SIE 330R: Introduction to Design of Experiments
Spring 2026

Class Hours:
1/14/2026 – 5/6/2026, Tuesdays and Thursdays 12:30PM - 1:45PM,
Classroom:
AME S212 at regularly scheduled class times.
Instructor:
Lance Milner, lemilner@arizona.edu , phone: 480-862-5466
TA:
Office Hour:
TA: Mohamed Ibrahim
mohamedibrahim@arizona.edu
Office Hours
Wednesday at 3:00 PM.

Course Description:

Design and analysis of experiments employing numerical and graphical methods. Topics include hypothesis testing, simple comparative tests, factorial designs, ANOVA analysis then up to Response Surface Methodology.
Prerequisites:
SIE 305 or a strong background in statistics.
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. It is designed to be a next step up from the principles and methodologies of statistics as taught in SIE 305. It will also provide a framework for engineering problem solving.
Textbook:
Montgomery, D. (2018), Design and Analysis of Experiments, 10th ed., John Wiley, and Sons. (required) You can get an electronic version of the 10th edition through D2L (Inclusive Access eTextbook).
Course Website:
Course material, announcements, grades, and other pertinent course information will be posted on the course's D2L website. Students should

regularly visit the D2L site.

Attendance Policy:

Class lectures will be recorded on D2L as Panopto videos.
Class attendance is encouraged.

Assignment Schedule:

The following is a ***tentative*** schedule for the upcoming assignments in the class. There is a possibility that based on Lecture timing or other factors the due dates may possibly be moved back by a few days.

Quizzes:

Quiz 1: Assigned Feb 10, Due Feb 14
Quiz 2: Assigned Mar 16, Due Mar 20
Quiz 3: Assigned May 8, Due May 14

Homework:

HW1: Due Jan 22
HW2: Due Feb 3
HW3: Due Feb 10
HW4: Due Feb 21
HW5: Due Feb 26
HW6: Due Mar 5
HW7: Due Mar 24
HW8: Due Apr 2
HW9: Due Apr 11
HW10: Due Apr 16

Team Paper:

Due May 6

Homework Policy:

Homework must be readable! Do not just send in numbers or charts, you must explain the homework answers.

Preferred to receive homework in Word (doc.) format with any excel or Minitab results pasted into word document. You may choose to use a pdf which is also OK. Put answers to all questions in one document NOT in separate documents.

HW will be assigned throughout the semester, usually following the completion of course chapters. All HWs should be submitted on D2L by

11:59 PM on the due date. If not preapproved by Instructor or TA there will be a 10% penalty per day for late submission.

You MUST learn to use Minitab or some other software that performs DOE calculations. Minitab is available on Apporto.

Project Policy:
There is a project due at the end of the class in which the students will conduct an experiment as a team and report on the results.
Members in the same team will receive the same project score. The penalty for late submission is the same as Homework.

Grading:
Assessment Percentage
Quizzes: 40%
Homework 40%
Project 20%
Total 100%
The total score is 100. The lowest score to pass the course is 60/100.
All exams (Quizzes) are on D2L.

Disability Resource Center (DRC):
Accessibility and Accommodations: At the University of Arizona, we strive to make learning experiences as
accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the
Disability Resource Center (520-621-3268, https://drc.arizona.edu) to establish reasonable accommodations.

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, except grading policy, may be

subject to change with advance notice, as deemed appropriate by the instructor.