ISOM3230: Business Programming in VBA

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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. Utilize programming concepts to address business challenges
2. Explain the logic and flow of provided programs
3. Anticipate program outputs accurately
4. Formulate programs employing prevalent programming techniques
5. Recognize and rectify logical and runtime errors within programs

Course description

This course is tailored to equip students with a comprehensive understanding of programming, specifically focusing on programming for business applications in MS Excel. Through this course, students will delve into the rationale behind incorporating programming into their respective professions, the significance of constructing business applications, and the impact of these applications on business workflows. Additionally, they will explore the heightened utility and advantages that programming can bring to the realm of business applications.

Furthermore, students will become adept at grasping fundamental programming syntax and structure. They will gain the proficiency to construct rudimentary business applications utilizing high-level programming languages.

It is important to note that this course is centered around programming. Students are expected to engage with online resources independently to enhance their learning. Throughout the course, students will be tasked with researching VBA syntax through sources like Google, which might not be extensively covered in the course materials but are necessary for fulfilling course assignments and tasks.

Assessment scheme

Evaluation and grading constitute intrinsic components of any university course. Nevertheless, the most pivotal assessment lies in the students' self-evaluation. Did the course present novel and valuable concepts and skills? Did it prompt a shift in perspectives concerning oneself, collaborative work, and organizational dynamics? If such transformations occurred, the students' endeavors in the course would have been truly meaningful.

The final grade distribution will be determined based on the following percentages, which will be used to evaluate the course objectives:

Components	Learning outcomes assessed	Percentage of the grade
A. Group Exercise	1, 2, 3, 4, 5	**5%**
B. Assignment	1, 2, 3, 4, 5	**20%**
C. Final Exam – programming logic	1, 2, 3, 4, 5	**20%**
D. Final Exam – advanced techniques	1, 2, 3, 4, 5	**28%**
E. Final Exam – business app	1, 2, 3, 4, 5	**27%**
	TOTAL:	**100%**

A. Group Exercise – Group (5%)

Throughout the semester, there will be ONE group exercise. Please be advised that no makeup exercise will be provided under any circumstances.

Students may form groups of two to five members for this exercise. Groups are expected to apply their VBA programming skills and knowledge to address a business challenge. At the conclusion of the class, group programs will be collected and evaluated. All members of the group, except those who did not contribute or did not contribute sufficiently (free riders), will receive the same score for the exercise.

It is the responsibility of group members to report any free riding activity along with evidence during the group exercise. Such cases must be reported within 5 days after the group exercise.

Important Reminder: Students are responsible for ensuring the compatibility and functionality of MS Excel, notebook computers, and other relevant software during group exercises.

Late Submission Policy: Submissions made after the designated timeframe will receive a score of zero. Work may be submitted via Canvas or email, addressed to both the instructor and the teaching assistant.

B. Assignment – Individual (20%)

The aims of the assignments encompass the analysis and resolution of business predicaments through VBA utilization. There is only one individual assignment. The specifics of the assignment will be communicated at a subsequent point in the course.

C. Final Exam – programming logic (20%)

A comprehensive Final Exam will encompass **ALL topics** covered during the semester. This section focuses on questions related to programming logic.

D. Final Exam – advanced techniques (28%)

A comprehensive Final Exam will encompass **ALL topics** covered during the semester. This section focuses on questions related to advanced programming techniques.

E. Final Exam – business app (27%)

A comprehensive Final Exam will encompass **ALL topics** covered during the semester. This section focuses on questions related to business applications.

Arrangements for the Make-up Final Exam

Make-up final exams will only be conducted in cases of exceptional circumstances beyond a student's control, such as medical emergencies. If a student is absent due to a medical emergency, they must submit relevant documentation from a registered medical practitioner to the course instructor via email. This documentation is required for consideration for a make-up exam. The make-up exam will be in essay format, and the maximum score a student can achieve is **50%** of the total score of the final exam.

