ISOM3230: Business Applications Programming [3-0-1:3]

Course goals

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

Learning outcomes

By the end of this course, students will be able to:

1. Apply programming concepts to solve business problems
2. Describe the logic and flows of given programs
3. Predict the output of a program
4. Write programs with common programming practices
5. Identify and fix logical and runtime errors in programs

Course description

This course is designed to train students to understand programming, in particular business applications programming. Students will learn why we need to use programming in their professions and why they build business applications, how business applications influence business workflows, how programming could be more beneficial and useful in business applications, and so on. Students will learn basic programming syntax and structure, and how to build basic business applications using high-level programming languages.

This is a programming course. Students are expected to learn from online materials by themselves. In the course, students are required to Google VBA syntax that may not be covered in course materials, but required for performing course tasks, e.g., assignment.

Teaching approach

In this course, students will learn the concept, knowledge, and skills through lecture before applying them in the In-class exercises and labs. In-class exercises, and Labs are used for practicing programming skills with questions and exercises. The following is the study pattern for one week of study.
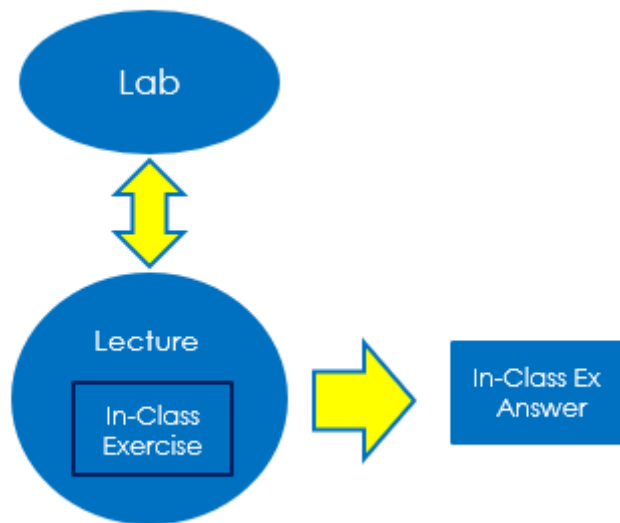
In general, the teaching approach of this course is based on the notion of sustained, deep learning by applying knowledge through programming, hands-on practices, and assignments. Lecture sessions are also structured to engage the students in learning proactively (pre-readings, pre-class assignments), actively (in-class exercises of programming and in-class discussion of business applications) and reflectively (in-class discussion of personal views through the answers of in-class exercises). The individual assignment and the group assignment are there to deepen student's learning through knowledge application while at the same time providing students with opportunities to develop essential workplace skills such as critical thinking, written and oral communications, teamwork, and lifelong learning.

Teaching & Learning Activities	Roles in the Course	Course learning outcomes addressed
Lecture	Explain key concepts to students using an active learning approach, forum discussion, in-class exercise, and after-class discussion of questions.	1, 2, 3, 4, 5
Laboratory	Apply concepts presented in lectures to hands-on exercises.	1, 2, 3, 4, 5
Assignment	It requires students to apply their understanding in programming to solve business problems.	1, 2, 3, 4, 5

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, work groups 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, 4, 5	70%
B. In-class Exercise	1, 2, 3, 4, 5	30%
TOTAL:		**100%**

A. Assignment (70%) (Individual and Group)

The objectives of assignment are to analyze business problems and resolve these problems using VBA. There are **TWO** assignments, namely assignment 1, and assignment 2. The details of the assignment will be announced later in the course.

Assignment 1 (Individual) - (35%)
This is an individual assignment. Each student needs to write a VBA program to meet ALL requirements set out in the assignment.

Assignment 2 (Group) - (35%)
This is a group assignment. A pre-assigned group is required to write a VBA program to meet ALL requirements set out in the assignment. 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 **FOUR** in-class exercises throughout the semester and they are all individual exercises. Students are expected to apply their VBA 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 use of VBA will be made at the discretion of the grader. So, each student will have 4 in-class exercise scores, but only the **BEST THREE scores** will be counted toward the final grade. **There will be NO makeup in-class exercises for whatever reasons**.

During the in-class exercise session, all students are required to comply with the following guidelines and requirements. Fail to do so will result in a mark deduction penalty.

- **Attend the entire lecture (arriving late and leaving early are not acceptable)**
- **Set the display name as follows (e.g., James (jkwok-20202020)**
- **Turn on the camera at all time and make sure we can see your face clearly**
- **Submit your work/answer to Canvas (or via email) before the submission deadline**

Note: It is the student's responsible to ensure MS Excel (Win version) work during in-class Exercises.

