

IE 4610 – Quality Engineering Fall 2023 Course Syllabus

Instructor:

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TA:

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Office Hours:

12:15 -1:15 pm Wednesdays in person or via zoom by appointment at least 48 hrs beforehand

Official Course Description:

Design aspects of quality and the engineer's role in problems of quality in production systems.

CRN and Section #:

CRN: 80660 Section #: 001

Class Meeting Times:

MWF 1:25-2:15pm

Course Prerequisites:

IE 3610: Industrial Applications of Probability and Statistics II

Required Textbook:

Managing, Controlling, and Improving Quality by Montgomery, Jennings, and Pfund, Wiley.
ISBN: 978-0471697916.

Introduction to Statistical Quality Control by Douglas C. Montgomery. Wiley. ISBN: 978-0470169926.

A First Course in Quality Engineering by K.S. Krishnamoorhi, V. Ram Krishnamoorthi, and A. Pennathur. CRC Press, 2018. 3rd ed. ISBN: 978-1498764209. Accessible via: <https://rb.gy/710yyq>

The Quality Toolbox by Nacy R. Tague, ASQ Quality Press. 2nd ed. ISBN: 978-0873896399.
Available via: <https://rb.gy/qqstai>

Suggested Website: Please bookmark the [Minitab Support site](#), we will use it often.

Important Dates:

- Last day to add a class or declare Audit: Tuesday, Aug 29

- Last day to drop without a W grade: Wednesday, Sep 6
- Last day to drop without final grades: Wednesday, Nov 1
- Labor day Holiday: Monday, Sep 4
- Fall Break: Monday, Oct 16 – Tuesday, Oct 17
- Thanksgiving Break: Wednesday, Nov 22- Friday, Nov 24

We will use Canvas announcements and e-mail to communicate important dates and deadlines, as well as post and grade homework assignments. Please make sure you are receiving important class e-mails via the course's distribution list through Canvas.

Course Objective:

The primary objective of this course is for students to learn how to apply the most common experimental design methods and statistical process control tools used to improve the quality of product and enhance the performance of processes.

Grading:

The course grade will be determined as follows:

Homework	40%
Midterm Exam	25%
Final Project	25%
Participation	10%

Homework: You are allowed to work in **groups of at most 3 people** for regular homework assignments, unless explicitly indicated otherwise. All homework assignments will be turned in digitally on Canvas. Only one of the members should submit your homework and the list of names in the group. If your name appears twice, the lower score will be used.

Late homework will NOT be accepted without prior approval by the instructor before the due date.

The details for the final project and exams will be announced during the semester.

In-class participation assignments, quizzes and exams will not be permitted to be submitted after the due date without prior approval of the instructor or a university approved absence.

Grading scale will be [90-100] = A, [80-90) = B, [70-80) = C, [60-70) = D, and <60 = F. If you score in the appropriate range, you are guaranteed at least that grade. There is no guarantee of rounding or curving final grades.

Software Requirements:

Minitab Statistical Software is a comprehensive statistical and graphical analysis software package. Students may download it from CCIT's repository. Please become acquainted with it as some homework assignments and in class activities will require the use of it. If you do not have access to a personal laptop, please see the instructor. Access to a laptop and software is a requirement of this class.

Re-Grading and Make-Up Policies:

Once a graded item has been returned, each student has 72 hours to challenge the grade. Grade challenges must be typed and include the problem in question, the original response, and a description

of the grading error, all attached to the graded item. In addition, please give your name and e-mail address. All challenges will be responded to within 72 hours of receipt. Homework will typically be returned within 2 class periods, exams within 3. The first step in this process is to begin a dialogue with your instructor, email is suggested.

Please do not ask for “extra work” or “extra credit,” as grades will stand as entered once the challenge period has expired. In addition, no final course grades will be changed unless a numerical error is made during grade computation.

Make-up exams will be given only if you have an official or a pre-approved reason or medical emergency. If you have a personal medical emergency and miss an exam, in-class exercise, or assignment due date, you must submit valid proof.

