

SWE222: Software Quality Assurance and Testing (Summer’17)

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| Course Instructor: | Rubaida Easmin (RE), SSH, RI  [rubaida.swe@diu.edu.bd](mailto:rubaida.swe@diu.edu.bd) |

Course Outline

# Objectives:

Software testing is particularly important in Software Development Life Cycle (SDLC) since it ensures customer’s reliability and satisfaction towards the application. Due to its importance, testing is often considered as a process which is parallel to every software development activities. The testing process can be broadly planned into two activities – Verification and Validation (V&V). A systematic realization of these activities can enhance software quality to a great extent. The aim of this course is to illustrate these aspects of software testing as a methodical process to produce quality software. It is expected that students, at the end of this course, will have a clear understanding of the foundations, methodologies and tools in the area of software testing.

# Reference Book:

* ISTQB: Foundation Level Syllabus, http://www.istqb.org/downloads/send/2-foundation-level-documents/3-foundation-level-syllabus-2011.html4
* Naresh Chauhan, Software Testing: Principles and Practices, 1st or higher Edition, Oxford University Press.
* Glenford J. Myers, Corey Sandler, and Tom Badgett. The Art of Software Testing, 3rd or higher Edition, John Wiley & Sons.

# Consultation Time:

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| Day | Time |
| Sunday | 10.00 AM - 02.30 PM |
| Monday | 11.30 AM - 04.00 PM |

# Assessment policy:

Three quizzes will be taken as per university policy and the average mark will be counted. Students have to complete some in-class assignment and homework on various exercises for theory class. There will be a mid-term and final examination, which students must attend.

# Attendance policy:

Students have to attend minimum **70%** of total classes. Students have to enter the class within 15 minutes to get attendance in the class. After **15** minutes students **CAN** enter the class, however, he/she will get ‘**L**’ which means ‘late attendance’. After **3** late attendances it will be counted as **one** absent. Thus, students need to be careful about time.

# Tentative class plan:

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| Lecture No. | Topic | |
| Lecture 01 | Fundamentals of Testing | * Terminology: verification, validation, testing * Testing Principles * Necessities of Testing * The Psychology of Software Testing |
| QUIZ | | |
| Lecture 02 | Testing throughout Software Life Cycle | * Software Development Model * V&V Model * Test Levels * Test Types |
| Lecture 03 | Black Box Testing | * Boundary Value Analysis * Equivalence Partitioning * State Transition based Testing * Decision Table based Testing * Use Case Testing |
| QUIZ | | |
| Lecture 04 | Test Planning & Documentation | * Test Plan * Test Case * Test Report |
| MID EXAM | | |
| Lecture 05 | White Box Testing | * Basic Path Testing * Statement coverage * Branch coverage * Data Flow Testing |
| QUIZ | | |
| Lecture 06 | Test Management | * Test Organization * Test Plan, Design and Specifications * Software Quality Management and Project Management Software Quality Metrics |
| Lecture 07 | Tools Support for Testing | * Test Tool Classification * Application of different testing tools (Bugzilla, JUnit) |
| FINAL EXAM | | |

# Marks Distribution:

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|  | Marks |
| Quiz | 15 |
| Mid | 25 |
| Final | 40 |
| Assignment | 05 |
| Attendance | 07 |
| Presentation | 08 |
| Total | **100** |

GOOD LUCK!!!!