

The Hong Kong University of Science and Technology

UG Course Syllabus

Research Pro-seminar

SOSC 4100

1 Credit

Pre-requisites: SOSC 3700. For QSA students in their fourth year of study only.

Time: Monday, 9:30AM – 10:20AM

Venue: Room 2463, Academic Building (Lift 25-26)

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Office Hours: Monday, 10:30AM – 11:30AM

Course Description

This course aims to prepare students for their QSA Capstone Project. Students will have opportunities to share and discuss their intended research topics, possible data sources, and analytical strategies. These discussions will enable students to refine their research plans, identify additional relevant sources, and develop analytical approaches to make persuasive arguments based on empirical evidence. Upon completing this course, students will have a well-developed research plan for their Capstone Project, which they will carry out in SOSC 4110.

Intended Learning Outcomes (ILOs)

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

ILO1: Identify and justify a research topic, demonstrating a deep understanding of the field and the ability to position the research within the existing literature.

ILO2: Evaluate the suitability and limitations of various datasets for addressing the proposed research questions.

ILO3: Apply appropriate analytical techniques to conduct preliminary data exploration.

ILO4: Develop a comprehensive research plan, including a detailed literature view, data sources, and analytical approach.

ILO5: Communicate the research plan effectively in written and oral form.

Capstone Project Plan

By the end of the semester, each student will be required to submit a Capstone Project Plan that is both realistic and achievable. The plan should encompass all essential elements of a research proposal, including a clear specification of the research aims and significance, a concise discussion of pertinent literature, and a detailed description of the data and methods to be employed.

The data used for a project can typically be sourced from a publicly accessible repository like the Inter-University Consortium for Political and Social Research (ICPSR) at <http://bit.ly/441ql4S>. However, it could also be data collected by the student or provided by a faculty member. For public data and faculty-provided data, it is crucial to ensure that the data's contents are suitable for the intended task.

The plan should consist of approximately 1750 words. But you have the flexibility to exceed this recommended word length if you want to get a head start on your Capstone Project by writing more comprehensive literature review, presenting descriptive results from your dataset, or writing some other material that can be reused in your final project.

Remember to number the pages and include references, which will not be included in the word count. Make sure that all the work is your own. If you need to use text from other sources when describing a method or dataset, clearly indicate it as a quotation and provide proper attribution.

While the general structure of the plan may resemble a proposal you have written for SOSC 2140 or a similar class, it is crucial that the plan is realistic and something you're confident you can complete within the given time frame of SOSC 4110. The project should involve quantitative analysis using the methods you have learned in SOSC 1100, SOSC 2400, and other relevant methods courses. Ideally, the dataset being used should be large and rich enough to effectively demonstrate your skills to potential employers or postgraduate programs.

The plan must include the following elements:

- **Aims (250 words):** Provide a concise overview of the goal of the Capstone Project that gives readers a basic understanding of your plan.
- **Significance (250 words):** Explain why the analysis is important and convince the reader that the project is worth doing.
- **Background (500 words):** Provide essential information about the topic or setting that is crucial for the reader's understanding, and critically discuss relevant studies to justify the necessity of your project in providing a thorough answer to the question at hand.
- **Hypotheses (250 words):** Specify testable hypotheses about the relationship between (at least) two variables, and briefly explain why you expect that relationship.
- **Data (250 words):** Describe the data you will use, including key details about the target population, sample size, and the time frame of data collection. Also, list the names of the variables that you will employ in your study.
- **Methods (250 words):** Describe the methods you will use to analyze the data. In addition to basic bivariate analysis, such as tabulations or scatterplots to examine the relationships between two variables, you should incorporate more advanced methods that demonstrate your acquired skills to potential employers or postgraduate programs.
- **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. You should use the same referencing style throughout your plan. You can refer to the styles of your favorite academic journals.

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

- 1. Attendance and Participation (5%):** Attendance at all scheduled meetings (see "Schedule" for specific dates) is required. You are also expected to actively participate in the discussion and provide comments and feedback to other students.
- 2. Work Plan (5%):** In the class on Monday of Week 3, students will give a concise, 2-3 minute oral presentation on the topic they plan to study. The presentation should briefly describe what questions motivate you, explain why you are interested in this topic, and specify what kinds of data you plan to use.

Presentation slides need to be submitted via Canvas to help the class follow your oral summary.

- 3. Progress Reports (x2, 15% each):** Throughout this course, each student is required to submit TWO progress reports via Canvas. The purpose is to help students make steady progress on their research design and assist the instructor in monitoring their progress.

Each report should generally consist of 1-2 pages of informal writing (1.5 spaced). The report should encompass the various efforts undertaken, such as the specified goals to be achieved, the challenges encountered and addressed, the significant findings, and the intended next steps to be taken.

