

University of Tlemcen
Computer Science Department
1st Year Engineer
"Introduction to the operating system 1"

Session 1: Presentation of the course content

Academic year: 2023-2024

Objectives of the "Introduction to operating system 1" course

- ❑ Introduce students to the Unix system.
- ❑ At the end of the course, students should be able to work in a Unix environment (at user level) and install a Unix system (Linux).

Content of the "Introduction to operating system 1" course

❑ Introduction

- *Definition and functions of an operating system*
- *History of Unix (Linux) operating system*

❑ Unix system overview

- *Unix users*
- *The main features*
- *Unix system structure*
- *The Shell*

❑ Login and logout

- *Open a session (Login)*
- *Create/change password*
- *Logout (closing a session)*

❑ Unix commands

- *Command syntax*
- *Basic commands*

❑ Redirection and pipe

- *Inputs/outputs*
- *Redirection of inputs and outputs*
- *Error redirection*
- *Pipes*

❑ Unix directories and files

- *Types of files*
- *Reach a file*
 - *Naming a file*
 - *The access path*

- *View files*
- *Directory management commands*
- *File management commands*
- *Links (physical and symbolic)*
- *Inodes*
- *Metacharacters*
- *Access rights*
 - *User identification*
 - *User rights definition*
 - *Case 1: a standard file*
 - *Case 2: a directory*
 - *Related commands*
 - *Change rights: chmod*
 - *Change default rights: umask*
 - *Change owner and group*

□ Unix filters

■ *Modifying data in a file*

- *Splitting a file: split*
- *Sorting files: sort*
- *Character string conversion: tr*

■ *Editing files with criteria*

- *Editing a file from the end: tail*
- *Editing a file from the beginning: head*
- *Count the lines in a file: wc*
- *Editing fields in a file: cut*
- *Merging files: paste*
- *Extraction of common lines from two files: comm*

■ *Comparing files*

- *Compare two files: cmp*
- *Editing differences between two files: diff*

- *grep and find commands*

- *Regular expressions*
- *grep command*
- *find command*

- **Process management**

- *Process characteristics*
- *Viewing processes*
- *Process management commands*
 - *Running a process in the background*
 - *Stopping a process*

- **Introduction to administration**

- *Installing a Unix system (Linux)*
- *User account management*

Bibliographie

- ❑ Jean Marie Rifflet, la programmation sous Unix, 3^{ième} édition, *Ediscience 2001*.
- ❑ Jean-Paul Armspach, Pierre Colin et Frédérique Ostré-Waerzeggers, Linux : Initiation et utilisation, Dunod 2000.