INFO 6255 Software Quality Control and Management
FALL 2024

Course Information
Course Title: **Software Quality Control and Management**
Course Number: INFO 6255
Term and Year: Fall 2024
Credit Hour: 4
CRN: 13132
Course Format: On-Ground

Instructor Information
Full Name: Matthew Medi Servattalab
Email Address: m.servattalab@northeastern.edu
Office Hours: Open

Instructor Biography
I have been concentrating in the Software QA for the last 30+ years of my professional career. I have worked in many small and large companies in NE. My most recent experience as an IT executive was at Fresenius Medical Care, managing the Software QA department as the VP of QA for 17 years. Since 2022, I have been consulting at MassDOT IT. I am a graduate of NU with a computer science degree. I love IT and love to share my experience with my students.

Teaching Assistant Information
Full Name: Rebecca Biju
Email Address: biju.r@northeastern.edu
Office Hours: TBD

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

Course Description
This course examines the techniques for the management and evolution of software systems. It mostly focuses on Software Quality Assurance and its methodologies and tools. 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. Two test automation tools, UFT and Selenium will be utilized in this course.

Course 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 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.
4. Learn all aspects of Software Quality Assurance and automation tools.
5. Learn all SDLC methodologies and distinguish the differences between them.

The Information Systems Program accepts students of different engineering backgrounds with minimum programming skills. It produces first-class Information Systems engineers who operate at the intersection of real-world complexity, software development, and IT management. Graduating students can 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

Required Tools and Course Textbooks.
Understanding Programming languages, Web Technology Architecture, JavaScripting/VB Scripting, Data Bases (SQL Server and Oracle), Familiarity with different Operating System, and fluency in Word/Excel/PowerPoint/Visio

Course Schedule/Topics Covered.

Week	Date	In Class Topic	Assignment Due
1	09/05	Introductions and the HouseKeeping Rules	
2	09/12	Quality Management; SDLC phases and the QA Life Cycle	
3	09/19	Anatomy of a Test Plan Document & Test Scenarios/Test Cases	
4	09/26	Analysis of functional & business Requirements/Designing a Test Condition Matrix/Test Scenarios & Traceability Matrix	
5	10/3	Waterfall & Agile (SAFe Agile) Methodologies Overview. Intro to DevOps/DevSecOps	
6	10/10	QA Automation Testing & Tools Change and Release Management Processes	10/24
7	10/17	**Automation Tool Assignment 1: Micro Focus UFT Project - Group Presentations**	

8	10/24	Career Management; IT Leadership, QA Job Positions & Job Interviewing Questions/Answers.	
9	10/31	Intro to the Usability and User Experience Testing. Optimize Quality for Business Outcome Assignment – Group Presentation	
10	11/7	Intro to Back End/Database and API Testing, AI & AI use in Automation testing.	
11	11/14	Test Management tools Introductions: Micro Focus ALM; Jira & TestRail overview, & Cloud Computing. Selenium project	
12	11/21	Cross Browser and Mobile Testing; Intro to Monolithic vs. Microservices Architecture Testing. Cloud Computing Testing.	
13	11/28	**Thanksgiving**	
14	12/5	**Automation Tool Assignment 2: Selenium Project - Group Presentation**	
15	12/12	Final Project Presentation	**12/12**

Assignment Grading
- Class Participation (10%)
    o Your participation in the classes

- Weekly Quizzes (22%)

    o Timely Submission

    o Completeness & Correctness

- UFT and Selenium Automation Assignments (23%)

    o Group presentations of the automated scripts in the class

- Research Assignments (15%)

    o Group presentations of the research assignments in the class

- Final Project – Project (30%)

    o Analyzing the Business and Functional Requirements

    o Creating Test Condition Matrix/Test Scenarios & Test Cases/Traceability Matrix

    o Creating a Test Plan

    o Group presentation of your project in the class

Grading Scale

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

Attendance/Late Work Policy

Attendance Policy

Students registered in MGEN courses (INFO, CSYE, and DAMG) are allowed **a maximum of 2 absences per course, with 3 or more absences resulting in an automatic 'F' for that course.** Students are expected to inform their instructors of any absences in advance of the class; if a student is sick long-term or experiences a medical issue that prevents class attendance, it is strongly encouraged that they speak with their Academic Advisor (coe-mgen-gradadvising@northeastern.edu) to learn more about the Medical Leave of Absence. Should a student anticipate being unable to attend 3 or more classes, they should discuss their situation with their Academic Advisor to explore other types of leave in accordance with the University's academic and global entry expectations. International students should review the Office of Global Services webpage to understand their visa compliance requirements.

Teaching Assistants (TAs) or Instructional Assistants (IAs) will be present at each class to collect student attendance.

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.

End-of-Course Evaluation Surveys
Your feedback regarding your educational experience in this class is particularly important to the College of Engineering. 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 prior to 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 Northeastern University Mail 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.

MGEN Student Feedback
Students who would like to provide the MGEN unit with anonymous feedback on this particular course, Teaching Assistants, Instructional Assistants, professors, or to provide general feedback regarding their program, may do so using this survey: https://neu.co1.qualtrics.com/jfe/form/SV_cTIAbH7ZRaaw0Ki

University Health and Counseling Services
As a student enrolled in this course, you are fully responsible for assignments, work, and course materials as outlined in this syllabus and in the classroom. Over the course of the semester if you experience any health issues, please contact UHCS.

For more information, visit https://www.northeastern.edu/uhcs.

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 https://drc.sites.northeastern.edu.

Library Services
The Northeastern University Library is at 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 for education specific resources, visit https://library.northeastern.edu
Network Campus Library Services: Northeastern University Library Global Campus Portals

24/7 Canvas Technical Help
For immediate technical support for Canvas, call 617-373-4357 or email help@northeastern.edu

Canvas Student Resources: https://canvas.northeastern.edu/student-resources/

For assistance with my Northeastern e-mail, and basic technical support:
Visit ITS at https://its.northeastern.edu
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, transgender students, faculty, and staff.

In case of an emergency, please call 911.

*Please visit **https://www.northeastern.edu/ouec** for a complete list of reporting options and resources both on- and off-campus.*