MATH 2411 Applied Statistics

Course Outline – Fall 2023

1. **Instructor**
   Name: Dr. YAO, Jing **(L1, L2)**
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2. **Teaching Assistants**
   T1A
   Name: WANG Hongrui
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   T1B
   Name: XU Xin
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   T2A
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   T2B
   Name: ZHANG Fa
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   T2C
   Name: ZHANG Fa
   Email: fzhangat@connect.ust.hk

3. **Meeting Time and Venue**
   Lectures:
   L1
   Date/Time: L1:Tue, Thu 03:00pm - 04:20pm
   Venue: Room 4619 (Lift 31-32)

   L2
   Date/Time: L1:Tue, Thu 01:30pm - 02:50pm
   Venue: Room 4619 (Lift 31-32)

Tutorials:

T1A
Date/Time: Fri 05:00pm - 05:50pm
Venue: Room 4504 (Lift 25-26)

T1B
Date/Time: Mon 06:00pm - 06:50pm
Venue: Room 5583 (Lift 29-30)

T1C
Date/Time: Fri 12:30pm - 01:20pm
Venue: Room 4504 (Lift 25-26)

T2A
Date/Time: Tue 03:00pm - 03:50pm
Venue: Room 1207, LSK Bldg

T2B
Date/Time: Tue 06:00pm - 06:50pm
Venue: Room 1014, LSK Bldg

T2C
Date/Time: Thu 04:30pm - 05:20pm
Venue: Room 1007, LSK Bldg

4. Course Description

Credit Points: 4 units
Corequisites: MATH 1014 OR MATH 1018 OR MATH 1020 OR MATH 1024
Exclusions: IELM 2510, ISOM 2500, LIFS 3150

Brief information:

This course covers the material about probability theory, random variables, probability distributions, expectation, a systematic introduction to statistical inference, including the point and interval estimation, hypothesis testing, and linear regression modeling.

5. Intended Learning Outcomes (ILOs)

On successful completion of this course, students are expected to be able to:

No.	ILOs
1	Solve some basic problems in probability.
2	Make inferences about population by applying a range of statistical approaches, such as estimation and hypothesis testing.
3	Find a “good” regression line to describe the relationship between a response variable and an explanatory variable, with a given data set.

6. Assessment Scheme

a. Examination duration: 2 hrs for midterm exam, 3 hrs for final exam.

b. Percentage of examination.

Assessment	**Assessing Course ILOs**
10% by assignments	1, 2, 3
30% (0%, resp) by the midterm exam	1, 2, 3
60% (90%, resp) by the final exam	1, 2, 3

* For HW, no late submission will be accepted.
* No make-up midterm exam will be arranged for any reason.
* If a student misses the final exam, s/he needs to fill in a form to apply for a make-up final exam with evidence officially.

The max score from the above different schemes will be taken to determine the student's final grade.

c. The grading is assigned based on students’ performance in assessment tasks.

7. Student Learning Resources

Lecture Notes: The course notes are available on Canvas.

Textbook: "Probability and Statistics for Engineers and Scientists" (9th Edition Prentice Hall) by Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers and Keying Ye.

8. Teaching

Weekly schedule: 3 hrs for lecture and 1 hr for tutorial

9. Course Schedule

Keyword Syllabus:

- Descriptive Statistics
- Introduction to Probability Theory
- Discrete Random Variables and Discrete Probability Distributions
- Continuous Random Variables and Continuous Probability Distributions

- Point Estimation, Interval Estimation
- Hypothesis Testing
- Simple Linear Regression
- [If time permits] Selected Topics