

ISOM3400: Business Applications Development in Python

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Course goals

This course will provide students with skills and knowledge of 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 language
- (2) Able to design and develop business applications in Python
- (3) Conduct programming with team members effectively

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 applications 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.

Assessment scheme

An inevitable 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 ideas and skills did students learn from the course? Has the course changed student views about themselves, workgroups, and organizations? If so, student efforts here will have paid off. The student's course goals will be assessed in the following manner, and the percentage of grade may be broken down as below:

Components	Learning outcomes assessed	Percentage of the grade
A. Assignment	1, 2, 3	30%
B. In-class Exercise	1, 2	30%
C. Final Exam	1, 2, 3	40%
TOTAL:		100%

A. Assignment (30%) (Individual and group)

There are **TWO** assignments, namely assignment 1, and assignment 2. Students are expected to apply Python programming skills to solve practical business application problems.

Assignment 1 (individual) - (15%)

This is an individual assignment. Each student needs to submit his/her program by the deadline. The detailed grading criteria will be stated clearly in the assignment document.

Assignment 2 (group) - (15%)

This is a group assignment. A pre-assigned group is required to design and develop a business application. The details will be announced later in the course. Student groups are required to make a video presentation (not more than 10 minutes).

(Warning: Peer evaluation will be conducted after the deadline. Students should make sure they make a fair contribution to the submitted assignment. An independent judgement is applied to review each case, and an appeal on the decision is **NOT allowed.)**

B. In-class Exercise (30%) (Individual)

There are **THREE in-class exercises** throughout the semester, and they are all **individual exercises**. Students are expected to apply their Python programming skills and knowledge to solve business problems in the class. **By the end of the class, student's answers will be collected and graded.** Deductions resulting from mistakes and the use of Python will be made at the discretion of the grader. Each student will have THREE in-class exercise scores, but **only the BEST TWO scores** will be counted toward the final grade. **There will be NO makeup in-class exercises for whatever reasons.**

Note: It is the student's responsibility to ensure his/her Python development tools, including VS Code, Google Colab, notebook computer and others work during in-class exercises.

Late submission (our time stamp ONLY): Any late submission will result in ZERO marks. Students may submit to Canvas or by email to both instructor and TA.

C. Final Exam (40%)

There is a Final Exam, which covers **ALL topics** taught in the semester. Further information will be provided in 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 must be filed through email to jkwok@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

Text and Reference Books

There are no specific textbooks and reference books required for this course. We will use assorted readings posted on Canvas.

Course Website

Updates of the course contents and other information will be posted on the course website - <http://canvas.ust.hk/>. Students are advised to check this site regularly throughout the semester.

Software Requirements

- Google Colaboratory
- Visual Studio Code (VS Code)
 - o Python 3.7+

Course schedule

The course is offered in lecture sessions and laboratory sessions.

L1	Tue	15:00-16:20	LSK Rm 1003
	Thu	15:00-16:20	LSK Rm 1003
LA1	Mon	15:00-15:50	G021, LSK Bldg
LA2	Mon	13:30-14:20	G021, LSK Bldg
LA3	Mon	16:30-17:20	G021, LSK Bldg

Tentative Course Schedule. Please visit Canvas for updated schedule, readings, and assignments.

Schedule of Lecture (Tentative)

