香 港 大 學
THE UNIVERSITY OF HONG KONG

The semester and year that the course is expected to be offered as a CI-Badged Course

Communication-intensive Course (CI Course) Certification Form

Course Code	Course Title	Course Coordinator	Expected Offering Year & Semester	Badging Type	
BSDS4999	Project	Dr Man Fung LO	Sem 1 & 2, 2023-24	☑	**New Course**
				☐	**Renewal**

Communication 'Literacies' - In which literacy areas do students on the course develop and demonstrate communication-related *knowledge* (understanding of communication as it relates to human interaction), *skills* (skills in communicating effectively with others, using language and/or other means) and *attributes* (the attributes of effective communicators)? Please select at least two and put a tick (✓) in the boxes.

	***Oral literacy*:** The ability to communicate through spoken texts that are constructed with the appropriate content, structure and language features, fit for th…rofessional purpose and audience.
✓	***Written literacy***: The ability to communicate thro…cted with the appropriate content, structure and language features, fit for their intended academic, social or professional purpose and audience.
✓	***Visual literacy***: The ability to communicate in speech and writing through appropriate visual modes (e.g., diagrams, graphs, charts) and/or visual media (e.g., posters, 3-D printed objects, stage performances).
	Digital literacy: The ability to use appropriate information and communication technologies to find, evaluate, create, and communicate information in speech and writing (e.g., wikis, websites, virtual reality projects).

Ensure that each selected literacy is explicitly taught and assessed in the course.

Course Learning Outcomes – Please list the course learning outcome(s) that relate explicitly to students' learning of communication-related knowledge, skills and attributes. The following are examples from four different courses:

Students will be able to…

Oral literacy: *Apply the basic principle of solution-focused interviewing and counselling and demonstrate interviewing and counselling skills in authentic cases.*

Written/visual literacy: *Conduct an in-depth scientific literature review on a key regional geological issue and present the findings through visuals (e.g., graphs/charts) and an engaging, comprehensive online written format.*

Oral/written literacy: *Generate and refine designs into detailed engineering specifications and be able to effectively communicate and defend the project status ar…ritten forms.*

Oral/written/digital literacy: *Create design do…'s, art 'bibles' and other pertinent technical documents and present these throug…te.*

Copy and paste from your course outline and modifying to clearly show communication literacies.

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

Written literacy:

- (CLO3) Produce a competent literature review in the field of social data science;
- (CLO4) Propose a project in social data science

Written/Visual literacy:

- (CLO5) Conduct a project in social data science and present using written format.

Assessment component – Please list the communication-rich assessment task(s) that measure the communication-related course learning outcomes on the course. Please indicate what proportion of the course grade is allocated to performance on the assessment(s).

This is a two-semester course. At the end of the first semester, students are required to submit a research proposal which should include the background, research questions, literature review and the proposed methodology. Before the proposal submission, students are required to submit their drafts twice for formative feedback.

After obtaining the supervisor's and ethical approvals, students continue to conduct their research in the second semester. At the end of the second semester, students are required to prepare a project report which should include the updated background,

research questions, extended literature review, methodology adopted, findings/interpretations, discussion/implications, and limitations. In addition, students are required to conduct a poster presentation and to submit a personal journal.

There are three assessment tasks that measure the two communication-related learning outcomes:

1. Monthly submissions (10%) and Research Proposal (30%) with Supervisor Endorsement (written literacy) – badged for CIC.
   Students work in a group of at most two to develop a research proposal in 1,800 - 2,000 words to investigate some aspects of social data science. The proposal should include research questions, literature review and rationale for selection of research methods, proposed methodology. As a formative assessment and to ensure progress, students are required to submit a preliminary writing of the final proposal by designated weeks. Formative feedback is provided by the instructors to improve students' learning (i.e., monthly submissions).
2. Project report (50%) (written and visual literacy) – badged for CIC.
   Students work in individual or groups to complete a project on an end
   early proposal and under supervision. Each individual or group will su
   are deducted for exceeding the word limit.

Please only include the CIC related assessments. Indicate the percentage in brackets *and include a brief description of each CIC related assessment.*

Please refer to sample CiC Syllabus Statements to complete this section. After badging approval, this section will appear in your course syllabus and read by students.

What communication knowledge and skills will students learn in this course?

In this course, students will learn the communication knowledge and skills for research proposal and report writing for audience in the discipline of social data science. Specific knowledge and skills as they relate to written communication include brainstorming, structuring a research report, referring to others' work (literature), presenting and discussing findings, and using accurate language and appropriate tone in presenting ideas and argument. Specific knowledge and skills as they relate to visual communication include developing useful charts/graphics, and interpreting visuals/graphs.

