



University of Tehran
School of Electrical and Computer Engineering

Course:	8101743 – Introduction to Software Testing									
Course type:	EE*						CE*			Credit: 3
	Com	E	P	B	Con	D	SW	HW	IT	
	Required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Elective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Level:	Undergraduate <input checked="" type="checkbox"/> Graduate <input type="checkbox"/>									
Co-requisite(s):	None.									
Prerequisite(s):	Systems Analysis and Design (8101149)									
Prerequisite by topic:										
Textbook(s):	[1] P. Ammann, J. Offutt, <i>Introduction Software Testing</i> , Cambridge University Press, 1st ed., 2008. [2] G. Meszoros, <i>xUnit Test Patterns</i> , Addison-Wesley, 1st ed., 2007.									
Coordinator:	Ramtin Khosravi, Professor, School of ECE									
Goals:	Learn how to design and develop testing solutions for softwares									
Outcome:	Upon successful completion of the course, students will be able 1. Design tests for source codes based on different acceptance criteria 2. Develop test automation 3. Maintain and improve automatic tests based on feedbacks of development environments									
Topics:	1) Introduction, Why Testing 2) Model Driven Test Design, Test Automation 3) Coverage Criteria 4) Graph Coverage 5) Logic Coverage 6) Input Partitioning 7) Syntax Based Testing 8) Principles of Test Automation 9) Fixture Management and Result Verification 10) Test Doubles and Testing with Databases 11) Organizing Our Test & A Road Map to Effective Test Automation 12) Code Smells 13) Behavior & Project Smells 14) Design for Testability Patterns 15) Testing for Web Applications 16) Performance Test									

	17) High Performance Applications Tuning 18) Property Based Testing: Quick Check (Movie) 19) Model Based Testing 20) Reviewing Experiences from the SE Industry 21) Reviewing Experiences from the SE Industry 22) The Role of Software Testing in Agile Methods
Computer usage:	Needed for the development of some of the assignments
Assignments:	4 written assignments 3 computer assignments
Projects:	No final project
Grading:	Assignments: 30 % Midterm exams: 35% Final exam: 35 %
Further readings:	
Prepared by:	Ehsan Khamespanah
Date:	September, 2017

*EE: Electrical Engineering		CE: Computer Engineering	
Com	Communications	SW	Software
E	Electronics	HW	Hardware
P	Power	IT	Information Technology
B	Bioelectronics		
Con	Control		
D	Digital System		