ITMD 536 Software Testing and Maintenance

Fall 2018

Nazneen Hashmi

Syllabus

Professor: **Nazneen Hashmi**
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Course Catalog Description: This course covers the basic concepts of Software testing and maintenance. The Testing Maturity Model provides a framework for developing a more mature test process. Testing techniques, test metrics and the test plan management concepts are described within this framework

Prerequisites: None

Course Outcome: Description of course outcome, generally broad in nature and not necessarily measurable.

Lecture Days, Time & Place: Saturday 10:00am to 12:40pm, **Stuart Building, Room# 213**, 10 W. 31st Street on IIT's Main Campus, or online via IIT Online.

Schedule of Topics/Readings: ***You should do all readings prior to class.***

Session	Date	Topic	Reading
1	August 25	Week 1 Class and Course introduction Fundamentals of Testing	Chapter 1
2	September 1	Week 2 Testing throughout the software life cycle	Online-Chapter 2
3	September 8	Week 3 Static Techniques	Online-Chapter 3
4	September 15	Week 4 Test Design Techniques	Online-Chapter 4
5	September 22	Week 5 Test Management	Chapter 5
6	September 29	Week 6 Tool Support for Testing ***Research Paper select 1 topics (email your topic)***	Chapter 6
7	October 6	Week 7 **Midterm Exam** (in Classroom Closed Book/Notes)	**EXAM**
8	October 13	Week 8 Software Maintenance Overview (Project work no class)	Chapter 1&2
9	October 20	Week 9 The Maintenance Pie Ten Success Recipes ***Research Paper Outline Due***	Chapter 3&4
10	October 27	Week 10 Adequate Transition Establishing Infrastructure	Chapter 5&6
11	November 3	Week 11 Best in Class – Responsive User Support Structure	Chapter 7&8
12	November 10	Week 12 Regressing Testing & Annual Releases	Chapter 9&10
13	November 17	Week 13 Resourcing and Measurement Data Utilization ***November 17: Graduate Research Paper is due - midnight***	Chapter 11&12
14	November 24	Week 14 **NO CLASS: Thanksgiving Holiday**	
15	December 1	Week 15 Major Upgrade, Retire System & Action Plan ***December 1: Final Group Project is in Classroom***	Chapter 13, 14&15
16	December 8	Week 16 Final Exam **Group Project Presentation** ***December 8: Final Group Project is in Classroom***	**Final Exam**

Textbook: The textbook for this course is **mandatory.**
Author Veenendall, Author Erik and Author Graham, Author Dorothy, *Title of the Book*, Foundations of Software Testing ISTQB Certification 3rd Edition, Year; ISBN 10: 1408044056 and 13: 978-1408044056.

Foundations of Software Testing ISTQB Certification 3rd Edition by Rex Black, Erik van Veenendaal, Dorothy Graham, Cengage Learning ISBN-10: 1408044056 ISBN-13: 978-1408044056.

Textbook: The textbook for this course is **mandatory.**

Foundations of Software Testing ISTQB Certification 3rd Edition by Rex Black, Erik Van Veenendall, Dorothy Graham, Cengage Learning ISBN-1408044056 ISBN-13:978=1408044056.

Here's the link to a PDF of previous edition:
http://www.computing.dcu.ie/~ray/teaching/CA358/dorothy_graham.pdf

Textbook: The textbook for this course is recommended.

Software Testing A Craftsman's Approach Fourth Edition by Paul C. Jorgensen

Textbook: The textbook for this course is **mandatory.**

Software Maintenance Success Recipes by Donald J. Reifer, Auerbach Publications 2011 ISBN-10: 1439851662 ISBN-13: 978-1439851661

Textbook: The textbook for this course is recommended.
Software Maintenance Management: Evaluation and Continuous Improvement by Alian April and Alian Abran Publication 2008 – ISBN 9780470147078 and/or ISBN- 10987654321

Readings/Videos: Readings for the class will be assigned from the textbook as well as in the form of online reading. Online resources and videos will be linked from or embedded in a Blackboard page. It is essential that you do all readings and/or view the videos before coming to class on the assigned date. These materials are a necessary and integral part of the class and will form the basis for any class discussions on the topic. Specific readings are assigned by topic above.

Course Objectives: At the conclusion of this course, each successful student will able to:

- Develop Test Plan, Create Test Scenarios,
  - Kickoff meeting with test entrance criteria is required to start the initial testing phase
  - Execute testing at different stages of software development.
  - Minimum two iterations of testing is required to move to the next stage.
- Utilize different tools and models for following types of testing example: white box, black box, system, configuration, end to end, regression, load/performance and user acceptance testing depending on the requirements and time limitations.
  - Create issues/problem or defect log to follow-up and do retesting until the issue is fixed and closed.
  - If the issue is not closed resubmit or reopen the original issue.
  - Provide daily test metrics to the department to show where we stand on the testing phase what are the bottle necks or blocker issues.
  - Have defect fixing criteria with the priority and time limits (example Critical to be fixed with 4 hours, High within 8 hours, Medium 24 hours and Low 48 hours).
  - Signoff is required upon completion of testing only upon meeting the test exit criteria.

