

Technical Elective: Quality Management & Six Sigma Course Syllabus: Fall 2024

Class:

Time: Wednesday 1:50 PM -4:25 PM

Location: 3-104

Liberal Art Building, Jiang'an Campus

Instructor:

Rong Yin, Ph.D.

Email: rong.yin@scupi.cn (Email is the best way to reach me)

Office: North Zone 416

SCUPI new Building, Jiang'an South Campus

TA:

Ms. Shuhan Li (李姝晗)

Email: 2021141520177@stu.scu.edu.cn

Office hours:

Instructor:

- Right after each class in the classroom or online meeting room.
- Thursday 1:30 PM - 4:30 PM

TA:

- TBD and by appointment
- Online via QQ Group or Tencent Meeting

Credit Hours: 3

Notes:

- This syllabus is subject to change. Please follow updates announced during class and posted on Blackboard website. Lecture slides, reading assignments, course grades and announcements will also be provided through Blackboard.
- When emailing the instructor, please include “Six Sigma” in the subject field of your message. Please use your university email account (student_ID_number@stu.scu.edu.cn), since emails from other accounts might be stopped by the SCU spam filter. Thanks!

Website:

- Blackboard
- Tencent Meeting for online lectures if necessary

Course Description:

This course is designed to introduce the fundamental principles of quality management; technical tools to support design, control, and improvement of quality; and organizational quality and its implementation. Students will gain knowledge of key concepts of quality and quality management as well as practical applications of the technical tools to achieve quality management goals such as applying Six Sigma in process improvement.

Learning outcomes of the course

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- An ability to communicate effectively with a range of audiences.
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Course Objectives:

- To introduce the fundamental concepts of quality and quality management.
- To provide tools and technique to enhance quality design, quality measurement and control, and quality improvement.
- To introduce statistical methods for quality management
- To provide practical experience in applying Six Sigma in quality management.
- To build students' critical thinking skills and problem-solving abilities in quality management.

Textbook:

James R. Evans, William M. Lindsay. (2019). *Managing for Quality and Performance Excellence* (11th ed.)

Course Prerequisites:

NA

Assessments:

The course grade will be determined as follows:

- Homework: 15%
- Project and presentation: 20%
- Midterm exam: 30%
- Final Exam: 35%

Grades:

Letter grades will be given as follows:

90.00 – 100.00 A	85.00 – 89.99 A-	80.00 – 84.99 B+	76.00 – 79.99 B	73.00 – 75.99 B-
70.00 – 72.99 C+	66.00 – 69.99 C	63.00 – 65.99 C-	60.00 – 62.99 D	0.00 – 59.99 F

Homework:

Homework will be assigned regularly and are due at the start of the next class. All work will be submitted electronically through the Blackboard. Late submission will **NOT** be accepted. Students are responsible for correctly submitting the homework through Blackboard. Typically, you will be asked to write a **QQT**, including a **Q**uestion, a **Q**otation, and **T**wo **T**alking points based on the assigned reading materials. More details about the QQT will be covered in class.

If you have any problems about your grades, please discuss the issues with me within **ONE week** from the grades are given.

Projects and Presentations:

Students will form groups to work on projects and presentations. For each project, each group is required to analyze some engineering problems and submit a report. The project report should properly summarize and discuss the present problem, and should provide your insights on that problem.

Beginning date and Due date of projects will be announced shortly during our

following classes. The project provides you an opportunity to apply the methodologies and skills gained in this course to analyze practical quality management problems. Each group member is required to actively participate and contribute equally to the projects. All groups will submit their final project reports and present their projects at the end of this semester.

Exams:

There will be one midterm exam at the middle of this semester and one final exam at the end of this semester. The exams will be **closed book and closed notes**. If you miss an exam without prior notification, you will receive a score of “**ZERO**” for that exam except for medical emergency (with proof). More details on exams will be presented later in this semester.

Class Policy:

Class attendance is expected and important for your success in this course. Not keeping up with the course will hurt your grade in a general way. Valid excuses for absence may be accepted **before** class. Important dates and plans will be announced during class. Each student is responsible for all assigned work in class and for maintaining awareness of all announcements posted to Blackboard and all e-mails sent to his or her SCU e-mail address. It is the students’ responsibility to obtain all class materials (e.g., handouts). **Video/audio recording is strictly prohibited** during class to maintain a free discussion atmosphere. Please silence your cell phones to prevent disturbing your classmates in class.

You are free in this course to discuss any aspect of the homework with anyone, such as your classmates and your friends, but the written responses must be your own. **Please be aware that all your submissions will go through tools for plagiarism issues.** Academic dishonesty will not be tolerated.

Academic honesty:

Students are responsible for mastering all course material, including both graded and ungraded assignments posted on Blackboard. Work submitted for grading—such as homework, lab reports, design projects, and tests—should represent your individual effort. Studying and collaborating with peers on assignments outside of class is not only acceptable but also highly encouraged. Forming study groups can provide significant benefits, and you are encouraged to participate in them.

However, submitting work copied from others is considered academic misconduct. This includes plagiarism of ideas or work and the unauthorized exchange of information during

examinations. All instances of academic misconduct will be addressed strictly and may result in a failing grade for the course. For full details on your rights and responsibilities, refer to the school's policy and the student handbook.

Violations include, but are not limited to:

- Cheating on an examination, such as copying from another’s paper, using unauthorized notes or calculators, or giving or receiving unauthorized assistance, including trading examinations, whispering answers, passing notes, or using electronic devices to transmit or receive information (e.g., copying another student’s Word, PowerPoint, or Excel assignments).
- Violation of proctor guidelines and compromising the “chain of custody” by copying or sharing exam questions before or after an exam is considered cheating and may result in failure of the course.

Plagiarism:

- Plagiarism involves using someone else's work without proper attribution. This includes using ideas, phrases, papers, laboratory reports, computer programs, or data—whether copied verbatim or paraphrased—that you did not originate. Sources can include published works such as books, movies, websites, and unpublished works like other students' papers or material from research services. In short, presenting someone else's work as your own is academically dishonest. To avoid plagiarism, clearly indicate the source of any major or unique idea or wording that you did not create, either through footnotes or within the text itself. Sources must always be cited, whether the material is quoted directly or paraphrased.

Unauthorized Collaboration:

Unauthorized collaboration involves working with or receiving help from others on graded assignments without the specific approval of the instructor. If unsure, seek permission from the instructor before collaborating. Students are encouraged to learn from one another: form study groups and discuss assignments. However, each assignment must be individual work unless specifically stated and submitted as a group assignment.

- Copying another student's assignment and submitting it as your own is plagiarism.
- You are encouraged to discuss your assignments with one another, but all assignments must be completed individually unless explicitly designated as a “team” assignment.

Tentative Course Topics

No.	Topics	Chapters in Textbook
1	Introduction to Quality	Chapters 1
2	Foundations of Quality Management	Chapters 2
3	Customer Focus	Chapter 3
4	Workforce Focus	Chapter 4
5	Process Focus	Chapter 5
6	Statistical Methods in Quality Management	Chapter 6
7	Design for Quality	Chapter 7

8	Measuring and Controlling Quality	Chapter 8
9	Process Improvement and Six Sigma	Chapter 9
10	Brief Introduction to Quality Management Systems and Performance Excellence	Chapter 10-14