

Institute of Information Technology
University of Dhaka
Bachelor of Science in Software Engineering (BSSE)

Course Outline

Course Code:	SE 605
Course Name:	Software Testing and Quality Assurance
Course Credit:	3 (Theory 2 + Lab 1)
Instructor	Abdus Satter Lecturer, IIT, University of Dhaka abdus.satter@iit.du.ac.bd

Course Outline:

Software testing and quality assurance is particularly important in Software Development Life Cycle (SDLC) since it ensures customer's reliability and satisfaction towards the application. Software Quality Assurance and Testing includes – Basic Concepts of Software Testing. Software Validation and Verification with Software Testing Terminology and Methodology. Black Box and White Box testing with Validation Activities. Regression Testing. Software and Testing Metrics and Monitoring and Controlling the Testing Process. Test Suit Management. Quality Management. Testing Object-Oriented Software. Testing Web-Based Software and Debugging.

Textbook: Naresh Chauhan, Software Testing: Principles and Practices, 1st or higher Edition, Oxford University Press.

Reference Books:

1. Glenford J. Myers, Corey Sandler, and Tom Badgett. The Art of Software Testing, 3rd or higher Edition, John Wiley & Sons.
2. Lisa Crispin and Janet Gregory. Agile Testing: A Practical Guide for Testers and Agile Teams, 1st or higher Edition, Pearson Education.

Theory

SL#	Topics
1.	Introduction to Software Testing
2.	Software Testing Terminology and Verification and Validation

3.	Dynamic Testing: Black Box Testing
4.	Dynamic Testing: White Box Testing
5.	Validation Activities
6.	Regression Testing
7.	Software and Testing Metrics for Monitoring and Controlling
8.	Efficient Test Suit Management
9.	Software Quality Management
10.	Testing Object-Oriented and Web-Based Systems
11.	Debugging
12.	Test Smells

Lab

SL#	Lab
1.	Learn Unit Test. Write Unit Tests in <i>JUnit</i>
2.	Learn Integration Test. Write Integration Tests in <i>JUnit</i>
3.	Learn Performance Test. Run these tests using <i>Apache JMeter</i>
4.	Learn Stress and Load Test. Run these tests using <i>Apache JMeter</i>
5.	Eclipse and Visual Studio Debugging
6.	Review of Software Testing Concept, Teach about bugs in software and reporting bugs in <i>Bugzilla</i>
7.	Learn about automatic web testing. Learn <i>Selenium</i> tool for such kind of testing

Marks Distribution:

	Weight
Lab	20%
Mid	15%
Attendance + CT	5%
Project	10%
Final	50%
Total	100%

Lab (20%):

Lab Works	Marks
Lab-1 (JUnit – BVA, Equivalence Class)	3%
Lab-2 (JUnit – Path Coverage)	3%
Lab-3 (JUnit – Statement, Decision & Condition Coverage)	3%
Lab-4 (Apache JMeter - Performance Testing)	3%
Lab-5 (Finding Bugs through Debugging)	3%
Lab-6 (Bugzilla Basic)	3%
Lab-7 (Regression Testing using Selenium)	2%
Total	20%

Project (10%):

- Empirical Analysis on the existence of different test smells in open source software systems
- Developing an automated tool/plugin for test smell detection in Java, C#, Python, PHP etc.

Class Test (5%):

Class Tests	Marks
CT-1 (Software Testing, Verification, Validation, White Box Testing)	1.5%
CT-2 (Black Box Testing, Debugging)	1.5%
Attendance	2%
Total	5%

Midterm (15%):

Syllabus will be discussed in the class.

Final (50%):

Full Syllabus

**Maximum 5% bonus marks will be given for outstanding performance.*