

The Hong Kong University of Science and Technology

UG Course Syllabus

Capstone Project

SOSC 4110

3 Credits

Pre-requisites: For QSA students in their fourth year of study, with the course instructor's approval.

Time: Mon & Wed, 12:00PM – 1:20PM

Venue: Room 5402, Academic Building (Lift 17-18)

Name: Titi ZHOU

Email: ttz@ust.hk

Office Hours: By appointment

Course Description

The purpose of this course is to prepare students for conducting independent research in social science, using quantitative data analysis. You will formulate a research question, locate or construct a relevant data set, analyze the data to answer that question, and write up and present your findings.

To ensure continued progress on your project, you will need to find a faculty member to serve as your advisor. They can offer advice on how to better design your analysis and how to effectively convey data-backed arguments in both written and oral formats.

Intended Learning Outcomes (ILOs)

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

ILO1: Formulate and articulate a clear, specific research question suitable for investigation in the field of social science using quantitative methods.

ILO2: Locate or construct relevant datasets necessary for addressing their research question.

ILO3: Apply appropriate analytical techniques to interpret data effectively and draw valid conclusions.

ILO4: Communicate their research findings effectively in both written and oral formats.

Advisor

Students are required to find a faculty member in the Division of Social Science to supervise their Capstone Project. Each faculty member may supervise **a maximum of four students**. Once a faculty member has agreed to supervise, students must inform the course coordinator for record-keeping purposes.

If you are uncertain about which faculty member might serve as a suitable advisor, please visit the Division's website (<https://sosc.hkust.edu.hk/people/faculty>) to explore their research fields, topics and regional focus. Don't be overly concerned with the specific research methods they employ; a good advisor will assist you not only in handling and analyzing data but also in developing a deeper understanding of your research topic through existing literature.

If you are unable to find an advisor within our Division and wish to work with a faculty member from another department, please consult with the course coordinator first.

Assessment and Grading

The grades will be assigned by advisors, without the use of a grading curve.

Assessment Task	Contribution to Overall Course grade (%)*	Due date
Attendance and Participation	5%	Week 1 to 13
Project Proposal & Tick@lab (<i>if applicable</i>)	15%	Feb 16 & Feb 23 (<i>if applicable</i>)
Mid-term Progress Report	20%	Mar 23
Project Presentation	20%	Apr 24
Final Paper	40%	May 29

* *Note:* The contribution of each task to the overall course grade serves only as a guideline for advisors, who have the discretion to make adjustments.

Mapping of Course ILOs to Assessment Tasks:

Assessed Task	Mapped ILOs	Explanation
Attendance and Participation	ILO1, ILO4	Engaging in discussions helps refine research question (ILO1) and improve communication skills (ILO4).
Project proposal & Tick@lab (<i>if applicable</i>)	ILO1, ILO2, ILO3	This task enables students to demonstrate their ability to Formulate research question (ILO1), evaluate data sources (ILO2), and identify appropriate analytical techniques to interpret data (ILO3).
Mid-term Progress Report	ILO1, ILO2, ILO3, ILO4	Regular updates require refining research question (ILO1), evaluating data (ILO2), applying analytical techniques (ILO3), and communicating their preliminary findings (ILO4).
Project Presentation	ILO1, ILO2, ILO3, ILO4	Presenting their research findings involves justifying research question (ILO1), evaluating data sets (ILO2), applying appropriate analytical techniques (ILO3), and effective communication (ILO4).
Final Paper	ILO1, ILO2, ILO3, ILO4	This task enables students to demonstrate their ability to conduct a research project by articulating a research question (ILO1), locating or constructing relevant datasets (ILO2), employing appropriate analytical methods (ILO3), and communicating their findings effectively (ILO4).