How will students learn these? Describe (1) the teaching and learning activities in your course that teach the communication knowledge and skills, (2) practice activities in your course and (3) opportunities for formative feedback.

The answers to these questions will appear in the CiC Badge. The CiC Badge must be included in the course outline to inform students that they are taking a CiC Course.

Students will learn these communication knowledge and skills through
including in-class discussion (analyzing samples of social data science
hands-on practice (tutorials about data visualization), and peer and teacher feedback during lessons.

For written literacy, the teacher introduces the requirements of the research proposal/project report (including the content, structure, language and referencing during the lesson. Some good and bad samples are provided for critical evaluation and discussion. Students are also given the opportunities to practice (e.g., writing research questions for a given research problem) and peers and teacher provide formative feedback on their work on the Moodle. Students are expected to use the feedback they receive for the research proposal on their writing skills for when they write the project report.
For visual literacy, the teacher introduces the principles of design and use of effective visual communication (e.g., diagrams, graphs, charts, use of color, font size…etc.) during the lessons. Hands-on exercises using contemporary tools (e.g., Excel, Python, or Tableau) are organized to equip students' skills. Students will create some visuals using sample data. Upon completion, they will upload their work to the course Moodle and receive feedback from their peers and the teacher. Students are expected to use this feedback when they design visuals for the project report.

What does a good communicator look like in this course? – Please list the expected communication-related attributes you want your students to have after taking your course (e.g. confidence, openness to diverse perspectives and ways of learning, ability to respond to constructive criticism from peers and the teacher, developing interpersonal skills to collaborate with others to achieve a common goal, collaboration with peers, providing constructive feedback to peers, following the conventions of a genre, and having personal and academic integrity).

A good communicator in this course will be reflected by two aspects:

(i) Being able to consider multiple perspectives and think in a critical manner; presenting ideas and arguments logically, and concisely; using appropriate features of language to convey meaning to the target audience; improving the quality of the written communication; and responding to constructive criticism from teachers.

(ii) Presenting the content with appropriate choice of visuals; organizing the content (in the visuals) in a logical manner; using appropriate contrasts and font-to-graphic ratio (color, font, size, etc.).

Please attach the following documents with this certification form (tick included items):

	Please tick below
Course Syllabus (track changes version)	✓
Course Schedule (please highlight the CIC components i.e. where and when in the course the students will acquire the specific knowledge, and develop the specific skills required of a good communicator)	✓
Assessment Tasks/Instructions and Rubrics	✓

Submit all documents to the CIC committee (cics@hku.hk).

Bachelor of Arts and Sciences in Social Data Science

BSDS 4999

Project

THE UNIVERSITY OF HONG KONG

Faculty of Education

- 2022/2023 -

Course Description

Students will learn basic research methods and skills in doing a project in social data science. Topics including key elements of a research project, steps of the research process, and quantitative and qualitative research methods are introduced in lectures. Students then complete a substantial final year project under supervision.

This course includes two components:

1. 12-hour lectures on research methods and skills in the first term of Year 4. The course is based on 6 sessions of 2 hours duration each. At the end of this component, students in individual or groups will submit a proposal of their project.

2. A final year project to be completed by individual or in groups under supervision in the second term of Year 4. Student individual or groups will meet with their supervisor on an ongoing basis.

Course Aims

The research methods component aims to introduce various methods that underpin research in the social sciences. Students will also learn the basic skills in writing a research proposal for a topic in social data science, which is required in the study of final year project.

The final year project, as a capstone course, is to provide students with an opportunity to pursue their own research interests under the supervision. It aims to enable students to apply the knowledge in social data science to the various practices of social data science by using relevant research methods.

Pre-requisites and Co-requisites and/or Prohibited Combination

Students are required to complete the Year 3 courses before taking this course. Within this course, students are required to take the final year project after they complete the research methods component.