(**Attention**: Students who are eligible to take the make-up exam are required to compose a research article consisting of an introduction, references, proper citations, and other essential sections. This article must be completed within a few hours of its assignment. Please note that there will be **no opportunity for a second make-up exam** under any circumstances. Failing to submit the research article for any reason, such as email or internet issues, will result in a grade of ZERO for the exam.**)**

Remarks:
- **Feedback on all assignments and assessments will be provided within 10 working days.**
- **A summary highlighting common mistakes or key deficiencies in answering questions will be shared with students.**
- **Additionally, students can schedule a meeting with our Teaching Assistant (TA) to review their assignments and examination papers, gaining insights into their mistakes and deficiencies. This review session must take place within a specified deadline, typically two working days after the scores are released. After this deadline, students will not be allowed to review their assignment and examination papers.**

Grade appeal

Upon completion, all scores will be posted on Canvas. It is incumbent upon the student to review their scores and verify their accuracy. If any discrepancies arise, score appeals must be submitted via email to jkwok@ust.hk. It is important to note that score appeals will not be entertained once the designated checking/appeal period has elapsed (e.g., two working days after the score release) if applicable.

[*In instances where a student is unable to check their paper within the stipulated checking period, the student's score will be deemed final by default. Regrettably, we won't be able to modify or rectify the score beyond the checking/appeal period.*]

Use of generative AI

Students are permitted to utilize generative artificial intelligence (AI) tools exclusively for enhancing programming tasks within this course. Nonetheless, students are obligated to duly acknowledge and credit any employment of generative AI. In the context of producing video presentations, employing generative AI tools is strictly prohibited for students.

- Leveraging ChatGPT, individuals can effortlessly generate content devoid of grammatical errors. As a result, during assessment, we presuppose that the content is devoid of any grammatical blunders.
- During the grading process, our emphasis is on two key aspects: "**Proficiency in VBA**" and "**Understanding of Business and User Requirements.**"
- We anticipate students to acquire coding skills by independently employing ChatGPT. For instance, when seeking additional practice and examples, ChatGPT can provide valuable assistance.

	ChatGPT only **(Other generative AI tools are NOT allowed in this course)**
Group Exercise	✔ or ✘ **(default)**
Assignment	✔
Final Exam	✘
Lecture and Lab	✔
Outside the class (for learning)	✔ **(highly recommended)**

Efficient Email Communication Guidelines

To ensure prompt assistance, please include [**Course Code** - L**X**] (**X** being the section number), e.g., [**ISOM3230**-L**1**] at the start of your email's subject line. Neglecting this may lead to delays in our response time.

Anticipate a surge in email volume as deadlines approach. For timely support, address your queries ahead of time and utilize instructor and TA office hours.

Kindly note that **direct assignment answers won't be furnished by the instructor or TAs.** Your understanding and collaboration are appreciated.

Student learning resources

Text and Reference Books

No textbooks or reference books are mandatory for this course. The learning materials will comprise diverse readings accessible on Canvas.

Course Website
Course content updates and other pertinent information will be communicated through the course website - http://canvas.ust.hk. It is advisable for students to consistently monitor this platform throughout the semester.

Software requirements

- Microsoft 365 (Windows) or Microsoft Office 2021 (for Windows)
- ChatGPT 3.5 or above

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

Course schedule

The course is offered in lecture session and laboratory session.

L1:	Wednesday and Friday LSK 1003	13:30 – 14:50
L2:	Wednesday and Friday LSK 1005	16:30 – 17:50
LA1:	Tuesday 18:00 – 18:50 G021, LSK Bldg	

LA2:   Friday   9:00 – 9:50
             G021, LSK Bldg

LA3:   Wednesday   18:00 – 18:50
             G021, LSK Bldg

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

Schedule of Lecture (Tentative)