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 appeal to score must be filed through email to jkwok@ust.hk. No appeal to a particular score shall be allowed after a checking period (e.g., 48 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 appeal period.]

Student learning resources

Text and Reference Books

There is 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 required

- MS Excel 365 (Windows) or MS Excel 2019 (Windows)

Note: **Mac users are required to use MS Excel (Windows version) during the class.**

Course schedule

The course is offered in lecture session and laboratory session.

L1	Monday, 13:30-14:50 & Friday, 09:00-10:20		(Zoom: 914 1439 6508)
LA1	Tuesday	09:00-09:50	(Zoom: 930 7304 7907)
LA2	Tuesday	10:30-11:20	(Zoom: 923 0510 3786)
LA3	Tuesday	12:00-12:50	(Zoom: 927 5016 9145)

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

Schedule of Lecture (Tentative)

Wk.	Date	No.	Lecture	Assignment Due/Remark
1	01-Feb	L01a	Intro. to Course	
	05-Feb	L01b	Intro. to Programming, Macro Recording	
2	08-Feb	L02a	Intro. to Business Applications	
	12-Feb		**Public Holiday**	
3	15-Feb		**Public Holiday**	Add/Drop deadline: **17 Feb**
	19-Feb	L02b	[Practice] Business Applications	
4	22-Feb	L03a	Variables and IO	Asg. 1 Release on **22 Feb**
	26-Feb	L03b	OOP, Workbooks and Worksheets	
5	1-Mar	L04a	Ranges	
	5-Mar	L04b	Ranges	
6	8-Mar	L05a	Workbooks, Worksheets and Ranges	
	12-Mar	L05b	If-then-else and select-case	
7	15-Mar	L06a	[In-class Exercise 1]	Asg. 1 Due on **18 Mar**
	19-Mar	L06b	Looping 1	
8	22-Mar	L07a	Looping 2	
	26-Mar	L07b	Methods 1	
9	29-Mar	L08a	Methods 2	
	9-Apr	L08b	Arrays 1	Asg. 2 Release on **9 Apr**
10	12-Apr	L09a	Arrays 2	
	16-Apr	L09b	Userform	
11	19-Apr	L10a	[In-class Exercise 2]	
	23-Apr	L10b	Business Applications 1	
12	26-Apr	L11a	Business Applications 2	
	30-Apr	L11b	[In-class Exercise 3]	
13	03-May	L12a	Formula Implementation	Asg. 2 Due on **6 May**
	07-May	L12b	[In-class Exercise 4]	

Schedule of Laboratory LA1, LA2, LA3 (Tentative)

Wk.	Date	No.	Topics
1	02-Feb	LA 1	Intro to Excel (Win and Mac)
2	09-Feb	LA 2	Marco Recording
3	16-Feb	LA 3	Basic VBA program
4	23-Feb	LA 4	Variables, Data, Buttons, and IO
5	2-Mar	LA 5	Workbooks and Worksheets
6	9-Mar	LA 6	Ranges
7	16-Mar	LA 7	If-then-else and select-case
8	23-Mar	LA 8	Looping
9	30-Mar	LA 9	Methods
10	13-Apr	LA 10	Arrays
11	20-Apr	LA 11	Userform
12	27-Apr	LA 12	Business Applications
13	04-May	LA 13	Formula Implementation

<u>Policies for using ZOOM</u>

This course provides online class via ZOOM. Here are the policies for using ZOOM.

- A Zoom meeting ID has already been released on Canvas
- Login Zoom with your HKUST Email
- Students are required to install Zoom before coming to the class
- Students must enter their display names as first name, ITSC account name and student ID. (e.g., **James (jkwok-20202020)**). When groups are formed, students must also display their group number as well. (e.g., **James (jkwok-20202020), Group 1**)
- **Students must only attend their own assigned lecture and lab session. L1 students can only join L1 lecture, same goes to L2.**
- **Students will be given a unique meeting password. A separate email will be sent to individual students regarding the unique meeting password of the lectures**
- We will reserve the rights to remove you from meeting if the above rules are not complied by students.

Teaching staff contact details

My office is in room LSK4080, 4th floor. You are more than welcome to drop by during office hours or any time with any question you may have. For more urgent matters, you may contact me by email (jkwok@ust.hk) or by phone (2358-7652), but the best way is email. I check my email frequently. Teaching Assistant (TA) of this course is available for any questions regarding grading, attendance, case study 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 absolutely 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 offence, 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 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 from 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.