



Northeastern University

College of Engineering

INFO 6255 Software Quality Control and Management

Course Information

Course Title: Software Quality Control and Management

Course Number: INFO 6255

Term and Year: Spring 2024

Credit Hour: 4

Course Format: LiveCast

Instructor Information

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Course Prerequisites

Graduate level INFO 5100 Minimum Grade of C- or Graduate level CSYE 6200 Minimum Grade of C-

Course Description

Examines techniques for the management and evolution of software systems. Topics include managing software as an asset; life cycle development and rapid development technologies; maintainability; quality assurance of software systems including testing strategies and problem analysis; software risk analysis; analysis of software project failures; process models, such as CMM and ISO 9001; configuration management; and the impact of new development technologies on software management.

Standard Learning Outcomes

Learning outcomes common to all College of Engineering Graduate programs:

1. *An ability to identify, formulate, and solve complex engineering problems.*
2. *An ability to explain and apply engineering design principles, as appropriate to the program's educational objectives.*
3. *An ability to produce solutions that meet specified end-user needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.*

The Information Systems Program accepts students of different engineering backgrounds with minimum programming skills and produces first-class Information Systems engineers that operate at the intersection of real-world complexity, software development, and IT management. Graduating students will be able to construct end-to-end advanced software applications that meet business needs.

Specific Learning Outcomes for the Information Systems Program:

1. *Create a strong technical foundation through diverse, high-level courses*
2. *Built crucial interpersonal skills needed to succeed in any industry*
3. *Foster a deep level of applied learning through project-based case studies*

Course Outcomes and Assessment Standards

- Understanding Programming languages
- Web Technology Architecture
- JavaScripting/VB Scripting
- Data Bases (SQL Server and Oracle)
- Familiarity with different Operating Systems
- Fluency in Word/Excel/PowerPoint/Vision

Grading Scale

Here's the scaling of the final grading for the course.

95-100% A	87-89.9% B+	77-79.9% C+	69.9% or below F
	84-86.9% B	74-76.9% C	
90-94.9% A-	80-83.9%B-	70-73.9% C-	

Attendance/Late Work Policy

Attendance Policy

Students are expected to complete course readings, participate in class discussions or other learning activities during the unit, and complete written assignments for each unit during the time of that unit. It is understood that there might be one week when active participation in ongoing class conversations and learning activities might be delayed. Beyond one week's time, if there is an absence or lateness in participation (1) faculty must be notified in advance; (2) grades will be adjusted accordingly.

Late Work Policy

Students must submit assignments by the deadline in the time zone noted in the syllabus. Students must communicate with the faculty prior to the deadline if they anticipate work will be submitted late. Work submitted late without prior communication with faculty will not be graded.

Assessment:

The final grading is done per the weights listed below.

- Class Participation (10%)
- Weekly Quizzes (20%)
 - Timely Submission
 - Completeness & Correctness
- UFT and Selenium Automation Assignments (25%)
 - Group Presentation of the scripts in the class
- Research Assignments (15%)
 - Group Presentations in the class
- Final Project – Project (30%)
 - Test Condition Matrix/Test Scenarios/Traceability Matrix

- Test Plan
- Group Presentations

Class Rules:

- Show up to the class on time. Be punctual.
- Don't miss any classes.
- Don't miss any quizzes. There will be a total of 10 quizzes for the semester.
- All students will be in groups of 4 or 5. The groups have to work well together to complete the Research projects (15%), Automation Assignments (25%), and the final project (30%).
- Participate fully in the class.
- Class attendance is mandatory; class participation is worth 10% of your grade

