

Course Specification Document

Title	Introduction to Linux
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Credits	2 ECTS
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Aims	This course aims to provide the student with the theoretical knowledge and practical skills necessary to effectively use Linux operating system and its associated tools through the command-line interface or the graphical interface and to integrate the concepts to create useful programs at the system level. It also aims to encourage students to explore the open source community.
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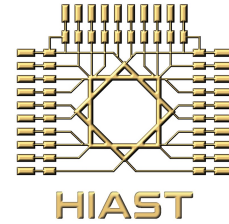
Intended learning outcomes

On successful completion of this course, the student will be able to:

- Recognize the concept of Linux operating system, its history and the reasons for its increasing use in many technical fields.
- Understand the concept of open-source software.
- Understand the fundamentals of Linux, its features and use the tools available within it.
- Familiarize himself with the tools and resources that assist in gaining further expertise in working with Linux.

Syllabus

- **Introduction to Linux System:** Overview of Linux system and its history, virtualization, installing the virtual machine and Mint system, connecting to the virtual machine via SSH.
- **Basics of usage:** Logging in, using the command-line interface, adapting to graphical system interfaces.
- **Executing commands and getting help:** Executing basic commands using tools and resources available within the system for assistance.
- **File system overview:** Hierarchy and structure of the file system, managing files and directories (moving, copying, etc.).
- **Users and permissions:** Linux security model, user and group management, permission management.
- **Handling text files:** Input, output, and redirection, extracting, analyzing, and modifying text information.
- **Text editors:** Vim text editor, nano text editor.
- **Processes and their management:** Viewing and managing processes, job control tools.
- **Compression and archiving:** File archiving, file compression.



- **Shell Script programming:** Shell file structure, variables and input parameters, conditional statements and loops, functions, external programs, user interaction.
- **Using the git version control system:** Creating repositories, uploading source files to the repository, managing changes, working with various branches.