STA0054: Reliability Theory

Course Syllabus - Spring 2024

Instructor : Kipoong Kim

Office Hours : Friday: 09:00 - 12:00 PM, and by appointment

Office : Room 411, Building 32

E-mail : kkp7700@gmail.com

Lecture Hours : Tuesday 12:00–13:15 PM, and Thursday, 13:30–14:45 PM

Prerequisite : Introduction to Statistics, (Calculus, Mathematical Statistics)

Textbook : No textbook is required in this course.

References :

- Rausand, M., & Hoyland, A. (2003). System reliability theory: models, statistical methods, and applications (Vol. 396). John Wiley & Sons.
- Larsen, R. J., & Marx, M. L. (2005). An introduction to mathematical statistics. Hoboken, NJ: Prentice Hall. (publicly available online)

Course Schedule :

Weeks	Agenda	Assignments	Remarks
Week 1	Introduction to reliability		
Week 2	Introduction to reliability	Assignment 01	
Week 3	Failure models		
Week 4	Failure models	Assignment 02	
Week 5	Relevant distributions and their properties		
Week 6	Relevant distributions and their properties	Assignment 03	
Week 7	Introduction to survival analysis		
Week 8	Midterm Exam		4/23
Week 9	Parametric models		
Week 10	Parametric models	Assignment 04	
Week 11	Nonparametric models: One sample		
Week 12	Nonparametric models: Two sample		
Week 13	Nonparametric models: Multi sample	Assignment 05	
Week 14	Nonparametric models: Regression		
Week 15	Make-up week		
Week 16	Final Exam		6/18

Exam Schedule :

- **Midterm Exam: Tuesday, April 23, 12:00 – 13:00 am**
- **Final Exam: Tuesday, June 18, 12:00 – 13:00 am**

Exam Policy :

- **All exams are open book.**
- **You must take the final exam to pass this course.**

Grading Policy :

- **Evaluation**:
  - **Attendence (10%)** : Poor attendance will result in an F grade.
  - **Homework (30%)** : **Late or Copying HW** is NOT accepted
  - **Midterm (30%)**
  - **Final (30%)**
- (Tentative) **Final Course Grade**

  A+ : less than 30%

  B+ : less than 40%

  C+ : less than 30%

  F : Total score ≤ 20 (if MAX = 100)