INFO6255 Course Schedule

Weeks	Topics	Tools
Week 1	Introductions and the HouseKeeping Rules	
Week 2	Quality Management; SDLC phases and the QA Life Cycle	
Week 3	Anatomy of a Test Plan/Strategy Document	Word/Excel
Week 4	Analysis of Functional Requirements/Designing a Test Condition Matrix/Test Cases & Traceability Matrix	Word/Excel
Week 5	Waterfall & Agile (SAFe Agile) Methodologies Overview. DevOps Introduction	
Week 6	QA Automation Testing & Tools; The use of AI in testing Change and Release Management Processes	MF QC/ALM
Week 7	Automation Tool Assignment 1: Micro Focus UFT Project - Group Presentations	MF UFT & Selenium
Week 8	Career Management; IT Leadership, QA Job Positions & Job Interviewing Questions/Answers.	
Week 9	Optimize Quality for Business Outcome Assignment – Group Presentation	
Week 10	Intro to Back End/Database and API Testing, AI & AI use in Automation testing.	
Week 11	Test Management tools Introductions: Micro Focus ALM; Jira & TestRail overview, & Cloud Computing.	Jira, TestRail, Micro Focus ALM
Week 12	Cross Browser and Mobile Testing; Intro to Monolithic vs. Microservices Architecture Testing. Cloud Computing Testing.	
Week 13	Automation Tool Assignment 2: Selenium Project - Group Presentation	Selenium, IDE, POM, XML
Week 14	Performance & Load Testing introduction using Micro Focus Performance Center; Testing Metrics & Shift Left Testing	MF Performance Center (LRE)
Week 15	Application Security Testing and Cybersecurity	
Week 16	Final Project Presentation	Excel/PowerPoint

End-of-Course Evaluation Surveys

Your feedback regarding your educational experience in this class is very important to the College of Professional Studies. Your comments will make a difference in the future planning and presentation of our curriculum.

At the end of this course, please take the time to complete the evaluation survey at

<https://neu.evaluationkit.com>. Your survey responses are **completely anonymous and confidential**. For courses 6 weeks in length or shorter, surveys will be open one week before the end of the courses; for courses greater than 6 weeks in length, surveys will be open for two weeks. An email will be sent to your HuskyMail account notifying you when surveys are available.

Academic Integrity

A commitment to the principles of academic integrity is essential to the mission of Northeastern University. The promotion of independent and original scholarship ensures that students derive the most from their educational experience and their pursuit of knowledge. Academic dishonesty violates the most fundamental values of an intellectual community and undermines the achievements of the entire University.

As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, examinations of whatever kind, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Students are responsible for learning the conventions of documentation and acknowledgment of sources in their fields. Northeastern University expects students to complete all examinations, tests, papers, creative projects, and assignments of any kind according to the highest ethical standards, as set forth either explicitly or implicitly in this Code or by the direction of instructors.

Go to <http://www.northeastern.edu/osccr/academic-integrity-policy/> to access the full academic integrity policy.

Student Accommodations

Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability.

For more information, visit <http://www.northeastern.edu/drc/getting-started-with-the-drc/>.

Library Services

The Northeastern University Library is the hub of campus intellectual life. Resources include over 900,000 print volumes, 206,500 e-books, and 70,225 electronic journals.

For more information and Education specific resources, visit <http://subjectguides.lib.neu.edu/edresearch>.

24/7 Canvas Technical Help

For immediate technical support for Canvas, call 617-373-4357 or email help@northeastern.edu

myNortheastern, e-mail, and basic technical support

Visit the [Information Technology Services \(ITS\) Support Portal](#)

Email: help@northeastern.edu

ITS Customer Service Desk: 617-373-4357

Diversity and Inclusion

Northeastern University is committed to equal opportunity, affirmative action, diversity, and social justice while building a climate of inclusion on and beyond campus. In the classroom, members of the University community work to cultivate an inclusive environment that denounces discrimination through innovation, collaboration, and an awareness of global perspectives on social justice.

Please visit <http://www.northeastern.edu/oidi/> for complete information on Diversity and Inclusion

TITLE IX

Title IX of the Education Amendments of 1972 protects individuals from sex or gender-based discrimination, including discrimination based on gender identity, in educational programs and activities that receive federal financial assistance.

Northeastern's Title IX Policy prohibits Prohibited Offenses, which are defined as sexual harassment, sexual assault, relationship or domestic violence, and stalking. The Title IX Policy applies to the entire community, including male, female, and transgender students, faculty, and staff.

In case of an emergency, please call 911.

Please visit www.northeastern.edu/titleix for a complete list of reports.

More Information will be supplied upon the start of the academic semester.