Course Notes: Copies of the course lecture notes in the form of a PDF of the PowerPoint presentation accompanying each lecture will be provided for each student on Blackboard. This should be useful if you must miss a class. You should be aware that note taking is encouraged and should help your understanding of the material.

Course Web Site: http://blackboard.iit.edu/

Blackboard: The course will make intensive use of Blackboard (http://blackboard.iit.edu/) for communications, assignment submissions, group project coordination, providing online resources and administering examinations. All remote students will view the course lectures online via Blackboard, and online readings will be found on Blackboard.

Guest Lectures: Guest lecturers may be featured as part of course topics. When a guest speaker is expected you should make an extra effort to be seated and ready prior to class time. Guest lectures may be in the evening in which case class will not be held during a scheduled morning period. A question & answer/ discussion period will be held at the end of each lecturer's presentation.

Attendance: If you are in a live section of the class and will not be able to attend class, please notify me via email or by text message to 312.498.8387 prior to class time. Live section students who miss a class should always watch the lecture online.

Assignments: There will be two main assignments for this class.

Assignment 1 – Research Paper: Select one of the following topics or if you want to write on a different topic please let me know.

1. Software Testing – SDLCSTLC
2. White-box/Black-box testing
3. Select any Testing tool (Automation)
4. Test Management
5. Software Maintenance/ Regression Testing

A research paper addressing a topic in *whatever you specify*. The paper will be fifteen to twenty pages long and will meet standards expected of a paper submitted for journal publication. Instructions for submission of the paper will be included with the assignment on Blackboard. You must fully attribute all material directly quoted and you must document all sources used in the preparation of the paper using complete, APA-style bibliographic entries. *Failure to format your bibliography entries in APA style will result in an automatic reduction of one letter grade for this assignment.* No more than thirty-three percent of material included in any paper may be direct quotes. No more than sixty percent of the resources cited may be from online. Submission of the paper for actual publication is highly encouraged. A basic **outline** for your paper—which should be at least three pages in length—will be ***due October 20th.*** The research paper will be ***due November 17th.*** More specific instructions for the outline and the paper will be provided on Blackboard.

Assignment 2: **A group project** will be assigned in Blackboard by the sixth week of the course and will be ***due December 1st and 8th***. Details of the project will be in Blackboard.

Examinations: The midterm examination will consist of an in-class essay examination measuring course outcomes as discussed above. The examination will be closed-book, closed notes and not electronic devices.
Internet students need to complete the midterm exam by scheduling it with Charles Scott email: scott@iit.edu . *You need to have a proctor for this exam at your location (See exam statement for other options)*

Academic Honesty:

Plagiarism: All work you submit in this course **must be your own**. You must fully attribute **all** material directly quoted in papers and you must document all sources used in the preparation of the paper using complete, APA-style bibliographic entries. Including directly quoted material in an assignment without attribution is always plagiarism and will always be treated as such by me. No more than thirty-three percent of material included in any paper may be direct quotes. Students have submitted plagiarized material the last six times I have taught this course and **I will not tolerate it**. If you submit plagiarized material you **WILL** receive a grade of **ZERO** for the assignment, an Academic Honesty Violation Report will be filed, and it may result in your expulsion from the course with a failing grade as per the IIT and ITM academic honesty policies. **There is no excuse for not understanding this policy** and if you do not understand it please let me know and I will be happy to discuss it with you until you do. *(Should include assignment or lab collaboration statement as necessary.)*

Grading:

Grading criteria for **ITMD536** students will be as follows:

A	*Outstanding work reflecting substantial effort*	90-100%
B	*Adequate work fully meeting that expected of a graduate student*	80-89.99%
C	*Weak but marginally satisfactory work not fully meeting expectations*	65-79.99%
E	*Unsatisfactory work*	0-64.99%

The final grade for the class will be calculated as follows:

Midterm Exam 1	30%
Research Paper 2	40%
Final Project 3	30%

Other Class Resources: Online readings and other class resources may be found at on Blackboard.

Our Contract: This syllabus is my contract with you as to what I will deliver and what I expect from you. If I change the syllabus, I will issue a revised version of the syllabus; the latest version will always be available on Blackboard. Revisions to readings and assignments will be communicated via Blackboard.

Disabilities: Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and make an appointment to speak with me as soon as possible. My office hours are listed on the first page of the syllabus. The Center for Disability Resources (CDR) is located in 3424 S. State St., room 1C3-2 (on the first floor), telephone 312.567.5744 or disabilities@iit.edu.