

**SIE 330R: Introduction to Design of Experiments
Spring 2017**

Class Hours: Tuesdays and Thursdays 12:30PM - 1:45PM
Classroom: Modern Languages, Rm 310
Instructor: Qiang Zhou, ENGR 314, zhouq@email.arizona.edu
TA: Jiali Han, jialih@email.arizona.edu; Haomiao Yang, haomiaoyang@email.arizona.edu
Office Hour: Instructor (Tu/Tr 10:00-11:30AM)
TA (Wed 10:00-11:30AM; Thr 3:15-4:45PM @ ENGR 159)

Course Description: Design and analysis of experiments employing numerical and graphical methods. Topics include control charts, probability plots, multiple regression analysis, confidence and prediction intervals and significance tests.

Prerequisites: SIE 305. An understanding of basic statistical concepts (e.g., hypothesis testing, p-values, sampling distributions, the central limit theorem) is required prior to taking this course. Knowledge of Analysis of Variance (ANOVA) is helpful but not required.

Course objectives:

The principal objective of this course is for students to understand, recall, and apply the basic principles of designing and analyzing engineering and scientific experiments.

Textbook:

Montgomery, D. (2013), Design and Analysis of Experiments, 8th ed., John Wiley and Sons.

Attendance Policy:

Attendance is essential and expected, but not required. Some handwritten materials in class may not be available on slides / textbook.

Code of Academic Integrity:

Graded work must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See:

<http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

There is zero tolerance towards plagiarism and any act of intellectual dishonesty.

Subject to Change Statement:

Information contained in the course syllabus, may be subject to change with advance notice, as deemed appropriate by the instructor.

Assessment:

Assessment	Percentage
Midterm Exam	20%
Final Exam	40%
Homework	20%
Project	20%

Grading:

Final grades will be adjusted based on a normal curve. The lowest score to pass the course is 60/100.

Project:

Projects will be accomplished in group of 3 students. The instructor will assign a project at the start of the semester. Project requirements will be assigned and submitted in the course of the semester.

Tentative Course Schedule:

Week	Topic / Activity
Jan 12	Introduction
Jan 16~Mar 3	Review of basic statistics; Simple comparative experiments; Single factor experiments and ANOVA; Blocked designs, Latin squares; Factorial designs.
Mar 10	Midterm Exam
Mar 13~17	<i>Spring Recess</i>
Mar 20~Apr 27	2 ^k factorial designs; Blocking and confounding; Fractional factorial designs; Other special topics.
May 2	Review
May 10 (Wed)	Final Exam (1:00-3:00PM)