Capital University of Economics and Business

Overseas Chinese College

Course Syllabus

Year and Semester	2023 Spring
Course Name	Software Testing
Course Code	MIS306
Course Type	☐ General Education (Required) ☐ General Education (Elective) ☐ Professional Course (Required) ☑ Professional Course (Elective) ☐ Basic Disciplinary Course
Course Credits	3
Course Hours	42
Prerequisites	None
Instructor	Jessie Tian
Contact Information	Office: C217 Tele: (010)83951082 Email: tianjiangxue@cueb.edu.cn
Office Hour	T: 13:30-15:05; W: 15:25-17:00; TH: 13:30-15:25
Learning Centre	T: 15:25-17:00; T: 18:00-20:00(online);
Grade/Section	2020IT/ Y01
Course Time/Place	W: 09:55-12:20/A106;

Textbook

Ron Patton, *Software Testing*, 2nd edition, SMS 2006, ISBN: 7-111-17770-3/TP

Course Description

This is the core undergraduate level course for junior students majoring in Information Management and Information Systems. It covers main fundamental concepts, basic techniques, routine procedures and processes, implementation strategies and frequently used methodologies for software testing. The major objectives will be to discuss the fundamental techniques that may be used derive test cases to test executable software artifacts so that the quality of these artifacts may be improved as well as to allow the students to gain necessary practical skills to be software testing engineers in any of the companies in the related fields.

Student Learning Outcomes

After learning this course, the students will be able to:

Knowledge:

- explain the fundamental principles and terminology of software testing
- identify the different kinds of software testing.
- illustrate the basic techniques of software testing.

Capability

- demonstrate and implement effective testing techniques.
- write test plans and test case as well as testing documentations.

Mindset

- establish the integrity and objectivity about software testing.
- be logical, ethical, methodical, consistent and accurate.
- apply critical thinking in the process of decision making.

Teaching Methods

This course contains lectures, case studies, discussions, homework, quizzes, presentation and exams. Exercises and practice questions will be delivered to students as a way to test their understanding of the knowledge. This will require individual or group assignment before, in or after class.

Grade Criterion

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. The exam paper may be composed of multiple-choice questions, short answer questions, essay questions, problems, and preparation of financial statements. Students should rely primarily on homework assignments to give them a sense of what they may see for material on exams.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents that have been taught in class. The test paper may be mainly composed of multiple-choice questions and it should be completed in class.
Homework	15%	Most of the assigned homework is taken from the Exercises in the textbook. Assignments will be collected at the clearly stated date. Late assignments will not be accepted. The graded assignments may be kept by the tutor for reference and won't be returned to students.

Quizzes	15%	There will be at least 2 quizzes during the semester. Quizzes may or may not be announced in advance. It may also be used as a way to check the attendance. Quizzes will test your knowledge of both concepts and the application of those concepts.
Presentation	10%	The students will be divided into several groups to prepare a presentation. Each student is required to be involved in the presentation. The topics can be selected from the textbook or lectures. Each group need to finish a PPT related to the topic which is given and hand in the related resources to the teacher before the presentation.
Participation	10%	Individuals will be asked to participate individually in a question and answer at least 5 times during the semester. The performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	Before Midterm	After Midterm
Attendance	5%	5%
Participation	5%	5%
Homework	5%	10%
Quizzes	5%	10%
Presentation		10%
Midterm test	20%	
Final exam		20%
Total	40%	60%

Grading Policy

A+ 97-100 A 93-96 A- 90–92 B+ 87-89 B 83-86 B- 80–82

C+ 75-79 C 70-74 C- 67–69 D+ 63–66 D 62-60 F 0- 59

Exam Schedule

Midterm Test: April 10th - April 14th, 2023

Final Exam: June 5th–June 9th, 2023

Assessment of Student Performance

☞ ***Self-Study and Reading ability Practice***

Instructor will give out the chapters or the reference books to read and use class hours to have discussion; students should be able to show a proactive attitude and ability for self-study and reading. Knowledge and oral English will be elements of homework or presentation score.

☞ ***Homework***

Students should finish their homework by themselves. Copying from others will be treated as cheating and the homework scores will be lowered. Students should hand in all assignments on time. Late assignments will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Late assignments without reasonable proof will be refused and the score will be zero.

☞ ***Attendance***

Because the course covers a great deal of material, attending every class session is very important for performing well.

