



## Syllabus: EIN 4221 – Quality Engineering

### Instructor Information:

- **Instructor:** Dr. Thomas Jones
- **Office Location:** BARC-1181
- **Office Hours:** MWF 2:00 PM – 3:00 PM or by appointment
- **Email address:** [ThomasJones@floridapoly.edu](mailto:ThomasJones@floridapoly.edu)

### Course Information:

- **Course Number and Title:** EIN 4221 – Quality Engineering
- **Credit Hours:** 3
- **Meeting Time:** MWF 11:00 AM – 11:50 AM
- **Meeting Location:** BARC – 1158
- **Academic Term:** Spring 2025

### Prerequisites:

STA 3032 – Probability and Statistics – OR – Permission from the department chair

### Required Texts and Materials:

- **Textbook:** A First Course in Quality Engineering
- **Print ISBN:** 978-1498764209
- **Equipment and Material:** Canvas, Microsoft Excel, Minitab, and Florida Poly Email.

### Course Delivery and Course Description:

- **Delivery Mode:** This three-credit course uses a face-to-face format and will meet for 150 minutes per week (2 hours and 30 minutes), with the remainder of the work being done outside of the classroom.
- **Course Website:** Canvas course management system.
  - **Official Catalog Course Description:** This course covers quality control and improvement methodologies for products and service operations. Topics include statistical quality control, failure modes effects analysis, control plan development and administration, CAPA and RCCA problem solving methodologies, and quality assurance vs quality control methodologies.
- **Gordon Rule (6A-10.030):** No

### Tentative Course Schedule:

Schedule is flexible and subject to adjustment

Week	Date	Day	Topics to Cover
1	1/12/2026	Monday	Introduction to Quality
	1/14/2026	Wednesday	
	1/16/2026	Friday	
2	1/19/2026	Monday	MLK jr day no class
	1/21/2026	Wednesday	New Product Introduction / Product Lifecycle
	1/23/2026	Friday	
3	1/26/2026	Monday	Product and Process design for quality
	1/28/2026	Wednesday	
	1/30/2026	Friday	
4	2/2/2026	Monday	

	2/4/2026	Wednesday	Statistical Applications
	2/6/2026	Friday	
5	2/9/2026	Monday	Measurement
	2/11/2026	Wednesday	
	2/13/2026	Friday	Control Charting, Process Capability, ANOVA, DoE
	2/16/2026	Monday	
6	2/18/2026	Wednesday	
	2/20/2026	Friday	
	2/23/2026	Monday	
7	2/25/2026	Wednesday	
	2/27/2026	Friday	Controlling Supplier Quality
8	3/2/2026	Monday	Project Review and Exam 1
	3/4/2026	Wednesday	
	3/6/2026	Friday	
9	3/9/2026	Monday	Quality Failures / Root Cause Analysis
	3/11/2026	Wednesday	
	3/13/2026	Friday	
10	3/16/2026	Monday	Spring Break
	3/18/2026	Wednesday	
	3/20/2026	Friday	
11	3/23/2026	Monday	Quality Management / Supplier Quality Management
	3/25/2026	Wednesday	
	3/27/2026	Friday	
12	3/30/2026	Monday	Quality Improvement and Problem Solving
	4/1/2026	Wednesday	
	4/3/2026	Friday	
13	4/6/2026	Monday	Quality Management Systems
	4/8/2026	Wednesday	
	4/10/2026	Friday	
14	4/13/2026	Monday	Six Sigma, Quality Cultures, TQM
	4/15/2026	Wednesday	
	4/17/2026	Friday	
15	4/20/2026	Monday	Project Presentations and Final Exam Review
	4/22/2026	Wednesday	
	4/24/2026	Friday	
16	4/27/2026	Monday	Reading day
	4/29/2026	Wednesday	
	5/1/2026	Friday	
17	5/4/2026	Monday	Finals week
	5/6/2026	Wednesday	
	5/8/2026	Friday	

### Course Grade Breakdown:

Activity	Weight
Attendance and In Class Participation	10%
Homework	25%
Exam 1	15%
Exam 2	15%
Project	35%

### Grading Scale:

Grade	Percentage
A	100-93
A-	92-90
B+	89-86
B	85-83
B-	82-80
C+	79-76
C	75-73
C-	72-70
D	69-60
F	0-59

### Attendance and Class Participation:

Attendance and punctuality are key skills for career success, in the event that a student is aware that they will miss class in advance, up to three absences will be approved with prior written communication to the instructor. Attendance without active participation is not conducive to a professional environment, nor to retention of learned material. Attendance and Participation will be graded based on being present and active in in class discussion and activity.

### Homework and Assignments:

Homework and assignments are expected to be completed by the calendar due date. Homework and assignments will be submitted through the Canvas system with submissions closing at 11:59 PM on the scheduled due date. The instructor may choose to drop a low assignment score at their discretion. Assignments may include in class quizzes, discussions, or other participation based activities (which may also be used to account for daily attendance).

### Course Project:

The course project will require principles learned from the class to develop a quality control plan. The goal of the project is to reflect a real world engineering project that students will encounter in their careers. The project will be completed in groups which will be formed in the first week of class. A project rubric will be provided to the students after teams have been formed. Project grades will include presentation, report writing, and peer evaluation and will be reflective of real world project expectations.

### Exams:

Exams are to be completed during class. Each exam will cover chapter materials learned since the prior exam. Exams may be open book or open note at the discretion of the instructor.