Facilitator

Name of instructors
Dr Man Fung, LO Email: mflo@hku.hk Web: https://web.edu.hku.hk/faculty-academics/mflo

Course Learning Outcomes (CLOs)

Bachelor of Arts and Sciences in Social Data Science

Course learning outcomes (CLOs)	**Aligned programme learning outcomes (PLOs)** *(Please refer to the PLOs of the respective curricula / programmes.)*							**Related Assessment Task(s)**
	PLO 1	***PLO 2***	***PLO 3***	***PLO 4***	***PLO 5***	***PLO 6***	***PLO 7***	
1. Analyze key issues in social data science research	✓		✓		✓	✓	✓	**1, 2, 3, 4, 5**
2. Apply qualitative and quantitative methods of research		✓		✓	✓			**1, 2, 3, 4, 5**
3. Produce a competent literature review in the field of social data science	✓		✓		✓	✓	✓	**1, 2, 4, 5**
4. Propose a project in social data science	✓	✓	✓				✓	**1**
5. Conduct a project in social data science and present using written format.	✓	✓	✓	✓	✓	✓	✓	**2, 3, 4, 5**

CiC related CLOs, these must match with CIC Certification form P.1

Consultation and Communication Policy

Please come to my office with **prior appointment making confirmation via email**. Questions should not be merely asked via email, and you are expected to ask questions as much as possible during the lesson. You are encouraged to set up consultation meetings with me (strongly recommended to come as a group) concerning your individual and group assignment.

Students are strongly encouraged to check the emails or the New Announcement in the Moodle. I may constantly share extra information from there to enrich your learning experience and keep you updated about the industries and professional bodies. You are also encouraged to share news related to this course to the classmates.

Structure

Course teaching and learning activities (TLAs)	*Teacher-Student Face-to Face Contact hours*	*Study Load In Hours (estimates)*	*Alignment with CLOs*
Interactive Lecture: 6 sessions (2 hours each) Including small group discussions, search for research articles, exercises, student presentations, and lectures	12	-	1, 2, 3, 4
Supervision: student individual/groups meet with faculty supervisors on an ongoing basis for research guidance and discussions	12		5
Self-study: reading, library research, and writing personal journal		40	1, 2, 3
Individual/Group study: working by individual or collaborating on group project proposal, conducting research preparing for project presentation, and writing for project	-	75	3, 4, 5
Total	24	115	

Assessment Tasks

Overview

This is a two-semester course. At the end of the first semester, students are required to submit a research proposal which should include the background, research questions, literature review and the proposed methodology. Before the proposal submission, students are required to submit their drafts twice for formative feedback.

After obtaining the supervisor's and ethical approval, students continue to conduct their research in the second semester. At the end of the second semester, students are required to prepare a project report which should include the updated background, research questions, extended literature review, methodology adopted, findings/interpretations, discussion/implications, and limitations. In addition, students are required to conduct a poster presentation and to submit a personal journal.

Task No.	*Title*	*Mode of assessment*	*Percentage of course grade*	*Related LO*
1	Monthly Submissions (10%) and Research Proposal with Supervisor Endorsement (30%)	Individual/Group	40% (badged for CIC)	1, 2, 3, 4
2	Project report	Individual/Group	50% (badged for CIC)	1, 2, 3, 5
3	Personal journal	Individual	5% (not badged for CIC)	1, 2, 5
4	FYP presentation to individual FYP supervisors	Individual/Group	5% (not badged for CIC)	1, 2, 3, 5
5	FYP poster conference	Individual/Group	Mandatory (Pass/Fail of BSDS4999)	1, 2, 3, 5

Submission of "Intention of Project" form (Due: 18 September 2022) (MANDATORY)

Students are required to submit the "Intention of Project" form work by the due date, to express your intention of the project with your initial project title and the potential supervisors. You also need to form

an individual or a group of two members to complete the project, and the name of your partner (if any) needs to be submitted on the form. You also need to write within 50 words to express what you intend to study for the potential supervisor approval. Late submission will automatically assume no intention to take the final year project, which may lead to a **Fail in the course**. You are also welcome to approach any supervisor and obtain their verbal agreement before submitting the form. This will help secure a place on a first-come-first-served basis. If no agreement is sought before submitting the form, no guarantee of the supervisor is given, and a random assignment will be made.

Monthly submissions (10%) and research proposal (30%) with supervisor endorsement (Due: 30 November 2022) (TOTAL: 40%) – badged for CIC

Students work in a **group of AT MOST two** to develop a research proposal in **1,800 - 2,000 words** to investigate some aspects of social data science. The proposal can be derived from or based upon students' internship experiences. The proposal should include **background, research questions, literature review and rationale for selection of research methods, and the proposed methodology**.

As a formative assessment and to ensure progress, students are required to submit a preliminary write-up of the final proposal by designated weeks: Formative feedback is provided by the instructors to improve students' learning:

Mandatory tasks	**Due Date**
➢ Submit preliminary research questions and objectives (2%) ➢ Submit a preliminary literature review and reference list (4%)	15 October
➢ Submit a preliminary methodology (2%) ➢ Submit a preliminary ethics approval application (2%)	12 November

You are more than welcome to contact the supervisor for all these tasks and seek their comments before submission. **Late or fail to submit to lead to the zero mark for any of these.** But you can still submit your final proposal to proceed.