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
DI	Distinction	Has demonstrated an exceptional understanding of the research question, providing insightful evaluations of the dataset, applying appropriate analytical techniques, and communicated the research project clearly and coherently.
PA	Pass	Has demonstrated a clear understanding of the research question, effectively evaluated the dataset, applied appropriate analytical techniques, and communicated the research findings clearly.
F	Fail	Has not demonstrated a clear understanding of the research question, failed to obtain relevant dataset, or applied inappropriate analytical techniques. Communication of the research findings is unclear or incomplete.

Tick@lab Submission (*if applicable*)

If your research project involves **human participants, animals, artefacts, and safety issues**, you are required to obtain approval from the relevant review committee/panel (Animal Ethics Committee, Human and Artefacts Research Ethics Committee and Safety Panel) at the proposal stage or before the commencement of the research via **Tick@Lab**.

Tick@lab is a system developed by the University to help streamline the approval-seeking process. A guideline is available at <https://bit.ly/tickatlab>. You can also find some training videos there. For more specific questions, please contact the Tick@Lab Help Desk (ext. 5985; Email: crphelpdesk@ust.hk).

Specifically, research that involves the following will need to seek the approval from the aforementioned review committee **before its commencement**:

- The collection of data on living individuals;
- The use of non-anonymous or non-public data on living individuals;
- The collection of new data on individuals or contact with research subjects.

Research that employs existing secondary data that is aggregated, public or whose subjects are all deceased will normally *NOT* need to obtain university approval.

Please consult with your advisor and/or the course coordinator if you may need to obtain approval via Tick@lab. **The submission deadline is February 23 in Week 4.**

Presentation

At the end of this semester, you will give a **7-minute** presentation on your final project (the exact duration may vary depending on course enrollment). Your presentation slides must be submitted by **April 24**.

Specific arrangements will be announced later.

Final Paper

Write your paper as if it were to be used as a writing sample for an application to a postgraduate program or even submitted for formal review at a professional journal. It must be your own work. Even if the topic is part

of your advisor's ongoing research project, the paper should reflect a distinct line of your own ideas. Make clear how your paper is related to your advisor's research.

It is *NOT* acceptable to submit the same work for credit more than once. It is fine for a Capstone Project to build on previous work, but that needs to be disclosed and there has to be a clear distinction between the Capstone Project and the other work. If the work is related to anything you are doing in another class in which you are concurrently enrolled, this needs to be disclosed so that we can coordinate with your instructor of the other class.

The paper needs to follow the specific structure and format required by a major journal in the field that is mostly relevant to your topic. Usually, a published research paper includes abstract, introduction, background, hypothesis/estimation method, data, results, conclusion, and references.

Many social science journals require articles with a word count between **6000 and 8000 words**. It includes the main body of text, footnotes, references, and the headers of tables and figures. It does *NOT* include the title page, abstract or supporting information.

Following the structure and format of a typical social science journal article, the Final Paper should include the following elements:

Title and Your Name

The title on the title page should convey your key point by summarizing clearly your argument. A good title is *NOT* a list of topics or "the effect of A on B."

Do not forget to write your name. A footnote with your contact information and acknowledgments can be inserted after your name.

Abstract

An abstract of 150 words or fewer should provide a concise descriptive summary of your research question, the data and methods, results, and the implications of your findings.

Introduction

- First of all, state your research questions clearly and concisely.
- Justify the importance and significance of examining the questions.
- Briefly discuss how you examine your research questions, i.e. data and estimation strategy.
- Provide an overview of the rest of the paper (optional).

Background

- Keep in mind that the main purpose of this section is to convince readers the importance of your research questions.
- Only include *necessary information* for this purpose, i.e. the theories and literature that are directly related to the keywords in your research questions.
- Make clear how your study is different from the previous ones.
- Also explain why the difference from previous studies is important for readers.

Hypotheses

- Provide a clear logic that connects your dependent variable and key independent variables. The logic can be explained descriptively or mathematically.
- Explain how the logic would be consistent with different possible theories or explanations relevant to the topic.

Data

- Briefly introduce the source of your sample data and how they are collected.
- Present the summary statistics of the sample used in your empirical analysis.
- Explain about your dependent and key independent variables in more details and how you measure them.

