



University of Tehran
School of Electrical and Computer Engineering

Course:	8101473 – Operating Systems Lab.									
Course type:	EE*						CE*			Credit: 1
	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 checked="" type="checkbox"/>	
Elective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Level:	Undergraduate <input checked="" type="checkbox"/> Graduate <input type="checkbox"/>									
Co-requisite(s):	Operating Systems 1(8101443)									
Prerequisite(s):	None.									
Prerequisite by topic:	Computer Architecture, Advanced Programming									
Textbook(s):	[1] M. K. Dalheimer, T. Dawson, L. Kaufman, M. Welsh, <i>Running Linux</i> . O'Reilly, 2002. [2] R. Love, <i>Linux Kernel Development</i> . Addison-Wesley Professional; 3 edition, 2010.									
Coordinator:	Kargahi, Professor, School of ECE									
Goals:	The goal of this course is to create the right understanding and to learn the techniques of designing and implementing system programs and operating systems based on an open source operating system. Students will get familiar with the implementation of basic design concepts of the operating system, such as file management, process management, kernel-level programming, process synchronization in an open source operating system, and learn to install and manage an open source operating system.									
Outcome:	Upon successful completion of the course, students will be able to 1. Compile, install and manage an open source operating system 2. Implement the basic concepts of designing operating systems in an open source operating system 3. Program in kernel-level									
Topics:	1) Introduction: An overview of Linux including its history, versions, Posix, Graphical User Interface 2) Install and compile a version of Linux: Disk partition, compile, boot load, use the application menu and system. 3) Linux file system 4) Standard and advanced Shell 5) Managing Processes and Threads 6) Processor scheduling in Linux 7) Deadlock synchronization 8) Memory management									

	9) Kernel Programming and System Services
Computer usage:	C++, Java
Assignments:	-
Projects:	5 lab projects
Grading:	Assignments: ... % Projects: ... % Quizzes: ... % Midterm exams: ... % Final exam: ... %
Further readings:	[1]
Prepared by:	Mahdi Kargahi
Date:	December, 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		