

ITMD 536 Software Testing and Maintenance

Semester Fall, 2023

Professor Nazneen Hashmi

Professor: Nazneen Hashmi**Address:** Department of Information Technology & Management, 10 W. 33rd St., Chicago, IL 60616**Telephone:** (312) 498-8387 (Local) or WhatsApp**Email:** nhashmi@iit.edu**Office:** Online**LinkedIn:** use my personal email to connect – Nazneen.Hashmi@gmail.com**Office Hours:** Mies Campus: Not in person - **Online only** – please schedule the meetingOnline: Via *Google Meet* at meet.google.com/Zoom or by telephone or WhatsApp if international

Beacon LMS: Sunday 9AM – 10AM CST (Chicago Time)

Course Catalog Description: Copy from the university Bulletin, bulletin.iit.edu**Prerequisites:** any prerequisites from the Bulletin **Credit:** Normally 3-0-3 Semester Hours or Lab 2-2-3**Lecture Day, Time & Place:** (Saturday, 10:00AM to 12:40PM) via blackboard.iit.edu **ONLINE****Schedule of Topics/Readings:** *All readings should be done prior to class. Do the readings!*

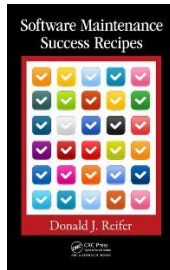
Session #	Date	Topic	Reading
1	August 26 th	Class and course introduction Fundamentals of Testing – “Foundations of Software Testing” Rex Black, Erik Van Veenendall, Dorothy Graham	Chapter 1
2	September 4 th	No Class – Labor Day on Sep 4th -	<i>Submit Resume/Questionnaire (for group project)</i>
3	September 9 th	Testing throughout the Software Life Cycle & Static Techniques	Chapter 2 & 3
		– Submit research paper Topic	
4	September 16 th	Test Design Techniques	Chapter 4
5	September 23 rd	Test Management & Tool Support for Testing	Chapter 5 & 6
6	September 30 th	Software Maintenance Overview & Success Recipes	Chapter 1 & 2
7	October 7 th	The Maintenance Pie & Ten Success Recipes	Chapter 3 & 4
8	October 14 th	Midterm Exam - Online	
9	October 21 st	Adequate Transition & Establishing Infrastructure	Chapter 5 & 6
		Research Paper Assignment due at midnight	
10	October 28 th	Best in Class and Responsive User Support Structure	Chapter 7 & 8
11	November 4 th	Regression Testing & Content Based Annual Release	Chapter 9 & 10
12	November 11 th	Resourcing & Measurement Data Utilization	Chapter 11 & 12
13	November 18 th	Major Upgrade & Retire System & Action Plan	Chapter 13, 14 & 15
14	November 28 th	No Class: Thanksgiving Holiday	
15	December 2 nd	Final Examination – Group Project Presentations submit PPP under Blackboard	
16	December 9 th	If needed additional time Final Examination – Group Project Presentations submit PPP under Blackboard	
17	December 13 th	Grading	

Textbook: The textbook for this course is **required**.Foundations of Software Testing ISTQB Certification 3rd Edition by Rex Black, Erik Van Veenendall, Dorothy Graham, Cengage Learning ISBN 9781408044056. **(Required)**

Here's the link to a PDF of previous edition:

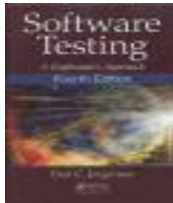
http://www.computing.dcu.ie/~ray/teaching/CA358/dorothy_graham.pdf

Software Maintenance Success Recipes by Donald J. Reifer, Auerbach Publications 2011 ISBN 9781439851662
(Required)



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

Software Testing A Craftsman's Approach Fourth Edition by Paul C. Jorgensen 2013 ISBN 9781466560680



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



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 Outcomes: Broadly describe outcomes of the course

- ◆ 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 are 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 what are the bottle necks or blocker issues.
 - Have defect fixing criteria with the priority and time limits - Critical, High, Medium & Low.
 - Signoff is required upon completion of testing only upon meeting the test exit criteria.

