

COURSE SYLLABUS

COM239: Software Testing

Course Description

This course provides an introduction to systematic and organized approaches to software testing. The goal of the course is to provide students with the skills to select and apply a testing strategy and testing techniques that are appropriate to a particular software application or system. In addition, the student will become familiar with using a standardized testing tool to assess the effectiveness of their testing activity, and to provide evidence to justify their evaluation. Students will learn the theory behind criteria-based test design and to apply that theory in practice. Topics include test case design, the various levels of testing, test management, evaluating software quality, validation of test outputs, report generation, test coverage criteria, STLC, and test metrics.

General Course Information

Number of Units/Weeks	4/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	40/00/80
Prerequisite(s)	COM202 or COM285 (SD) COM123 or COM203 (GDD)
Co-requisites (s)	None
Course Developer(s)	Anthony Le, B.S. Leticia Rabor, M.S.
Date Approved / Last Review	May 2017 / May 2017

Learning Outcomes

- Demonstrate the fundamentals of software testing.
- Identify requirements to determine appropriate testing strategies.
- Construct comprehensive test strategies and plans, as well as generating several test cases.
- Apply a wide variety of testing techniques in relation to software development and project management.
- Complete report generation including the measurement of test processes.
- Use a web-based tracking tool to track known bugs in a self-developed software program.
- Communicate clearly and appropriately to determine requirements, procedures, expected outcomes and product.

- Explain the benefits of team building in software testing.

Instructional Methods Employed in this Course

- Use of Software Testing tools
- Lecture and reading assignments
- Practical Hands-on exercises
- Homework Review Questions
- PowerPoint Slides

Information Resources for this Course

Textbook

Laboon, B. (2017). *A Friendly Introduction to Software testing (1st ed)*. North Charleston, SC: CreateSpace Independent Pub.

Schultz, C., Bryant, R.D. (2017). *Game Testing All In One (3rd ed)*. Herndon, VA: Mercury Learning & Information Pub.

Other Book Resources

Patton, R. (2006). *Software testing* (2nd ed.). Indianapolis, IN: Sams Pub.

Beizer, B. (2009). *Software testing techniques* (2nd ed.). London: International Thomson Computer Press.

Myers, G., & Sandler, C. (2012). *The art of software testing* (3rd ed.). Hoboken, N.J.: John Wiley & Sons.

Web Site Resources

10 Steps to Become a Video Game Tester,
<http://www.gamedesigning.org/video-game-tester/>

International Game Developers Association,
<http://www.igda.org/>

Entertainment Software Association,
<http://www.theesa.com/>

Academy of Interactive Arts & Sciences,
<http://www.interactive.org/>

Table/Topics & Assignments

Types of Assignments:

Lecture -

Considered Lecture Hours

Classroom Discussion -

Considered Lecture Hours

In Class (IC) Exercise -

Considered Lecture Hours

Reading -

Considered Homework (HW), work done outside of class

Project Assignments -

Considered HW, work done outside of class

Chapter Review Exercises -

Considered HW, work done outside of class

Midterm and Final -

Considered Lecture Hours

Week 1						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 1A	Introduction to Software Testing Life Cycle	4	--	--	--	
HW 1A	Read Intro to Software Testing Chapters 2, 3, 7 (13 pages); Game Testing Chapters. 2, 3 (46 pages). Evaluated by HW 1B	--	--	5.9	--	Week 2
HW 1B	Chapter Review Exercises (10 questions)	--	--	0.8	--	Week 2
HW 1C	Project 1	--	--	4	100	Week 2
Total Week 1		4	--	10.7	100	
Week 2						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 2A	Introduction to Test Planning	4	--	--	--	
HW 2A	Read Intro to Software Testing Chapters 6, 8 (19 pages), Game Testing Appendix B page 375 (6 pages). Evaluated by HW 2B	--	--	2.5	--	Week 3
HW 2B	Chapter Review Exercises (10 questions)	--	--	0.8	--	Week 3

HW 2C	Project 2	--	--	4	100	Week 3
Total Week 2		4	--	7.3	100	
Week 3						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 3A	Test Design	4	--	--	--	
HW 3A	Read Intro to Software Testing Chapters 15, 16 (21 pages), Game Testing Chapter 9 (30 pages). Evaluated by HW 3B	--	--	5.1	--	Week 4
HW 3B	Chapter Review Exercises (10 questions)	--	--	.8	--	Week 4
HW 3C	Project 3	--	--	8	100	Week 4
Total Week 3		4	--	13.9	100	
Week 4						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 4A	Test Techniques	2	--	--	--	
LEC 4B	Dynamic & Static Black Box Testing	2	--	--	--	
HW 4A	Read Intro to Software Testing Chapters 4, 5 (13 pages), Game Testing Chapters 5-8 (92 pages). Evaluated by ELP 4B	--	--	10.5	--	Week 5
HW 4B	Chapter Review Exercises (10 questions)	--	--	0.8	--	Week 5
Total Week 4		4	--	11.3	-	
Week 5						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 5A	Levels & Types of Testing	1	--	--	--	
LEC 5B	Static White Box Testing	1.5				