Method(s)

- Briefly summarize the method(s) you employ.
- Explain why the method(s) employed are appropriate to address the research questions.
- Discuss how you address the issues of validation of evidence. This may involve the inclusion of more control variables, robustness checks, and comparisons with findings from other published research.

Results

- Interpretations should always be related to your research questions.
- Begin with discussing the coefficient estimates of your interest.
- You have to check all the sign, statistical significance, and magnitude of the coefficient estimates of your interest. But for control variables, checking signs would be enough.
- Focus on discussing what your empirical results actually show, i.e. objective discussion using statistical terminologies. Leave the discussions about the implications and importance of your findings to the Conclusion section.

Conclusions

- Present a summary of what you did and found in your paper.
- Clearly answer your research questions based on your empirical findings. The answers must be brief and written in "English", not in "Statistics". This is a key difference from the Results section.
- Discuss how important your findings can be and the possibilities that your findings may imply.

References

- Every work cited in the text, notes, tables, and figures must appear in the References; conversely, every work listed in the References should be cited in the text or elsewhere in the article.
- Use the same referencing style throughout your paper. You can refer to the styles of your favorite academic journals.

Appendices

- **Journal:** You should keep a weekly record of your progress on your Capstone Project, noting major developments, and meetings with your advisor.
- **Code:** Include all the **R** or other code that you used to produce any tables or figures included in the paper, as well as any code used to prepare the data for analysis.
- Other supporting information

Timeline

You are responsible for keeping in contact with your Capstone Project advisor to report on your progress. You should also keep a **project diary** recording your work on the project. The diary should be available in case your advisor or the course coordinator wants to look at it.

- **3rd week (Feb 16):** Submit a **project proposal** endorsed by your advisor via Canvas. This could be the one developed in **SOSC 4100 Research Pro-seminar** but may reflect modifications suggested by your

advisor. If the advisor agrees that the proposal for SOSC 4100 is adequate, it may be submitted earlier than the third week.

- The proposal should follow the format of the one developed for SOSC 4100. It should include a specification of the topic, the data, and the methods. It should also indicate whether the data have already been acquired, have not yet been acquired but are readily available, or still need to be collected.
- **4th week (Feb 23):** Deadline for **Tick@lab** submission (if applicable).
- **8th week (Mar 23):** Submit a **mid-term progress report** endorsed by your advisor via Canvas. In a few paragraphs, you should report on the analysis you have conducted so far.
- **12th & 13th weeks:** We will have three or four class meetings for presentations, depending on course enrollment. Presentation slides must be submitted by **Apr 24**. The specific schedule will be announced later.
- **May 29:** Submit your **final paper** via Canvas. Your advisor will receive your paper, review and make a brief evaluation, and then forward it to the course coordinator.

Schedule

Week	Presentation Topic	Meeting	Submission
1 (Feb 2)	Course Introduction	Yes	
2			
3 (Feb 16)	Project Proposal	Individually (if needed)	Proposal
4 (Feb 23)	Tick@lab Submission	Individually (if needed)	(If applicable)
5			
6			
7			
8 (Mar 23)	Mid-term Progress Report	Individually (if needed)	Progress Report
9			
10			
11			
11 (Apr 24)			Presentation Slides
12 (Apr 27)	Project Presentation	Yes	
12 (Apr 29)	Project Presentation	Yes	
12 (May 4)	Project Presentation	Yes	
12 (May 6)	Project Presentation	Yes	
May 29			Final Paper

Late submission Policy

Late submission will *NOT* be accepted unless a valid reason is given and prior special permission is obtained.

Course AI Policy

The use of generative AI tools is permitted to assist students with understanding course materials and project development, but they must verify AI-generated information with reliable sources and ensure all submitted work is original and properly cited to adhere to academic integrity.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include comments on strengths and areas for improvement. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to [Academic Integrity | HKUST – Academic Registry](#) for the University's definition of plagiarism and ways to avoid cheating and plagiarism.