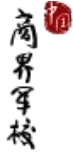




# PHBS

北京大学汇丰商学院



## Course Code Business Math (Statistics in Social Research) Module 2, 2024

### Course Information

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**Instructor: Zhuo Chen**

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Office Hour: 15:30-17:30 (Tue), 14:30 – 16:30 (Wed)

**Teaching Assistant: Wenchang Wang**

Phone:

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**Classes:**

Lectures: Tue & Fri, 10:30-12:20

Venue: PHBS Building, Room TBC

**Course Website:**

If any.

## 1. Course Description

### 1.1 Context

Course overview: This is an introductory course in elementary statistical analysis. Its objective is to introduce social research analysis with an emphasis on the practical use of various statistical tools, such as t-test, linear regression, and chi-square analysis. This course can serve as a supplement for related courses with a quantitative orientation. “Learning by doing” is the motto of this course—the most effective approach to learn statistical techniques is to deal with real-world data. Apart from teaching fundamental statistics, this course will use R to further explore various statistical techniques. Students will be given instructions necessary to perform a variety of statistical tests and interpret the output results.

Prerequisites: No.

### 1.2 Textbooks and Reading Materials

Levin J., Fox, J., & Ford, D. (2012). *Elementary Statistics in Social Research (twelfth edition)*. ISBN 13: 9780205459582

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

## 2. Learning Outcomes

### 2.1 Intended Learning Outcomes

| <b>Learning Goals</b>                                                      | <b>Objectives</b>                                                                                                                                                 | <b>Assessment (YES with details or NO)</b>                                  |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1. Our graduates will be effective communicators.                          | 1.1. Our students will produce quality business and research-oriented documents.                                                                                  | Yes, students are required to produce analytical reports.                   |
|                                                                            | 1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.                                                | Yes, students are expected to actively participate in the class discussion. |
| 2. Our graduates will be skilled in team work and leadership.              | 2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.                                                           | Yes, students will participate in group discussion.                         |
|                                                                            | 2.2. Students will be able to apply leadership theories and related skills.                                                                                       | Yes, with insight into business data.                                       |
| 3. Our graduates will be trained in ethics.                                | 3.1. In a case setting, students will use appropriate techniques to analyze business problems and identify the ethical aspects, provide a solution and defend it. | Yes, particularly quantitative analysis techniques.                         |
|                                                                            | 3.2. Our students will practice ethics in the duration of the program.                                                                                            | Yes.                                                                        |
| 4. Our graduates will have a global perspective.                           | 4.1. Students will have an international exposure.                                                                                                                | Yes, will include cases around the globe.                                   |
| 5. Our graduates will be skilled in problem-solving and critical thinking. | 5.1. Our students will have a good understanding of fundamental theories in their fields.                                                                         | Yes.                                                                        |
|                                                                            | 5.2. Our students will be prepared to face problems in various business settings and find solutions.                                                              | Yes.                                                                        |
|                                                                            | 5.3. Our students will demonstrate competency in critical thinking.                                                                                               | Yes.                                                                        |

## **2.2 Course specific objectives**

The representative learning objectives of this course are as follows:

1. Understand basic concepts and techniques of statistical analyses
2. Utilize statistical techniques for better decision making and problem solving
3. Use R to perform statistical analyses
4. Interpret various statistical test results

## **2.3 Assessment/Grading Details**

| Subject                      | Percent of Grade |
|------------------------------|------------------|
| Attendance and participation | 10%              |
| Assignments                  | 20%              |
| Group project                | 25%              |
| Final exam                   | 45%              |

## **2.4 Academic Honesty and Plagiarism**

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work;

taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

### 3. Topics, Teaching and Assessment Schedule

| Date   | Topic                      | Recommended reading                          |
|--------|----------------------------|----------------------------------------------|
| Nov.15 | Introduction I             | Chapter 1&2, Textbook (Levin et al., 2012)   |
| Nov.19 | Introduction II            | Chapter 3, Textbook (Levin et al., 2012)     |
| Nov.22 | Statistical inference I    | Chapter 5&6, Textbook (Levin et al., 2012)   |
| Nov.26 | Statistical inference II   | Chapter 5&6, Textbook (Levin et al., 2012)   |
| Nov.29 | R workshop I               |                                              |
| Dec.3  | t-test & ANOVA I           | Chapter 7&8, Textbook (Levin et al., 2012)   |
| Dec.6  | t-test & ANOVA II          | Chapter 7&8, Textbook (Levin et al., 2012)   |
| Dec.10 | R workshop II              |                                              |
| Dec.13 | Correlation                | Chapter 10&11, Textbook (Levin et al., 2012) |
| Dec.17 | Mid-term proposal          |                                              |
| Dec.20 | Regression                 | Chapter 10&11, Textbook (Levin et al., 2012) |
| Dec.24 | Path & SEM I               | Chapter 1, Textbook (Kline, 2015)            |
| Dec.27 | Path & SEM II              | Chapter 6, Textbook (Kline, 2015)            |
| Dec.31 | Model comparison           |                                              |
| Jan.3  | Logistic regression        | Articles                                     |
| Jan.7  | Recap (theory & concept)   |                                              |
| Jan.10 | Recap (method)             |                                              |
| Jan.14 | Final project presentation |                                              |

\*Note: The final exam will be held at 1:30 pm - 3:30 pm on Jan.16th (Thursday).

### 4. Miscellaneous

The syllabus is subject to change with prior notice to students either in class or via email.