

SIE 536 – Experiment Design and Regression

Fall 2017

Course Description:	Statistical modeling of observational data and designs of experiment data, including linear models, regression models, and analysis of variance models.
Time and Location:	MWF 12:00-12:50pm ENGR 301
Instructor:	Qiang Zhou zhouq@email.arizona.edu
Office hour:	By appointment
Recommended reference books	(1) Applied Linear Statistical Models by Kutner, Nachtsheim, Neter, and Li, 5th edition, McGraw Hill (2) Experiments: Planning, Analysis, and Optimization, 2nd Edition, C. F. Jeff Wu, Michael S. Hamada, Wiley
Prerequisites:	SIE 530 or equivalent
Required, Elective, or Selected Elective:	Elective
Course Objectives:	The students will be able to understand and apply the following concepts and methods: basic statistical estimation and hypothesis testing; simple and multiple linear regression models and corresponding inference methods; design and analysis of experiments methods to characterize and improve systems and processes; regression methods and design of experiment methods to analyze and solve real life problems and applications.
Grading Policy:	20 % Homework; 40% Project; 40% Exams

Topics covered:

- Statistical estimation and hypothesis testing
- Regression modeling and analysis
- Analysis of Variance
- Multivariate linear regression
- Factorial designs and analysis
- Robust design and parameter design
- Random effects models
- Response surface methodology

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.

Attendance Policy:

Students are expected to attend class. If you miss class you are responsible for obtaining the class notes, assignments, and announcements. Phone usage is not allowed during the class; please put your phone into “quiet”, or “vibrate” mode prior to start of the class.

Accommodation for Students with Special Needs:

Students with disabilities or special needs for accommodations (including in class meetings and exams) are required to contact both the instructor and the S.A.L.T. Center (www.salt.arizona.edu) or the Disability Resource Center (<http://drc.arizona.edu>) as early as possible in the semester. They are also required to submit appropriate documentations to the instructor before accommodations could be offered.