- Presentation (15%):** To ensure sufficient time for each student to share and discuss their research projects, students only need to choose **ONE** of the two progress reports to present in class. Presentation slides need to be submitted via Canvas by the day prior to the scheduled presentation date. Details regarding the arrangement will be provided later.
- 4. Capstone Project Plan (30%):** Upon completing this course, students will submit a well-developed research plan for their Capstone Project.
 - Presentation (15%):** Presentation slides need to be submitted via Canvas by the day prior to the scheduled presentation date. Details regarding the arrangement will be provided later.

Summary Table:

Assessment Task	Contribution to Overall Course grade (%)	Due date
Attendance and Participation	5%	Week 1 to 13
Work Plan	5%	Sep 15, 2024
1 st Progress Report	15%	Oct 6, 2024
2 nd Progress Report	15%	Oct 27, 2024
Progress Presentation*	15%	Oct 7 OR Oct 28, 2024
Capstone Project Plan Presentation*	15%	Nov 18 OR Nov 25, 2024
Capstone Project Plan	30%	Nov 30, 2024

* Note: Presentation slides must be submitted ONE day before the presentation date.

Mapping of Course ILOs to Assessment Tasks:

Assessed Task	Mapped ILOs	Explanation
Attendance and Participation	ILO1, ILO5	Engaging in discussions helps refine research topics (ILO1) and improve communication skills (ILO5).
Work Plan	ILO1, ILO2, ILO5	Identifying research topics (ILO1), evaluating data sources (ILO2), and presenting plans (ILO5) enhances understanding and communication.
Progress Report	ILO1, ILO2, ILO3, ILO4	Regular updates require refining research topics (ILO1), evaluating data (ILO2), applying analytical techniques (ILO3), and developing research plans (ILO4).
Progress Presentation	ILO1, ILO2, ILO3, ILO4, ILO5	Sharing progress enables students to communicate research plans effectively in oral form (ILO5), including their understanding of the field (ILO1) and their evaluation of data sources (ILO2) and analytical approaches (ILO3, ILO4).
Capstone Project Plan Presentation	ILO1, ILO4, ILO5	Presenting a comprehensive plan involves justifying research topics (ILO1), developing plans (ILO4), and effective communication (ILO5).
Capstone Project Plan	ILO1, ILO2, ILO3, ILO4, ILO5	This task allows students to demonstrate their ability to develop a well-developed research plan for their Capstone Project, covering all the essential elements of a research proposal, including the research aims and significance (ILO1), data sources (ILO2), analytical approach (ILO3, ILO4), and effective communication (ILO5).

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
P	Pass	Has demonstrated a clear understanding of the research topic, effectively evaluated data sources, applied appropriate analytical techniques, and communicated the research plan coherently. All components of the Capstone Project Plan are well-developed and meet the course requirements.
F	Fail	Has not demonstrated a clear understanding of the research topic, failed to evaluate data sources effectively, or applied inappropriate analytical techniques. Communication of the research plan is unclear or incomplete, and key components of the Capstone Project Plan are missing or inadequate.

Student Rubrics

The following rubrics will be used to assess the tasks that you submit or achieve.

Class Participation and Attendance Rubric:

Criteria	Excellent	Good	Average	Below average	Unsatisfactory
Attendance	Attends all classes	Attends all or misses 1 class with a valid excuse (e.g. illness, emergency)	Misses 1 class with a valid excuse (e.g. illness, emergency)	Misses 2 classes, regardless of excuse	Misses more than 2 classes, regardless of excuse
Engagement in Class	Actively participates in discussions, asks thoughtful questions, and provides insightful comments	Participates regularly in discussions and asks questions to clarify understanding	Participates occasionally, but contributions are basic or demonstrate only partial understanding	Rarely participates, even when called upon, and does not seem engaged	Does not participate in class discussions and shows no engagement

Work Plan Rubric:

Criteria	Excellent	Good	Average	Below average	Unsatisfactory
Topic Description	Clearly and concisely describes the topic with exceptional depth and clarity.	Clearly describes the topic with good detail.	Describes the topic adequately but lacks depth.	Vaguely describes the topic with little clarity.	Fails to describe the topic clearly.
Importance of Topic	Thoroughly explains the importance and relevance of the topic with strong insight.	Explains the importance of the topic with solid reasoning.	Provides a basic explanation of the topic's importance.	Offers limited reasoning for the topic's importance.	Does not explain why the topic is important.
Data and Methods	Specifies data and methods in detail, demonstrating strong understanding.	Specifies data and methods with clear understanding.	Mentions data and methods but with limited detail.	Provides minimal information about data and methods.	Fails to specify data and methods adequately.

Progress Report Rubric:

Criteria	Excellent	Good	Average	Below average	Unsatisfactory
Organization and Clarity	Report is exceptionally well-organized, and ideas are clearly presented.	Report is well-organized with clear presentation of ideas.	Report is organized but lacks some clarity.	Report is poorly organized and lacks clarity.	Report is disorganized and unclear.
Comprehensiveness	Includes detailed records of all activities, including literature, data exploration, and analysis.	Includes records of most activities with good detail.	Includes basic records of activities but lacks depth.	Provides minimal records of activities with limited detail.	Fails to include essential records of activities.
Reflection on Challenges	Thoroughly documents failed attempts and reflects on their significance.	Documents failed attempts with some reflection.	Mentions failed attempts but with limited reflection.	Barely mentions failed attempts and lacks reflection.	Does not document failed attempts.
Evolution of Ideas	Clearly shows the evolution of ideas and adjustments made during the project.	Shows some evolution of ideas and adjustments.	Shows limited evolution of ideas and adjustments.	Shows minimal evolution of ideas and adjustments.	Does not show any evolution of ideas or adjustments.