Students are **REQUIRED** to meet (face-to-face or online) with the supervisor **at least once** and seek for the endorsement signature (physical or digital) of the supervisor as the front page of the proposal before submitting for grading. Receiving the endorsement does not automatically mean a warranty of the pass in the research proposal assignment. The proposal of course does not have to be the final implementation, but it has to show some levels of understanding of the project topic after discussing with the assigned supervisor.

The students must discuss with the supervisors about developing the preliminary project idea. Please be expected that you may have limited choice in carrying out any research project due to the limited research skills. It is strongly advised that the students discuss with the supervisors and develop a feasible research project, and the supervisor has the right to make the final decision on endorsing your research proposal for actual implementation.

Project report (Due: 25 May 2023) (50%) –badged for CIC

Students work in individual or groups to complete a project on an endorsed topic in their final year of study based on their early proposal and under supervision. Each individual or group will submit a report between 6,000 – 7,000 words. No marks are deducted for exceeding the word limit. It should generally include the updated background, research questions, extended literature review, methodology adopted, findings/interpretations, discussion/implications, and limitations. Detailed requirements and guidelines

Assessment Task / Instructions

for the final year project are provided in another document.

FYP presentation to individual FYP supervisors (Due: 19 May 2023) (5%) – not badged for CIC

All students are required to give a 10-minute presentation on their FYPs to their supervisors by 19 May 2023, the latest. 5% marks for the presentation will be counted towards the FYP. The presentation can be conducted online or face-to-face which will be decided by individual FYP supervisors. Individual FYP supervisors will communicate with students for the arrangement in due course.

Personal journal (Due: 25 May 2023) (5%) – not badged for CIC

- All students need to submit an individual reflection between 700 - 800 words
- Demonstrate a progression of changes (evidence of reflection) in your understanding
- Describe the problems you encounter, how you dealt with them, what you learned and what you might do in the future to avoid them
- How your role within the group changes as needed (if opt for group project)
  - Show an understanding of the issues that arise in undertaking developments in teams, and how they might be addressed; and
  - Peer evaluation on the contribution of all project members

FYP poster presentation (2 June 2023) (MANDATORY) – not badged for CIC

The mandatory FYP Poster Conference will be held on June 2, 2023. No marks will be counted towards the FYP but students who fail to join this event will be given an F for the FYP.

General Standards for Assessment

Please refer to the marking proforma and grading criteria on Moodle.

Schedule: September 2022 – June 2023 (subject to modifications)

Face to Face (On-campus) Session: Tuesdays, 10:30am – 12:20pm

Session No. Date	*Session*	*Required assignments*
Session 1 6-Sept	Topics: **Introduction to the social data science research** ● Course Overview ● Basics of Research and Data Analytics Life Cycle ● Project groups formation ● Introduction of Project Supervisors	● Form project group ● Contact potential supervisor
Session 2 13-Sept	Topics: **Initiating research project in social sciences** ● Key elements of research ● How to formulate a research problem and objectives ● How to conduct and write a literature review? **Written literacy:** Students learn how to write research objectives, and research questions. Students are also provided with the opportunities to analyze social data science literature and identify the research gap (through collaborative discussion).	● Submit Intention of Project Form
Session 3 20-Sept	Topics: **Selecting a research method (Quantitative methods)** ● The quantitative paradigm ● Data Acquisition (Open Data/Secondary Data) ● Data Pre-processing ● Exploratory Data Analysis ● Data Modelling and Model Evaluation **Visual literacy:** Students learn how to create commonly used visuals to represent social issues using appropriate data science tools (Python, Excel, or Tableau). Examples of these include bar charts, pie charts, line charts, histograms, heatmaps, scatterplots…etc. The principles of design (e.g., use of colors, font) are also covered. Students also learn how to interpret visual data in each of these visuals. Students create some visuals using sample data and receive peer and teacher feedback. The visuals created in this session will be used in the research report.	● Meeting with supervisor Students learn visual literacy in class Students practice and receive feedback on visual literacy in class
Session 4 27-Sept	Topics: **Selecting a research method (Qualitative and/ or mixed methods)** ● The interpretive paradigm ● Interviewing techniques and analysis of interview data ● Triangulation of data ● Issues of reliability and validity in qualitative research	● Announcement of assigned project supervisors