EXAM 5B	Midterm Examination (Chapters 1-5, 7, 12)	1.5	--	--	150	In Class
HW 5A	Read Intro to Software Testing Chapters 13, 14, 17, 19, 20 (58 pages), Game Testing Chapters 10, 12, 14, 15 (73 pages). Evaluated by HW 5B	--	--	13.1	--	Week 6
HW 5B	Chapter Review Exercises (10 questions)	--	--	0.8	--	Week 6
Total Week 5		4	--	13.8	150	
Week 6						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 6A	Test Execution	2	--	--	--	
LEC 6B	Dynamic White Box Testing	2	--	--	--	
HW 6A	Read Intro to Software Testing Chapters 10, 11 (6 pages), Game Testing Chapter 4 (27 pages). Evaluated by HW 6B	--	--	3.3	--	Week 7
HW 6B	Chapter Review Exercises (10 questions)	--	--	0.8	--	Week 7
HW 6C	Project 4	--	--	4	100	Week 7
Total Week 6		4	--	8.1	100	
Week 7						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 7A	Writing a Test Plan	2	--	--	--	
LEC 7B	Defect Management	2	--	--	--	
HW 7A	Read Intro to Software Testing Chapter 9 (8 pages), Game Testing Chapter 13 (16 pages). Evaluated by	--	--	2.4	--	Week 8

	HW 7B					
HW 7B	Chapter Review Exercises (10 questions)	--	--	.8	--	Week 8
HW 7C	Project 5: Test Plan	--	--	4	200	Week 10
Total Week 7		4	1	7.2	200	
Week 8						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 8A	Reporting & Team Collaboration	4	--	--	--	
HW 8A	Read Intro to Software Testing Chapters 21 (9 pages) Evaluated by HW 8B	--	--	0.9	--	Week 9
HW 8B	Chapter Review Exercises (10 questions)	--	--	.8	--	Week 9
HW 8C	Project 6	--	--	4	100	Week 9
Total Week 8		4	1.0	5.7	100	
Week 9						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 9A	Metrics & Measurement	4	--	--	--	
HW 9A	Read Intro to Software Testing Chapter 12 (8 pages), Game Testing Chapter 11 (16 pages). Evaluated by HW 9B	--	--	2.4	--	Week 10
HW 9B	Chapter Review Exercises (10 questions)	--	--	0.8	--	Week 10
HW 9C	Project 7	--	--	4	100	Week 10
Total Week 9		4	--	7.2	100	
Week 10						
Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due

LEC 10A	Testing Tools & FAQs	2				
EXAM 10A	Final Examination	2	--	--	150	In Class
Total Week 10		4	--	--	150	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1	Course Introduction to Software Testing, Introduction to Software Testing Life Cycle	4	--	10.7
2	Introduction to Test Planning	4	--	7.3
3	Test Design	4	--	13.9
4	Test Techniques, Dynamic & Static Black Box Testing	4	--	11.3
5	Levels & Types of Testing, Static White Box Testing	4	--	13.8
6	Test Execution, Dynamic White Box Testing	4	--	8.1
7	Writing a Test Plan, Defect Management	4	--	7.2
8	Reporting & Team Collaboration	4	--	5.7
9	Metrics & Measurement	4	--	7.2
10	Testing Tools & FAQs, Finals	4	--	--
Total		40	--	85.2

Table/Point Breakdown

Week	Assignment	Possible Points	Percent of Grade
1	Project 1	100	10%
2	Project 2	100	10%
3	Project 3	100	10%
5	Midterm	150	15%
6	Project 4	100	10%
7	Project 5: Test Plan	200	20%
8	Project 6	100	15%
9	Project 7	100	15%
10	Finals	150	15%
Total		1000	100%

Your grades for this course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:

Percent	Letter Grade	Grade Points
94-100	A	4
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
N/A	I	0
N/A	W	0
N/A	AU	0
N/A	TR	0
N/A	WV	0

Legend	
CR = Credit	NC = No Credit
I = Incomplete	W = Course Withdrawal
AU = Audit	TR = Transfer Credit
WV = Waiver	

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.