

Principle and Application of Linux

Contacts: 4L

Credits: 4

Prerequisites: C programming

Course Description: This course covers both user-level Linux applications and kernel-level Linux fundamentals. At user-level the following topics will be discussed:

- Command Line Interface (CLI)
- Bash scripting
- Development environment under Linux
- System management
- Network management

At kernel-level, we will see how Linux solves the following OS design issues.

- | | |
|-------------------------|----------------------|
| • System bootstrapping | • Process management |
| • Memory addressing | • CPU scheduling |
| • Interrupt handling | • Ext2 file system |
| • System call interface | • I/O management |

Textbook and References:

- [1] M. Cooper, *Advanced Bash Scripting Guide 5.3 Volume 1*, Lulu.com, **2010**.
- [2] R. Hertzog, R. Mas, *The Debian Administrator's Handbook*, Freexian SARL, **2015-10**.
- [3] T. D. K. H. Project, *Debian Linux Kernel Handbook*, Free software Foundation, **2013**.
- [4] D. Bovet, M. Cesati, *Understanding The Linux Kernel*, 3rd ed., O'Reilly, **2005**.
- [5] A. S. Tanenbaum, *Modern Operating Systems*, 3rd ed., Prentice Hall Press, **2007**.