Wk.	Date	Topics	Assignment Release/Due
1	01-Sep	Intro. to Course and Programming Introduction to Python and Business Applications	
1	06-Sep	Data processing 1: data, data types and operators	
	08-Sep	Data processing 2: Lists and Tuples, Dictionaries	
2	13-Sep	Data Validation 1: If-else, for, while, try-except	
	15-Sep	Data Validation 2: If-else, for, while, try-except	
3	20-Sep	Data Validation 3: If-else, for, while, try-except	
	22-Sep	Examples of Business Application	
4	27-Sep	Practice	
	29-Sep	Functions and Classes 1	
5	04-Oct	No Class: Cheung Yeung Festival	
	06-Oct	Functions and Classes 2	
6	11-Oct	Functions and Classes 3	
	13-Oct	Functions and Classes 4	
7	18-Oct	In-class exercise 1	
	20-Oct	Web Automation - Selenium 1	Asg.1 Release (20-Oct)
8	25-Oct	Web Automation - Selenium 2	
	27-Oct	Web automation – Selenium 3	
9	01-Nov	Web automation – Selenium 4	
	03-Nov	Web automation – Selenium 5	Asg.1 Due (07-Nov)
10	08-Nov	In-class exercise 2	
	10-Nov	Web Applications - Flask 1	Asg.2 Release (10-Nov)
11	15-Nov	Web Applications - Flask 2	
	17-Nov	Web Applications - Flask 3	
12	22-Nov	Web Applications - Flask 4	
	24-Nov	In-class exercise 3	Asg. 2 Due (28-Nov)
13	29-Nov	Revision	

Schedule of Laboratory (Tentative): LA1 – LA3

Wk.	Date	No.	Topics
1	05-Sep	LA01	Use of Colab, Setup of VS Code & Anaconda VSCode & Anaconda: Download, install and setup
2	12-Sep		No Class: Mid-Autumn Festival
3	19-Sep	LA02	Data and data types: Lists & Tuples if-else, for, while, try-except
4	26-Sep	LA03	Data and data types: Lists & Tuples if-else, for, while, try-except
5	03-Oct	LA04	Functions and Classes 1
6	10-Oct	LA05	Functions and Classes 2
7	17-Oct	LA06	Functions and Classes 3
8	24-Oct	LA07	Selenium 1
9	31-Oct	LA08	Selenium 2
10	07-Nov	LA09	Selenium 3
11	14-Nov	LA10	Flask 1
12	21-Nov	LA 11	Flask 2
13	28-Nov	LA 12	Flask 3

Teaching staff contact details

Prof. Kwok's office is LSK 4080, 4th floor. Students are more than welcome to drop by any time with any of their questions. For any urgent matters, students may contact Prof. Kwok by phone (2358-7652), but the best way is by email. Prof. Kwok will check email frequently. Our Teaching Assistant (TA) for this course will be available for any questions regarding subject materials. Our TA is also responsible for grading and other administrative formalities.

Academic honesty

Academic integrity is a critical value of the university community. Integrity violations destroy the fabric of a learning community and the spirit of inquiry that is vital to the effectiveness of the University. Prof. Kwok has no tolerance for cheating and there are no acceptable excuses. Anyone caught cheating, plagiarizing, and any other form of academic dishonesty will have their course grade lowered by at least one letter grade. In addition, Prof. Kwok is bound to report any unethical behavior or evidence of dishonesty in this course to the University. Please remember the current university rule: "If a student is discovered cheating however minor the offense, the course grade will appear on the student's record with an X, to show that the grade resulted from cheating. This X grade stays on the record until graduation. If the student cheats again and "earns" another X grade, the student will be dismissed from the University." Plagiarism is copying anything (text or ideas) from another source without citing that source. If students use another person's idea, students must cite it, even if students rewrite the idea in their own words. Extreme care must be taken to avoid the passing of other's work as one's own. Students are required to provide appropriate citations when students use ideas and arguments or otherwise draw on others' work. If students use research from another source or the Web students MUST cite the source. This is true even if students use only the general idea and not the exact words.

Learning environment

Prof. Kwok welcomes feedbacks on his teaching throughout the semester. Students are encouraged to contact Prof. Kwok or our TA any time students have any questions, suggestions, concerns, or would like to ask for advice. After student groups are formed, Prof. Kwok will ask for one volunteer from each group (optional) to serve on the student feedback committee. The purpose of this committee is to act as a feedback channel for Prof. Kwok to improve his teaching and enhance student's learning experience. Prof. Kwok will meet with this committee to gather their feedback periodically. It would be a good opportunity if students wish to take a more active role in class management rather than waiting to submit their comments after the course is over.