**Experimental Design**

Spring 2021

Credit hours: 3

Class Time: Monday, 9:00 AM – 10:15 AM; Wednesday, 10:30 –11:45 AM

Office Hour: TBA

Classroom:

INFORMATION ON COURSE INSTRUCTORS

Instructor: Keunbaik Lee, Professor of Statistics

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Important announcements, lecture notes, homework problems and solutions, references, computational codes, data sets and other information about the class are posted on the course website.

Textbook

**Required –** Montgomery. Design and Analysis of Experiments, 10th Edition*.* Wiley

**Recommended –** Kuehl, 2nd Edition. Design of Experiments: Statistical Principles of Research Design and Analysis

Prerequisites

통계학원론

COURSE OBJECTIVES

Learn how to plan, design and conduct experiments efficiently and effectively, and analyze the resulting data to obtain objective conclusions. Both design and statistical analysis issues are discussed. Students will be expected to utilize standard statistical software packages for computational purposes.

**Topics**

**1. Overview and Basic Principles**

**2. Simple Design and Analysis of Variance**

**3. Block Design, Latin Squares and Related Designs**

**4. Full Factorial Designs**

**5. 2-level Full Factorial and Fractional Factorial Designs (optional)**

**6. Designs with Random Factors, Nested Designs, and Split-plot Designs**

EVALUATION AND GRADING PROCEDURES

1. Exams (90%)

Tentative schedule: April 12 (Monday: 45%) and May 31 (Monday: 45%).

The exams will be 1.0 hour exams. No make-up exams will be given except for medical or family emergencies, and must be approved before the time of the exam. Calculator may be used for the exams.

1. Homework (5%)

Assignments are due at the start of the class period. All computer output must be edited and annotated. Solutions will be made available on the course web site.

1. Participation (5%)

POLICIES AND EXPECTATIONS

1. Students are required to attend all classes
2. No late assignments will be accepted.