Session 5 **18-Oct**	Topics: **Formulating a research proposal: Developing your research study** ● Formulating a research study ● Defining the questions ● Mapping the research design, questions, data generation ● Conducting data analysis **Written Literacy:** Structuring a research proposal with appropriate language (e.g. impersonal tone, appropriate use of tenses, appropriate use of discipline specific vocabulary, citation using APA style 7th edition) ● Obtaining ethical approval	Due Date: 15 Oct ● Submit preliminary research questions and objectives (2%) ● Submit a preliminary literature review and reference list (4%)
Session 6 **25-Oct**	Topics: **Data analysis, dissemination, and presentation of results** **Project Report Written/Visual Literacy:** ● Types of data analysis (Sample reports are provided for students' evaluation, and discussion). ■ Statistical Tests ■ Machine Learning (Supervised and Unsupervised) ■ Social Network Analysis…etc. ● Use of visual representations (Sample reports are provided for students' evaluation, and discussion). ● Confirming and disconfirming data (Sample reports are provided for students' evaluation, and discussion). ● Assertions, implications, and conclusions (Sample reports are provided for students' evaluation, and discussion).	Due Date: 12 Nov ● Submit a preliminary methodology (2%) ● Submit a preliminary ethics approval application (2%)

Research Ethics Application

All projects involving human subjects (e.g., if you intend to interview people) must obtain ethics approval. **The ethics approval should be obtained before data collection**. Students should consult project supervisor for completion of the application. Please note the following website for information of ethics approval: https://web.edu.hku.hk/research/ethics-application .

References and Resources

Suggested references

- Attewell, P., Monaghan, D., & Kwong, D. (2015). *Data Mining for The Social Sciences: An Introduction*. University of California Press.
- Békés, G., & Kézdi, G. (2021). *Data Analysis for Business, Economics, and Policy*. Cambridge University Press.
- Bryman, A. (2019). *Social Research Methods*. Oxford University Press.
- EMC Education Services. (2015). *Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data*. Wiley.
- Estrellado, R. A., Freer, E., Mostipak, J., Rosenberg, J. M., & Velásquez, I. C. (2020). *Data science in education using R*. Routledge.
- Foster, I., Ghani, R., Jarmin, R. S., Kreuter, F., & Lane, J. (Eds.). (2020). *Big Data and Social Science: Data Science Methods and Tools for Research and Practice*. CRC Press.
- Garson, G. D. (2021). *Data Analytics for the Social Sciences: Applications in R*. Routledge.
- Grønmo, S. (2019). *Social Research Methods: Qualitative, Quantitative and Mixed Methods Approaches*. Sage.
- Klosterman, S. (2019). *Data Science Projects with Python: A Case Study Approach to Successful Data Science Projects using Python, Pandas, and Scikit-Learn*. Packt Publishing Ltd.
- Kotu, V., & Deshpande, B. (2018). *Data Science: Concepts and Practice*. Morgan Kaufmann.
- Mills, K. A. (2019). *Big Data for Qualitative Research*. Taylor & Francis.
- Nelson, G. S. (2018). *The Analytics Lifecycle Toolkit: A Practical Guide for an Effective Analytics Capability*. John Wiley & Sons.
- Shah, C. (2020). *A Hands-on Introduction to Data Science*. Cambridge University Press.

Other sources of reading

- Web Centre for Social Research Methods
  - http://www.socialresearchmethods.net/kb/
- Resources for Methods in Evaluation & Social Research
  - http://gsociology.icaap.org/
- Data Science for Social Good
  - https://www.datascienceforsocialgood.org/

Some of the Open Data Sources (some may require registration):

Site	URL
Hong Kong – Open Data	https://data.gov.hk/
United Kingdom – Open Data	https://data.gov.uk/
Australia – Open Data	https://data.gov.au/
United States – Open Data	https://www.data.gov/
EU Open Data Portal	https://data.europa.eu/en
South Korea Open Government Data portal	https://www.open.go.kr/com/main/mainView.do
GSS General Social Survey | NORC	https://gss.norc.org/
The International Social Survey Programme	http://www.issp.org/
Google's Dataset Search	https://datasetsearch.research.google.com/
Registry of Research Data Repositories	https://www.re3data.org/
Kaggle	https://www.kaggle.com/datasets
Harvard Dataverse	https://dataverse.harvard.edu/
FiveThirtyEight (Journalism)	https://data.fivethirtyeight.com/
UNICEF Data	https://data.unicef.org/resources/resource-type/datasets/
World Bank Open Data	https://data.worldbank.org/
OECD Data	https://data.oecd.org/
United Nations Data	http://data.un.org/
GHO data repository — World Health Organization	https://www.who.int/data/gho
UK Data Service	https://ukdataservice.ac.uk/
National Archive of Criminal Justice Data	https://www.icpsr.umich.edu/icpsrweb/content/NACJD/index.html
HealthData.gov	https://healthdata.gov/browse?limitTo=datasets
Quandl	https://data.nasdaq.com/search

Academic Conduct

Plagiarism involves the use of quotations without quotation marks, the use of quotations without indication of the source, the use of another's idea without acknowledging the source, the submission of a paper, report, project, or class assignment (any portion of such) prepared by another person, or incorrect paraphrasing.

