# ISOM 3400 (L1) – Business Application Development in Python
## Summer, 2023

Mon/Wed/Fri 9:00am- 1:20pm
Room 1009, LSK

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|---|---|
| **Instructor:** | Luying (Iris) QIU, Ph.D. candidate (iris.qiu@connect.ust.hk) |
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|---|---|
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| **Course Website:** | https://canvas.ust.hk |

## COURSE GOALS

This course will provide students with knowledge of and skills in Python programming and experience in designing and developing business applications.

## LEARNING OUTCOMES

By the end of this course, students will be able to:
   (1) Acquire programming knowledge with Python.
   (2) Design and develop business applications in Python.
   (3) Learn conventional python programming styles.

## COURSE DESCRIPTION

Python has recently become the most popular general-purpose programming language according to many polls among programmers. The scripting nature of Python allows fast development and easy maintenance of applications. More importantly, the unparalleled community support makes Python increasingly powerful. In this course, students will learn Python programming language in the context of business application development. Business applications involve both business requirements and user requirements. Therefore, developers and programmers who design and develop business applications for organizations are required to meet those requirements. We believe that the combination of Python programming skills and business applications development will provide high practical value to students majoring in Information Systems as well as other related fields.

**This is a programming course. Students are expected to learn from online materials by themselves. In the course, students are required to Google Python syntax that may not be covered in course materials but are required for performing course tasks, including assignments. Note: It is the student's responsibility to ensure his/her Python development tools, including VS Code, Notebook computer and other tools during the class.**

## TEACHING APPROACH

In general, the teaching approach is based on the notion of an understandable, interactive illustration of key concepts in Python, followed by hands-on practices and individual assignments.

## EVALUATION

\* Note: You are prohibited from using generative artificial intelligence (AI) tools to produce any content related to the assessment tasks.

An initiable part of this end of any university course is the evaluation and the grade. In any course, the most important evaluation is a student's self-evaluation: how many new and useful knowledge and skills did students learn from the course? Has the course changed student views about themselves and future career? If so, students' efforts here will have paid off. The student's course goals will be assessed in the following manner, and the percentage of grade is broken down as below:

| Components | Percentage of the grade |
|---|---|
| A.  In-class Exercise | 20% |
| B.  Assignments | 30% |
| C.  Final Exam | 50% |
| **TOTAL:** | **100%** |

### A. In-class Exercise (10%)
There are **FOUR** in-class exercises throughout the semester. Students are expected to apply the programming skills and knowledge to practice python programming and/or solve business problems in the class. **By the end of the class, students' answers will be collected and graded.** Deductions resulting from mistakes and the use of Python will be made at the discretion of the grader. Students may score between 0 (no good or no submission) and 25 points (max) per exercise. Each student will have FOUR in-class exercise scores, and the total score will be counted toward the final grade. **There will be NO makeup in-class exercises for whatever reasons**.

### B. Assignment (40%)
There are **TWO** individual assignments, namely Assignment 1 (15%) and Assignment 2 (15%). Students are expected to apply Python programming skills to solve practical business application problems.

### C. Final Exam (50%)
The final exam will cover ALL TOPICS taught in the course. Further information will be provided thein the last class.

### Grade appeal
All scores will be uploaded to Canvas when ready. It is the student's responsibility to check their scores and make sure they are correct. Any score appeal need to be filed through email to iris.qiu@connect.ust.hk. No score appeal shall be allowed after a checking/appeal period (e.g., 24 hours after a score is released) if applicable.
[If a student cannot come to check his/her paper during the checking period, the student's score will be finalized by default. I am afraid we will not change/correct his/her score after the checking/appeal period.]

### STUDENT LEARNING RESOURCES

1. **MAIN READING**

   Lecture notes and Power points slides. Also note that many useful resources are available online, so no required textbook will be assigned. Students are strongly encouraged to take advantage of the online information (e.g., Google, YouTube, stack overflow).

2. **SOFTWARE**

   - Anaconda Navigator (for Win-64, OSX-64, or Linux-64)
     - Jupyter notebook
     - Python 3.7+
     - Visual Studio Code (VS Code)

### COURSE SCHEDULE

The course is offered in lecture sessions and lab sessions.
   - Mon, Wed, & Fri: 9:00 – 12:20 (Lecture), 12:30 – 13:20 (Lab)

#### LECTURE SCHEDULE (TENTATIVE)

| Week | Date | Topics | Assignments |
|---|---|---|---|
| 1 | Jun 19 (Mon) | Intro. to Course and Programming<br>Intro. to Python and Business Applications<br>Data Processing 1: data, data types, operators | |
| | Jun 21 (Wed) | Data Processing 2: List, Tuple, and Dictionary | In-class exercise |
| | Jun 23 (Fri) | Data Validation: if-else, for, while, try-except | |
| 2 | Jun 26 (Mon) | Functions, Objects, Classes, & File operations 1 | In-class exercise |
| | Jun 28 (Wed) | Functions, Objects, Classes, & File operations 2 | In-class exercise |
| | Jun 30 (Fri) | Web Automation - Selenium 1 | Asg1. Release |
| 3 | Jul 3 (Mon) | Web Automation - Selenium 2 | |
| | Jul 5 (Wed) | Web Automation - Selenium 3 | |
| | Jul 7 (Fri) | Web Application – Flask 1 | In-class exercise<br>Asg2. Release |
| 4 | Jul 10 (Mon) | Web Application – Flask 2 | |
| | Jul 12 (Wed) | Web Application – Flask 3 | |

*\* Note that all in-class exercises and assignments schedules are tentative and subject to change.*

#### LAB SCHEDULE (TENTATIVE)

| Week | Date | No. | Topics |
|---|---|---|---|
| 1 | Jun 19 (Mon) | 1 | Anaconda, VS Code: Download, install, and setup |
| | Jun 21 (Wed) | 2 | Data and data type: List & Tuple<br>if-else, for, while, try-except |
| | Jun 23 (Fri) | 3 | Data and data type: List & Tuple<br>if-else, for, while, try-except |
| 2 | Jun 26 (Mon) | 4 | Function, class & file operations 1 |
| | Jun 28 (Wed) | 5 | Function, class & file operations 2 |
| | Jun 30 (Fri) | 6 | Selenium 1 |
| 3 | Jul 3 (Mon) | 7 | Selenium 2 |
| | Jul 5 (Wed) | 8 | Selenium 3 |
| | Jul 7 (Fri) | 9 | Flask 1 |
| 4 | Jul 10 (Mon) | 10 | Flask 2 |
| | Jul 12 (Wed) | 11 | Flask 3 |