Week	Date	Lecture	Assignment Due/Remark
1	4 Sep	Intro. to Course, Intro. to Programming	
	6 Sep	Intro. to Business Applications	
2	11 Sep	VBA Basics	
	13 Sep	VBA Basics	
3	18 Sep	No class: The day following the Chinese Mid-Autumn Festival	Add/Drop deadline: Sep 14th
	20 Sep	OOP, Workbooks, and Worksheets	
4	25 Sep	Workbooks, and Worksheets	
	27 Sep	Ranges	
5	2 Oct	Ranges	
	4 Oct	If-then-else and select-case	
6	9 Oct	If-then-else and select-case	
	11 Oct	No class: Chung Yeung Festival	
7	16 Oct	Looping	
	18 Oct	Looping	
8	23 Oct	Group Exercise	
	25 Oct	Methods	
9	30 Oct	Methods	Assignment: Released on October 30th
	1 Nov	UserForm	
10	6 Nov	UserForm	
	8 Nov	Solver	
11	13 Nov	Solver	
	15 Nov	Arrays and Formulas	
12	20 Nov	Arrays and Formulas	
	22 Nov	NPV	Assignment: Due on November 21st

| 13 | 27 Nov | NPV | |
| | 29 Nov | Revision | |

(Note: Built-in Excel formulas are also covered in this course.)

Schedule of Laboratory (Tentative)

Lab No.	LA3(Wed)/LA2(Fri)/LA1(Tue)	Topics
LA00	Sep4/Sep6/Sep10	ChatGPT
LA01	Sep11/Sep13/Sep17	Intro to Excel (Win and Mac)
LA02	Sep18/Sep20/Sep24	Basic VBA program / Macro Recording
LA03	Sep25/Sep27/Oct1	VBA Basics, Variables, Data, Buttons, and IO
LA04	Oct2/Oct4/Oct8	Workbooks and Worksheets
LA05	Oct9/Oct11/Oct15	Ranges
LA06	Oct16/Oct18/Oct22	If-then-else and select-case
LA07	Oct23/Oct25/Oct29	Looping
LA08	Oct30/Nov1/Nov5	Methods
LA09	Nov6/Nov8/Nov12	UserForm
LA10	Nov13/Nov15/Nov19	Solver
LA11	Nov20/Nov22/Nov26	Arrays and Formulas
LA12	Nov27/Nov29/NA	NPV and (Revision)

Note: For any weeks where lab sessions are unavailable due to public holidays or other reasons, a Zoom recording will be provided afterward.

Contact Details for Instructor and TA

Prof. Kwok's office is located in room LSK4080, and he extends a warm invitation for you to visit during his office hours or at your convenience for any queries you may have. For urgent concerns, feel free to reach out via email (jkwok@ust.hk) or phone (2358-7652); however, he does emphasize that email is the preferred mode of communication as he frequently monitors it. Additionally, the Teaching Assistant (TA) assigned to this course is available to address inquiries related to grading, attendance, assignments, and any administrative matters.

Academic honesty

Upholding academic integrity stands as a fundamental principle within our university community. Any breach of integrity undermines the foundation of our learning environment and the essence of inquiry that is vital for the institution's effectiveness. I maintain a zero-tolerance stance towards cheating, and no exceptions will be entertained. Students found engaging in acts of cheating, plagiarism, or any form of academic dishonesty will face a reduction of their course grade by a minimum of one letter grade. Moreover, it is my responsibility to report any instances of unethical conduct or indications of dishonesty in this course to the University.

Please bear in mind the current university regulation: any occurrence of cheating, irrespective of its magnitude, will result in an "X" grade notation on the student's academic record, signifying that the grade was attained through dishonest means. This "X" grade will persist on the student's record until graduation. Should a student be caught cheating again and subsequently receive another "X" grade, they will be dismissed from the University.

Plagiarism encompasses the act of copying text or ideas from external sources without appropriate citation. Even if you rephrase the concept using your own words, citing the origin is necessary when utilizing someone else's idea. It is imperative to exercise extreme caution to prevent presenting someone else's work as your own. Proper citations are obligatory when incorporating external sources' ideas, arguments, or any content. Whether drawing from research or the Internet, it is mandatory to acknowledge the source, even if you employ the general notion rather than verbatim wording.

Learning environment

I wholeheartedly embrace feedback on my teaching during the entirety of the semester. I strongly encourage you to reach out to me or my TA whenever you have questions, suggestions, concerns, or if you seek advice. Your input is valued and will contribute to enhancing the learning experience. Feel free to contact us at your convenience.