Operating Systems Labratory

Spring 2021

Instructor:	Amir Hossein Rouhani Seraji	**Code:**	7332
Email:	ah.rouhaniseraji@gmail.com	**Unit:**	1

Course Pages: Please check this website two or three times a week

- https://rouhani-class.github.io/oslab

Discussion Group: Every student has to be a member of our Telegram Channel and Telegram Group for our discussion and daily announcements.

- Telegram Channel.
- Telegram Group.

Teaching Assistant:

- Mehran Moeini Jam.
- Mohammad Hossein Khoshechin.
- Mehdi Movahedian.

Prerequisites: An undergraduate-level understanding of operating systems concepts.

Objectives: This course is primarily designed for undergraduate students. In this course you will be learned how to work and administrating unix-like operating systems, system programming , and writing shell scripts. We do not emphasize on using a specific distro of unix-based operating systems, if you are currently working with one of them and you are familiar with using unix-based operating systems , then you are free to use your favorite distro. And if you are not familiar with them , then we will teach you how to start using them. The topics which will be covered are :

- History of Unix and Linux Operating Systems
- Introducing Linux and Unix Distributions
- Bootstrapping Scenario
- File Systems
  - File Systems Directories
  - File/Directories Commands
  - Group and User and Ownership Management
  - Premissions
  - Mounting
- Processes Management
  - Forking System

  - Processes Management Commands
  - Foreground and background Processes
  - Signaling and Signal Handeling
  - Inter-Process Communication (IPC)
- Multi-Threading
  - Pthread Programming
- Shell Scripting
  - Key Files
  - Variables
  - Operators
  - Shell Programming

Main References: Our Lectuers are mainly based-on these books.

- Willam Shotts, *The Linux Command Line a Complete Introduction*, No Starch Press, 2nd ed, 2019.
- Evi Nemeth, Garth Snyder, and etc, *Unix and Linux System Administration Handbook*, Addison-Wesley, 5th ed, 2018.
- W. Richard Stevens, Stephen A. Rago, *Advanced Programming in the Unix Environment*, Addison-Wesley, 3rd ed, 2013.
- Stephen Kochan, Patrick Wood, *Shell Programming in Unix, Linux and OS X*, Addison-Wesley , 4th ed, 2017.

Grading Policy: 5 Homeworks each one has (20%) of your Final grade, No Final and Mid-term Exam.