

IE 8090: Model Systems under Risk  
Freeman Hall 78

Fall 2023  
8:00 am - 8:50 am MWF

#### Instructor Information

|                   |            |              |                  |
|-------------------|------------|--------------|------------------|
| <b>Instructor</b> | Dr. Dan Li | <b>Email</b> | dli4@clemson.edu |
|-------------------|------------|--------------|------------------|

**Office Hour Time: TBD, Location: Freeman 269**

#### TA Information

|           |                |              |                     |
|-----------|----------------|--------------|---------------------|
| <b>TA</b> | Fatemeh Mahroo | <b>Email</b> | fmahroo@clemson.edu |
|-----------|----------------|--------------|---------------------|

**TA Office Hour Time: TBD, Location: TBD**

#### Course Description

Probabilistic modeling of engineering systems and fundamentals of statistical analysis and inference.

#### Topics to be covered

Probability and Expectation, Discrete and Continuous Random Variables, Joint Distributions, Estimation Methods, Confidence Intervals, Hypothesis Testing, Statistical Inference, and Regression.

#### Course Objective

To enhance student understanding of the role of uncertainty in engineering analysis; To learn how to design, model and analyze systems subject to risk and uncertainty; To understand the fundamentals of statistical analysis and inference.

#### Required Course Text

Douglas C. Montgomery, George C. Runger, Applied Statistics and Probability for Engineers, 7th Edition  
(*This is what I'm using. You can get a different edition if you want.*)

#### Grade Determination

|               |     |
|---------------|-----|
| Homework      | 20% |
| Midterm Exam1 | 25% |
| Midterm Exam2 | 25% |
| Final Exam    | 30% |

I do not exempt any students from the final exam. The following percentages will guarantee the corresponding letter grade:

|     |   |
|-----|---|
| 90% | A |
| 80% | B |
| 70% | C |
| 55% | D |

#### Course Policies

##### General

- Exams are closed book, closed notes.
- **No makeup exams will be given.**

##### Grading

- Course letter grades will be based on a straight scale.

- Grades will be maintained and posted on Canvas. Students are responsible for tracking their progress.
- Request for regrading of any exams must be submitted within 1 week of receiving your graded exam.

#### **Assignments**

- Students are expected to work independently. Offering and accepting solutions from others is an act of plagiarism, which is a serious offense, and all involved parties will be penalized according to the Academic Honesty Policy.
- No late assignments will be accepted under any circumstances.

#### **Attendance and Absences**

- Attendance is not required.
- Students are responsible for all missed work, regardless of the reason for absence.

#### **Academic Integrity**

I understand that students may choose to study with other students. It must be understood that the work submitted by each student for homework and exams represents the efforts and work of that student and that the work submitted by groups of students for group assignments represents the efforts and work of the students in that group only. Group assignments will be explicitly identified as such. The provost has asked that every course syllabus include the following statement:

As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.

#### **Students with Disabilities**

Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the professor know and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing [studentaccess@lists.clemson.edu](mailto:studentaccess@lists.clemson.edu), or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged – drop-ins will be seen if at all possible, but there could be a significant wait due to scheduled appointments. Students who receive Academic Access Letters are strongly encouraged to request, obtain, and present these to their professors as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester. You can access further information here: <http://www.clemson.edu/campus-life/campus-services/sds/>.

#### **Clemson University Title IX**

Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran's status, genetic information or protected activity (e.g., opposition to prohibited discrimination or participation in any complaint process, etc.) in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at <http://www.clemson.edu/campus-life/campus-services/access/title-ix/>. Mr. Jerry Knighton is the Clemson University Title IX Coordinator. He also is the Director of Access and Equity. His office is located at 111 Holtzendorff Hall, 864.656.3181 (voice) or 864.565.0899 (TDD).