Any student who fails due to plagiarism may be referred to the University Disciplinary Committee, which may then recommend discontinuation. Plagiarism is a serious matter. If you have any doubts about whether or not your use of sources constitutes plagiarism, ask your lecturer or course coordinator.

The students are suggested to use the tool Turnitin to check your assignment for correct scholarly practice in citing other's work. You will be provided with a "class ID" and "password" to enable you to check your assignments via appropriate "class" in Turnitin. Further details about Turnitin and how it works are obtainable from http://www.turnitin.com. The accepted referencing style is APA (http://www.apastyle.org/). The details and examples of APA formatting and style can be found at https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html.

Last updated on 8 March 2023

BSDS 4999 Project – Course Schedule

Session	Topics	Required Assignments
1	Topic: *Introduction to the social data science research* ➢ Course Overview ➢ Basics of Research and Data Analytics Life Cycle ➢ Project groups formation ➢ Introduction of Project Supervisors	➢ Form project group ➢ Contact potential supervisor
2	Topic: *Initiating research project in social sciences* ➢ Key elements of research ➢ How to formulate a research problem and objectives ➢ How to conduct and write a literature review? **Written literacy:** Students learn how to write research objectives, and research questions. Students are also provided with the opportunities to analyze social data science literature and identify the research gap (through collaborative discussion).	➢ Submit Intention of Project Form
3	Topic: *Selecting a research method (Quantitative methods)* ➢ The quantitative paradigm ➢ Data Acquisition (Open Data/Secondary Data) ➢ Data Pre-processing ➢ Exploratory Data Analysis ➢ Data Modelling and Model Evaluation **Visual literacy:** Students learn how to create commonly used visuals to represent social issues using appropriate data science tools (Python, Excel, or Tableau). Examples of these include bar charts, pie charts, line charts, histograms, heatmaps, scatterplots…etc. The principles of design (e.g., use of colors, font) are also covered. Students also learn how to interpret visual data in each of these visuals. Students create some visuals using sample data and receive peer and teacher feedback. The visuals created in this session are the kinds of visuals that will be used in the research report. Students are expected to use the peer and teacher feedback for when they design the visuals for the research report.	➢ Meeting with supervisor
4	Topic: *Selecting a research method (Qualitative and/ or mixed methods)* ➢ The interpretive paradigm ➢ Interviewing techniques and analysis of interview data ➢ Triangulation of data ➢ Issues of reliability and validity in qualitative research	➢ Announcement of assigned project supervisors

BSDS 4999 Project – Course Schedule

Session	Topics	Required Assignments
5	Topics: *Formulating a research proposal: Developing your research study* ➢ Formulating a research study ➢ Defining the questions ➢ Mapping the research design, questions, data generation ➢ Conducting data analysis ➢ **Written Literacy:** Structuring a research proposal with appropriate language (e.g. impersonal tone, appropriate use of tenses, appropriate use of discipline specific vocabulary, citation using APA style 7th edition) ➢ Obtaining ethical approval	Monthly Submission (Part 1): ➢ Submit preliminary research questions and objectives (2%) ➢ Submit a preliminary literature review and reference list (4%)
6	Topics: *Data analysis, dissemination, and presentation of results* **Project Report – Written/Visual Literacy:** ➢ Types of data analysis (Sample reports are provided for students' evaluation, and discussion). ■ Statistical Tests ■ Machine Learning (Supervised and Unsupervised) ■ Social Network Analysis⋯etc. ➢ Use of visual representations (Sample reports are provided for students' evaluation, and discussion). ➢ Confirming and disconfirming data (Sample reports are provided for students' evaluation, and discussion). ➢ Assertions, implications, and conclusions (Sample reports are provided for students' evaluation, and discussion).	Monthly Submission (Part 2): ➢ Submit a preliminary methodology (2%) ➢ Submit a preliminary ethics approval application (2%)

