HONG KONG BAPTIST UNIVERSITY
COURSE OUTLINE

1. COURSE TITLE

Advanced Quantitative Communication Research Methods

2. COURSE CODE

COMD7100

3. NO. OF UNITS

3 Units

4. OFFERING DEPARTMENT

Office of the Dean of Communication

5. PREREQUISITES

Nil

6. MEDIUM OF INSTRUCTION

English

7. AIMS & OBJECTIVES

This graduate course provides an in-depth exploration of advanced quantitative research methods pivotal for social and behavioral sciences, especially within the context of dissertation research and applied studies. Students will advance their understanding and application of multivariate methods, enhancing their analytical skills for the examination of complex data within communication and information disciplines.

Multivariate methods allow for an integrated analysis of variables from diverse sources, offering insights into the interconnectedness of variable sets, thus promoting more valid conclusions than univariate analysis. The emphasis of this course lies in the practical application of these methods—analysis, interpretation, and reporting—with an eye toward commonly used statistical analyses in communication studies.

The curriculum will foster a comprehensive understanding of each technique's appropriate use, the nuances of their practical application, and the considerations involved in method selection. Key topics include multilevel modeling, MANOVA, logistic regression, Structural Equation Modeling (SEM) with R and Mplus, meta-analysis, and time-series analysis.

Students will undertake hands-on projects throughout the semester, culminating in detailed reports styled in APA 7th edition format. These projects will be instrumental in

translating statistical outcomes into meaningful research conclusions.
Practical exercises will predominantly utilize R and Mplus software, with additional resources provided to support the learning experience. Most of the work will be conducted using both manual calculations and existing packages and functions.

8. COURSE CONTENT

1. Overview of multivariate data analysis and multivariate data exploration
2. Data cleaning, manipulation, and Data transformation
3. Multilevel modeling
4. Structural Equation Modeling with Mplus: basics, Partial least squares structural equation modeling (PLS-SEM), covariance-based structural equation modeling (CB-SEM), multi-group SEM, confirmatory factor analysis, etc.
5. Multivariate analysis of (co)variance
6. Logistic regression and Poisson regression
7. Meta-analysis with R: univariate, modelling using SEM, and network meta-analysis with Bayesian estimation
8. Time series analysis: panel-data regression (Cross-sectional time series analysis), Difference-in-differences (DiD), ARIMA modelling, etc.

9. COURSE INTENDED LEARNING OUTCOMES (CILOs)

CILO	By the end of the course, students should be able to:
CILO 1	Explain advanced quantitative research methodologies
CILO 2	Develop a research proposal using quantitative methods
CILO 3	Apply appropriate methodologies to investigate relevant issues

10. TEACHING & LEARNING ACTIVITIES (TLAs)

CILO alignment	Type of TLA
1, 2	Students will learn advanced quantitative methods and their applications in communication contexts via reading assigned textbook chapters and journal articles, attending lectures, and participating in in-class discussions.
3	Students will get hands-on experience via lab tutorial, training in the use of quantitative method for hypothesis testing and result presentation.
2, 3	Students will learn how to apply the quantitative methods to solve communication issues, how to report results, and write up a research article using the methods through individual assignments and group project.

11. ASSESSMENT METHODS (AMs)

Type of Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
Individual Exercises	30 %	1	Five take-home exercises will be given to test students understanding of quantitative methods. These will be submitted and returned with comments
Final Exam	30 %	1, 2	An open-book final examination will be administered to assess the students' proficiency in applying the methods learned to address research questions within the social sciences.
Final Project	40 %	2, 3	Students will be asked to write a full-length research article with solid data analysis learned from the class.

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