Course Student Outcomes: Students completing this course will be able to:

- ◆ Specifically describe each student outcome, beginning each line with an appropriate verb

Required and Recommended Textbooks:

- ◆ *Rex Black, Van Veenendall, Erick, Graham, Dorothy, Year*, ISBN: 9781408044056 – “Foundations of Software Testing ISTQB Certification” 3rd Edition – Publisher Cengage Learning **(Required)**
- ◆ Reifer, Donald J., ISBN: 9781439851662 – “Software Maintenance Success Recipes” Auerbach Publications 2011 **(Required)**
- ◆ Jorgensen, Paul C., ISBN: 9780470147078 – “Software Testing A Craftsman’s Approach” – Fourth Edition – AN AUERBACH BOOK (Recommended Not Required)
- ◆ Alian, April, and Alian, Abran – ISBN: 9780470147078 – “Software Maintenance Management” – Wiley Publication 2008 (Recommended Not Required)
- ◆ Online readings as assigned in Blackboard (if necessary)

Readings: Readings for the class will be assigned from the textbooks; there will be additional reading assigned in the form of online reading. All readings should be done before coming to class on the assigned date, and are mandatory and expected. Generally, if you do the readings you will excel in the course, as the lectures serve as a clarification and explanation of material you should already be familiar with. Completion of reading may be verified by quizzes. Specific readings are assigned by topic above.

Course Notes: Copies of the course lecture notes in the form of a PDF of the PowerPoint presentations accompanying each lecture will be provided for each student on Blackboard. You should be aware that note taking is encouraged and should help your understanding of the material. (Entirely optional!)

Attendance: Course attendance policies.

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 and other course material will be found on Blackboard.

Midterm Examination 1:

The midterm examination will be held online October 14th. This exam will consist of short questions/multiple choice, true/false statements measuring course outcomes as discussed above. The examination will be closed-book, closed notes.

Assignment 2: Research Paper

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. *The research paper will be due October 21st.* Specific instructions for the outline and the paper are provided on Blackboard.

Note: Topic selection is an important part of the research process – due by September 9th. There is an enormous and expansive variety of topics in this field and with a little work on your part, arriving at a topic should not be difficult at all. Topics should be very specific as you will be covering it in a relatively short amount of writing and you want to reflect an in-depth coverage of your topic, which you cannot do with a very broad topic. *(It is really up to you about topics.)*

Assignment 3: Final Exam (group project presentation)

Select the topic within your group. This will be assigned in Blackboard by the fifth week of the course and the final exam (group project presentation) will be due December 2nd. Details of the project will be in Blackboard. Each student needs to save the entire group project PowerPoint presentation under their name under the blackboard. One or two slides by each individual in group or 3 or 4. Presentation will be online on December 2nd at regular class hours.

Project/Examination: Details of the final exam or project.

Quizzes: (optional) I may give quizzes at my discretion and may use them for verification that you have completed assigned reading. As they are discretionary, the weight of quizzes in grading is also left to my discretion and will be included in your class participation grade. Quizzes may be online via Blackboard.

Grading: Grading criteria for (undergrad course number) students will be as follows:

A	<i>Outstanding work reflecting substantial effort</i>	90-100%
B	<i>Excellent work reflecting good effort</i>	80-89.99%
C	<i>Satisfactory work meeting minimum expectations</i>	70-79.99%
D	<i>Substandard work not meeting expectations</i>	60-69.99%
E	<i>Unsatisfactory work</i>	0-59.99%

Grading criteria for (graduate course number) students in the graduate curriculum will be as follows:

(REMEMBER THAT YOU MUST HAVE SEPARATE SYLLABI FOR UNDERGRADUATE AND GRADUATE SECTIONS IN COURSES WITH SHARED LECTURES!)

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

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

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

Late Submission: optional but recommended) A penalty of up to 10% *may* be assessed at instructor discretion for assignments/ examinations submitted after the due date and time.

Academic Honesty: All work you submit in this course **must be your own**.

Plagiarism: 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 or a bibliography entry for the source of the material 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 in seven of the last eight 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 or exam question, 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.

Collaboration: Students may only collaborate on assignments or projects that are explicitly designated as group assignments or projects. Students submitting work that is identical or in some cases even substantively the same will be asked to discuss the assignment with me. If one student admits to having copied the work, or if there is clear evidence who is guilty, the guilty student will be assigned a grade of zero. If no one admits to the offense or a reasonable determination of guilt cannot be made, each student involved will be assigned a grade of zero. In either case, 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.

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.