BSDS 4999 Project – Course Grade Descriptors

Grade	Description
A+/A/A-	Strong evidence of superb ability to fulfill the intended learning outcomes of the course at all levels of learning in both written and visual forms. Demonstrates a high degree of originality and independent thought and reflection. Demonstrates an extensive knowledge and understanding of the social data science research.
B+/B/B-	Strong evidence of ability to fulfill the intended learning outcomes of the course at all levels of learning in both written and visual forms. Demonstrates a good degree of originality and independent thought and reflection on the topic. Demonstrates a good knowledge and understanding of most aspects of social data science research.
C+/C/C-	Evidence of adequate ability to fulfill the intended learning outcomes of the course, as reflected in written and visual forms, at low levels of learning, such as applying, but not at high levels of learning, such as analyzing and proposing. Some originality and independent thought and reflection on the topic. Demonstrates a reasonable knowledge and understanding of most aspects of social data science research but with weaknesses in some key areas.
D+/D	Evidence of basic familiarity with the topics of social data science research covered. Little originality and independent thought or reflection on the topic. Shows limited knowledge and understanding of basic aspects of social data science research, but no applications. Weaknesses in some key areas.
F	Little evidence of basic familiarity with the subject. No originality and independent thought or reflection on the topic. Shows little understanding or application of social data science research. Significant weaknesses in key areas.

BSDS 4999 Project - Assessment Tasks/Instructions and Rubrics

Clear descriptions of expectations of performance.

Assessment Rubric – Research Proposal (30%)

Assessment Criteria	A (Excellent)	B (Good)	C (Average)	D (Borderline Acceptance)	F (Unsatisfactory)
Background and Literature Review (Written Literacy)	Informative with clear and relevant information establishing the context for the study with reference to major literature.	Generally informative with clear and relevant information establishing the context for the study with reference to some major literature.	Some relevant information establishing the context for the study with limited reference to literature.	Basic relevant information establishing the context for the study without reference to literature.	No relevant information establishing the context for the study
Proposed Methodology (Written Literacy)	Research design, data acquisition, pre-processing and analyses procedures are clearly described and are fully supported by literature.	Research design, data acquisition, pre-processing and analyses procedures are appropriately described and are partially supported by literature.	Research design, data acquisition, pre-processing and analyses procedures are described and are supported by limited literature.	A simple description about the research design, data acquisition, pre-processing and analyses procedures	Research design, data acquisition, pre-processing and analyses procedures are poorly described.
Structure and Organization (Written Literacy)	The ideas are arranged logically to support the purpose or argument. They flow smoothly from one to another and are clearly linked to each other. The reader can follow the line of reasoning.	The ideas are arranged logically to support the central purpose or argument. They are usually clearly linked to each other. For the most part, the reader can follow the line of reasoning.	In general, the report is arranged logically, although occasionally ideas fail to make sense together. The reader is fairly clear about what writer intends.	Shows attempt in organizing the report in a logical manner but the organization is loose and confusing. The reader is not very clear about what writer intends.	The report is not logically organized. Frequently, ideas fail to make sense together. The reader cannot identify a line of reasoning and loses interest.
Language and Mechanics (Written Literacy)	The language contains very few, if any, errors in grammar and vocabulary. If slips are present, the meaning is still clear. Conventions of academic writing (e.g. citation, references, footnotes, etc.) are followed meticulously.	The language is generally accurate but contains some systematic errors in complex grammar and vocabulary. Conventions of academic writing (e.g. citation, references, footnotes, etc.) are followed apart from the occasional oversight.	The language is mostly accurate; and errors, when they occur, they are more often in complex grammar and vocabulary. Errors are distracting but the overall meaning is still intelligible. Conventions of academic writing (e.g. citation, references, footnotes, etc.) are followed but at times inconsistencies and/or errors occur.	The language is sufficient for arguments to be understood with effort. However, the language contains frequent errors in simple and complex grammar and vocabulary that are distracting. Conventions of academic writing (e.g. Citation, references, footnotes, etc.) are followed but show many inconsistencies and/or errors.	Errors in language and vocabulary are so frequent and distracting that the essay is largely incomprehensible. Does not adhere to the conventions of academic writing (e.g. citation, references, footnotes, etc.).

Clear assessment criteria. These skills must be taught explicitly in the course.

BSDS 4999 Project - Assessment Tasks/Instructions and Rubrics

Clear descriptions of expectations of performance.