- Being late for 15 minutes or more is considered an absence.
- Five hours or above of unexcused absences will result in the lower level of the final grade by one grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.
- Absence which is more than 1/3 of the total teaching hours will cause an F (a failing grade) directly. but students are welcome to continue attending classes.
- An incomplete grade (I) will be considered in case of medical or family emergencies.

☞ ***Participation***

- Students should participate in classes actively. Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates.

- Students should also use office hours to ask questions or talk with the instructor for good communication and effective learning.
- Frequent visiting the instructor and chatting in English during office hours is highly recommended.
- Any misbehavior and non-class related activities in class will result in the lower level of the participation grade, including ringing cell phones.
- All above behaviors will be solely evaluated by the instructor for scoring.

☞ ***Textbook***

Students must bring the textbook to class.

Topical Course Outline

Week	Topics	Homework
1	Syllabus Chapter 1 • Introduction to Software Testing • How software bugs impact our lives • What bugs are and why they occur • Who software testers are and what they do	P22 2,4,5,6
	Review to Chapter 1 Discussion Practice	——
2	Chapter 2 • The Software Development Process • The major components of a software product • Different people and skills contribute to a software product • How software progresses from an idea to a final product	P36 1,2,3,6
	Review to Chapter 2 Discussion Practice	——

3	□ Chapter 3 • The Realities of Software Testing • Testing Axioms • Software Testing Terms and Definitions □ Discussion □ Review to Chapter 3 □ Practice	P50 2,5,6 ——
4	□ Chapter 4 • Examining the Software Specification Getting Started • Examining the Software Specification • Performing a High-Level Review of the Specification — Low-Level Specification Test Techniques	Modify the old spec and print one hard copy for the new spec Accept both individual and group work Due Mar. 28 P89 1,2,4,5,6,8,9
5	□ Chapter 5	——
	• Testing the Software with Blinders on • Dynamic Black-Box Testing: Testing the Software While Blindfolded • Test-to-Pass and Test-to-Fail • Equivalence Partitioning • Data Testing • State Testing Other Black-Box Test Techniques □ Review to Chapter 5 □ Discussion — □ Practice	——
6	Qingming Festival	

7	**Midterm Test** Covers Chapter 1~5 Chapter 6 • Examining the Code • Static White-Box Testing: Examining the Design and Code • Formal Reviews • Coding Standards and Guidelines Generic Code Review Checklist Review to Chapter 6 Discussion Practice	P104 1,2,3,4,5,6,7
8	Chapter 7 • Testing the Software with X-Ray Glasses • Dynamic White-Box Testing • Dynamic White-Box Testing Versus Debugging • Testing the Pieces • Data Coverage • Code Coverage Review to Chapter 7 Discussion Practice	P122 2,4,5,6
9	Chapter 11 User Interface Testing	——
	• What Makes a Good UI? • Testing for the Disabled: Accessibility Testing Discussion Practice	P190 1,2,3,4
10	**Labor Day**	

11	□ Chapter 13 • Topics in Security Testing • Threat modeling • Types of Malware □ Review to Chapter 13 □ Discussion □ Practice	
12	□ Chapter 15 • Automated Testing and Test Tools • The Benefits of Automation and Tools • Test Tools • Software Test Automation • Random Testing: Monkeys and Gorillas Realities of Using Test Tools and Automation □ Review to Chapter 15 □ Discussion □ Practice	P 252 2 3 4 5 6 8
13	Presentation I	——
	Presentation II	——
14	Final Review	——
	Final Review	——

Note: *Some chapters or sections may leave for self-study, this is the students' duty to learn and understand, they may also be included in the quizzes or exams.*

A review in Chinese may be held during L.C. and O.H. in the semester.

Teacher's Office Hour

- The instructor's office hour is shown in the front of the office door.
- Students are suggested to use the instructor's office hour and learning center to ask questions or talk with the instructor once at least per week for good communication and effective learning, which is recorded in the students' participation.
- The time can be scheduled by instructors or students, or both.

Cheating and Plagiarism

Cheating is not tolerated. Any student caught cheating on a quiz; test or exam will be given a mark of zero (0) for the particular work. At the beginning of the semester the definition of plagiarism will be carefully explained, when any thoughts or writings of another person are used, they must be clearly identified (usually

one uses quotation marks) and the source notes. **If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".**

Instructor: Jiangxue Tian Department Head: Jingning Li