### Late Work/Make-up Work/Extra Credit:

Assignments are due at 11:59 PM on the scheduled due dates through the Canvas system. The instructor reserves the right to offer make-up work or extra credit at their discretion. In the event that a student knows they will miss a due date or an exam it is expected that the student will make their best effort to communicate with the instructor in advance.

### Course Objectives and Outcomes:

#### Course Learning Outcomes (ABET Outcomes):

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. 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
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. 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
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Student Outcome	ABET Course Learning Outcome
Students will demonstrate an ability to articulate real world problems into correct statistical frameworks and derive meaningful conclusions from the mathematical results	1, 6
Students will present complex quality engineering topics effectively	3
Students will demonstrate an ability to facilitate a complex result from a group setting	3
Students will demonstrate an understanding of the risks and ethical challenges associated with the quality function	4
Students will identify appropriate data to collect and analyze to apply to real engineering problems	6

### Professionalism, Ethics, and Respect:

The goal in this course is to learn how to apply the principles of Engineering Economics effectively. Achieving this goal goes beyond technical skills and knowledge, the application of professional skills requires students to become successful participants in the engineering workforce. Every day engineers make decisions that impact people's lives, and this career comes with an expectation of professionalism, ethics, and respect. Students are expected to develop these habits within the classroom. The classroom baseline includes working with academic integrity, respectful communication, and showing up and participating in good faith. The instructor may communicate and set expectations for a professional, ethical, respectful atmosphere should the need arise.

### Other Expectations:

#### *I expect you to*

- Maintain appropriate attendance
- Engage in the classroom, including being attentive and present
- Respect your peers
- Ask questions, engage in discussion, and communicate if there are issues
- Study outside of class while engaging in independent learning
- Take notes during lectures, as slides and materials may not capture everything

### ***You can expect me to***

- Show up on time and ready to teach
- Be available to respond to questions, and provide office hours
- Communicate clearly any changes to the syllabus or course expectations
- Be transparent in what it takes to succeed in this course
- Provide constructive feedback to help you develop your engineering and academic skills
- Be receptive to challenges you are facing
  - Be as flexible as possible if you communicate challenges early and transparently
- Provide grades in a timely manner
- Communicate openly and transparently if serious circumstances prevent me from meeting these expectations

## **University Policies**

### **Reasonable Accommodations**

The University is committed to ensuring equal access to all educational opportunities. The Office of Disability Services (ODS), facilitates reasonable accommodations for students with disabilities and documented eligibility. It is the student's responsibility to self-identify as a student with disabilities and register with ODS to request accommodations. If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course through the [ODS student portal](#), and communicate with your instructor about your approved accommodations as soon as possible. Arrangements for testing accommodations must be made in advance. Accommodations are not retroactive. If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible: [DisabilityServices@floridapoly.edu](mailto:DisabilityServices@floridapoly.edu); (863) 874-8770; [www.floridapoly.edu/disability](http://www.floridapoly.edu/disability).

### **Accommodations for Religious Observances, Practices and Beliefs**

The University will reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. (See [University Policy](#).)

### **Title IX**

Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. Resources are available if you or someone you know needs assistance. Any faculty or staff member you speak to is required to report the incident to the Title IX Coordinator. Please know, however, that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University [Ombuds Office](#), BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at [Peace River Center](#), 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment. The Title IX Coordinator is available for any questions to discuss resources and options available.

### **Academic Integrity**

Violations of [academic integrity regulation](#) include actions such as cheating, plagiarism, use of unauthorized resources (including but not limited to use of Artificial Intelligence tools), illegal use of intellectual property, and inappropriately aiding other students. Such actions undermine the central mission of the university and negatively impact the value of your Florida Poly degree. Suspected violations will be fully investigated, possibly resulting in sanctions up to and including expulsion from the university.

### **Recording Lectures**

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. Recordings may not be used as a substitute for class participation or class attendance. Recordings may not be published or shared in any way, either intentionally or accidentally, without the written consent of the faculty member. Failure to adhere to these requirements is a violation of state law (subject to civil penalty) and the student code of conduct (subject to disciplinary action). *Recording class activities including, but not limited to, lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers is **prohibited**.*

## **Academic Support Resources**

- **Library:** Students can access the Florida Polytechnic University Library through the University website and [Canvas](#), on and off campus. Students may direct questions to [library@floridapoly.edu](mailto:library@floridapoly.edu).
- **Tutoring and Learning Center:** The Tutoring and Learning Center (The TLC) provides tutoring to all Florida Poly students who may need additional academic support. The TLC is staffed by students who have excelled in the courses they tutor. They offer support by reviewing concepts and materials from class, clarifying points of confusion and providing assistance with learning strategies. While the focus of TLC is to provide support to students in freshman-level courses, upper-level courses are also tutored at the Center. The TLC is located in the IST Commons (second floor).
  - **Knack Tutoring:** Students looking for additional assistance outside of the classroom are advised to consider working with a peer tutor through Knack. Florida Polytechnic University has partnered with Knack to provide students with access to verified peer tutors who have previously ached this course. To view available tutors, visit [floridapoly.joinknack.com](http://floridapoly.joinknack.com) and sign in with your student account.
- **Academic Success Coaches:** All students at Florida Poly are assigned an Academic Success Coach. Your Academic Success Coach can assist you with academic success strategies. Please visit the Student Success Center on the second floor of the IST building to meet with an Academic Success Coach.
- **Writing Center:** Located on the second floor of the IST (2059/2061), the Writing Center helps students to develop their writing and presentation skills. Consultations are available in person and virtually. For more detail, visit [floridapoly.edu/writing center](http://floridapoly.edu/writing center).