Presentation Rubric:

Criteria	Excellent	Good	Average	Below Average	Unsatisfactory
Content	Demonstrates a thorough and insightful understanding of the research topic, data sources, and analytical approach. Key elements (aims, significance, background, hypotheses, data, and methods) are covered comprehensively.	Covers the key elements of the research plan, but could benefit from more depth or clarity in certain areas. Demonstrates a good understanding of the project.	Includes the basic required elements, but lacks depth or clarity in some areas. Demonstrates a general understanding of the project.	Misses one or more key elements of the research plan and shows limited understanding of the project.	Fails to cover the essential elements of the research plan and demonstrates a poor understanding of the project.
Organization	Extremely well-organized with clear, logical flow and smooth transitions.	Generally well-organized with mostly clear flow and smooth transitions.	Adequate structure but could improve flow and transitions.	Lacks clear organizational structure, difficult to follow.	Poorly organized with no clear structure or flow.
Visuals	Visually appealing, well-designed, and effectively support the content. Appropriate use of graphs, tables, and other visual aids.	Presentation slides are clear and generally well-designed, with appropriate use of visual aids.	Presentation slides are functional, but could benefit from improvements in design and/or use of visual aids.	Presentation slides are basic or cluttered, with limited use of visual aids.	Presentation slides are poorly designed, distracting, or do not effectively support the content.
Delivery	Speaks clearly and confidently, maintains eye contact, engages audience. Answers questions thoughtfully.	Speaks clearly, maintains some eye contact, engages audience reasonably well. Answers questions adequately.	Somewhat uneven delivery, with occasional lapses in clarity or audience engagement. Struggles with questions.	Hesitant or monotonous delivery, limited eye contact and audience engagement. Difficulty answering questions.	Unclear, disconnected delivery that fails to engage the audience. Unable to answer questions effectively.
Timeliness	Presentation is within the allotted time frame and paced appropriately.	Slightly over or under the time frame, but reasonably paced.	Noticeably over or under the time frame, with some pacing issues.	Significantly over or under the time frame, with poor pacing.	Vastly over or under the time frame, with extremely poor pacing.

Capstone Project Plan Rubric:

Criteria	Excellent (5)	Good (4)	Satisfactory (3)	Needs Improvement (2)	Unsatisfactory (1)
Aims and Significance	Clearly defined aims; strong justification of significance.	Clear aims; good justification of significance.	Adequate aims; basic justification.	Vague aims; weak justification.	Unclear aims; no justification.
Background and Literature	Provides critical review of relevant literature, clearly positioning the project.	Provides a good review of relevant literature and context.	Includes some relevant background information but could be more thorough.	Limited background information or literature review.	Lacks sufficient background and literature review.
Hypotheses	Clearly stated, testable, and well-justified.	Clearly stated, mostly testable, somewhat justified.	Clearly stated, somewhat testable, no justification.	Vague, difficult to test, no justification.	Unclear or missing hypotheses.
Data Description	Detailed data description; appropriate dataset choice.	Good data description; suitable dataset.	Basic data description; dataset mostly suitable.	Limited data description; questionable dataset choice.	Incomplete or irrelevant data description.
Methods	Comprehensive and advanced methods; well-aligned with aims.	Clear methods; aligned with aims.	Basic methods; somewhat aligned with aims.	Limited methods; weak alignment with aims.	Inadequate or inappropriate methods.
Organization & Writing	Exceptionally well-organized, clear, and concise writing. Follows all formatting requirements.	Well-organized, clear writing. Mostly follows formatting requirements.	Satisfactory organization and writing, with minor formatting issues.	Poorly organized, unclear writing. Significant formatting issues.	Disorganized, unclear writing. Does not follow formatting requirements.

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.

Late submission Policy

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

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.

Schedule

Week	Presentation Topic	In-class Meeting	Submission
1 (Sep 2)	Course Introduction	Yes	
2			
3 (Sep 16)	Work Plan	Yes	Work Plan & the presentation slides due on Sep 15
4			
5			
6 (Oct 7)	1st Progress Report	Yes	1st Progress Report & the presentation slides due on Oct 6
7			
8			
9 (Oct 28)	2nd Progress Report	Yes	2nd Progress Report & the presentation slides due on Oct 27
10			
11			
12 (Nov 18)	Capstone Project Plan (1/2)	Yes	Presentation slides due on Nov 17
13 (Nov 25)	Capstone Project Plan (2/2)	Yes	Presentation slides due on Nov 24
13 (Nov 30)			Capstone Project Plan due on Nov 30