python Installation and How to set up Python IDLE

Session 2: Output, Variables

Session 3: Input

Session 4: Expression

Week2: Error and Formatting, Selection

Session 1: Error Co

Session 2: Output, Variables

Session 3: Selection: Branching

Session 4: Selection: Nested Branching

Week3: Loop, Break, Continue

Session 1: Mid Exam 1

Session 2: for-loop

Session 3: while-loop

Session 4: break, continue

Week4: Strings, Lists and Tuples

Session 1: Strings

Session 2: Lists

Session 3: Tuples

Session 4: Dictionaries and Sets

Week5: Functions

Session 1: Functions 1

Session 2: Functions 2

Session 3: Review of whole class

Session 4: Final Exam