Email:

When emailing the instructor, please start the subject with “IE 4610:”. Be sure to use your Clemson University account. You are practicing to become a professional, please demonstrate this with your digital communication. You are responsible for all e-mail messages sent by the instructor and the teaching assistant. Public messages intended for the entire class are sent automatically to campus accounts via Canvas. If the student elects to forward campus mail to an off-campus account, the student remains responsible for these messages regardless of whether or not they are successfully delivered.

Cell Phones:

It would be nice to tell you that you shouldn’t use your phone while you are working on this class’s materials, but you’re working on your own, so you’ll do what you want. Recent research suggests that you are not as good at multi-tasking as you think you are, and recommendation is that you set an alarm for 40 min and work without distraction, then give yourself a break. Repeat as necessary.

Attendance:

Attendance at lectures is required for students without university approval. The in-class assignments will be detailed within the lectures, and instructions for submission to be given therein. This is a means of practicing the material and ensuring students are engaging with the material. Each student is responsible for all information distributed and/or presented during lecture periods, and in-class assignments cannot be made up.

The Notification of Absence module in Canvas allows students to quickly notify instructors (via an email) of an absence from class and provides for the following categories: court attendance, death of immediate family member, illness, illness of family member, injury, military duty, religious observance, scheduled surgery, university function, unscheduled hospitalization, other anticipated absence, or other unanticipated absence. The notification form requires a brief explanation, dates and times. Based on the dates and times indicated, instructors are automatically selected, but students may decide which instructors will receive the notification. **This does not serve as an “excuse” from class.** It is a request for an excused absence and students are encouraged to discuss the absence with instructors, as the instructor is the only person who can excuse an absence. If students are unable to report the absence by computer, they may reach the Office of Advocacy and Success via 864.656.0935. Students with excessive absences who need academic or medical assistance can also contact the Office of Advocacy and Success.

Inclement Weather:

Any exam that was scheduled at the time of a class cancellation due to inclement weather, University power outage, etc. will be made up at a future date. This also applies to students who are living off-campus or taking an all-online schedule. Please contact the instructor if this is your situation, particularly if you are not located in Clemson for the semester. Any extension or postponement of assignments or exams must be granted by the instructor via email or Canvas within 24 hours of the weather-related cancellation.

Academic Integrity:

“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.”

“When, in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member shall make a formal written charge of academic dishonesty, including a description of the misconduct, to the Associate Dean for Curriculum in the Office of Undergraduate Studies. At the same time, the faculty member may, but is not required to, inform each involved student privately of the nature of the alleged charge.”

Students may not submit any work that has been turned in for credit for a previous course.

Disability Access Statement from the Office of Student Disability Services:

“Students with disabilities who need accommodations should make an appointment with Dr. Arlene Stewart, Director of Disability Services, to discuss specific needs within the first month of classes. Students should present a Faculty Accommodation Letter from Student Disability Services when they meet with instructors. Student Disability Services is located in Suite 239 Academic Success Building (656-6848; sds-1@clemson.edu). Please be aware that accommodations are not retroactive and new Faculty Accommodation Letters must be presented each semester.”

Title IX Statement:

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).

Copyright Statement:

Students should refer to the Use of Copyrighted Materials and “Fair Use Guidelines” policy on the Clemson University website: <http://www.clemson.edu/administration/ogc/policies/copyright.html>

Emergencies:

Emergency procedures have been posted in all buildings. Students are reminded to review these procedures for their own safety.

Personal Situations:

Any student who has difficulty affording groceries or accessing sufficient food to eat every day or who lacks a safe and stable place to live is urged to contact the Dean of Students (864-656-2162) for support. The Clemson Paw Pantry (@CUpawpantry) is also a resource for food and hygienic supplies. **Furthermore, please notify the professor if you are comfortable in doing so.** This will enable them to provide any resources that they may possess. You should also be aware, that as an employee of Clemson University, I am a mandated reporter, which means that if a student discloses an instance of sexual assault or harassment to me, I am required to report it to the university. If you experience or have experienced sexual harassment or assault, and you want to discuss with someone who is allowed to keep it confidential, you can contact the RAINN hotline at 1-800-656-4673, or chat. You can also contact counselors at CAPS (864-656-2451), at Redfern student health center, who are not mandated reporters for instances of sexual assault or harassment. If something or some circumstance is hindering your success in this course, please contact your instructor – they are exceptionally invested in your success.