Assessment Rubric - Project Report (50%)

Assessment Criteria	A (Excellent)	B (Good)	C (Average)	D (Borderline Acceptance)	F (Unsatisfactory)
Background and (Extended) Literature Review (Written Literacy)	Informative with clear and relevant information establishing the context for the study with reference to major literature.	Generally informative with clear and relevant information establishing the context for the study with reference to some major literature.	Some relevant information establishing the context for the study with limited reference to literature.	Basic relevant information establishing the context for the study without reference to literature.	No relevant information establishing the context for the study
Methodology Adopted in the Research (Written Literacy)	Research procedures, data acquisition, pre-processing and analyses procedures are clearly described and are fully supported by literature.	Research procedures, data acquisition, pre-processing and analyses procedures are appropriately described and are partially supported by literature.	Research procedures, data acquisition, pre-processing and analyses procedures are described and are supported by limited literature.	A simple description about the research procedures, data acquisition, pre-processing and analyses procedures	Research procedures. data acquisition, pre-processing and analyses procedures are poorly described.
Visualization (Visual Literacy)	A range of outstanding, visually appealing visualizations that are highly informative and provide excellent insight into the data. These visuals complement and enhance the discussion in the text to a very high degree. All the graphic variable types are well-suited for the type/scale of the data they represented. All the title, headings, labels, and legends in the visuals are well-presented and are described accurately.	A range of visualizations are informative, insightful, and visually appealing. They provide good insight into the data. These visuals complement and enhance the text. Most of the graphic variable types are well-suited for the type/scale of the data they represented. Most of the title, headings, labels, and legends in the visuals are presented clearly and correctly.	Visualizations are straightforward and provide some insight into the data. They could be more visually appealing. These visuals complement and enhance the text to some degree. Around half of the graphic variable types are well-suited for the type/scale of the data they represented. Title, headings, labels. and legends in the visuals are presented but they are not described correctly.	Visualizations are simple and provide limited insight into the data. These visuals do not really complement and enhance the text. Only a few of the graphic variable types are well-suited for the type/scale of the data they represented. Title, headings, labels. and legends in the visuals lack clarity and are incomplete.	Limited attempts to visualize the data. None of the graphic variable types are suited for the type/scale of the data they represented. Title, headings, labels. and legends in the visuals are missing or incorrect.
, Findings and Discussion (Written Literacy)	An in-depth and comprehensive discussion is presented. Key findings are specifically related to previous research. Implications are well presented. Demonstrates creative thinking and critical	A detailed discussion is presented. Key findings are generally related to previous research. Implications are clearly presented. Demonstrates some creative thinking and critical analysis.	Sufficient discussion with some comparison to previous research. Some discussion of key findings and their implications. Demonstrates an adequate level of critical analysis.	Limited discussion with some comparison to previous research. Little discussion of key findings and their implications. Limited critical analysis is demonstrated.	No discussion to compare findings to previous research. Fails to discuss key findings. No critical analysis is demonstrated.

Clear assessment criteria. These skills must be taught explicitly in the course.

BSDS 4999 Project - Assessment Tasks/Instructions and Rubrics

Assessment Criteria	A (Excellent)	B (Good)	C (Average)	D (Borderline Acceptance)	F (Unsatisfactory)
	analysis.				
Structure and Organization (Written Literacy)	The ideas are arranged logically to support the purpose or argument. They flow smoothly from one to another and are clearly linked to each other. The reader can follow the line of reasoning.	The ideas are arranged logically to support the central purpose or argument. They are usually clearly linked to each other. For the most part, the reader can follow the line of reasoning.	In general, the report is arranged logically, although occasionally ideas fail to make sense together. The reader is fairly clear about what writer intends.	Shows attempt in organizing the report in a logical manner but the organization is loose and confusing. The reader is not very clear about what writer intends.	The report is not logically organized. Frequently, ideas fail to make sense together. The reader cannot identify a line of reasoning and loses interest.
Language and Mechanics (Written Literacy)	The language contains very few, if any, errors in grammar and vocabulary. If slips are present, the meaning is still clear. Conventions of academic writing (e.g. citation, references, footnotes, etc.) are followed meticulously.	The language is generally accurate but contains some systematic errors in complex grammar and vocabulary. Conventions of academic writing (e.g. citation, references, footnotes, etc.) are followed apart from the occasional oversight.	The language is mostly accurate; and errors, When they occur, they are more often in complex grammar and vocabulary. Errors are distracting but the overall meaning is still intelligible. Conventions of academic writing (e.g. citation, references, footnotes, etc.) are followed but at times inconsistencies and/or errors occur.	The language is sufficient for arguments to be understood with effort. However, the language contains frequent errors in simple and complex grammar and vocabulary that are distracting. Conventions of academic writing (e.g. Citation, references, footnotes, etc.) are followed but show many inconsistencies and/or errors.	Errors in language and vocabulary are so frequent and distracting that the essay is largely incomprehensible. Does not adhere to the conventions of academic writing (e.g. citation, references, footnotes, etc.).