

Unix-like Operating Systems

Course notes

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- Course information
- Evaluation
- Course contents
- Preparation for tests
 - University servers fray1 a fray2
 - Windows Subsystem for Linux (WSL)
 - Virtual machine
 - Dual boot

- **Course materials**

- You can find everything on the website courses.fit.cvut.cz/BIE-UOS

- **Full-time teaching**

- Taking place in the FIT CTU classrooms according to [the schedule](#)
- Lectures/tutorials will be streaming/recorded as support for students with Covid/in quarantine (this is not online teaching)
- Links will be published on the course page

- **Communication with teacher**

- Primarily via school email.
- My email is trdlicka@fit.cvut.cz.
- Information about teachers can be found on the page usermap.cvut.cz

- **The course ends with a graded assessment**

- The student **collects the points during the semester** through **tests and tasks**.
- At the end of the semester, the points are added up and the student gets/does not get a credit with the appropriate grade, see. courses.fit.cvut.cz/BIE-UOS.

- **Tests during the semester**

- **Small tests**

- They will take place at the beginning of each seminars via [LearnShell](#).
- The test will take about 5–10 minutes.
- The student can a total of a maximum of **20 points**.

- **Two big tests**

- The student can get a total of a maximum of **2x40=80 points**.
- The implementation of these tests will depend on COVID-19 restrictions.

- **Tasks**

- The student can get a total of a maximum of **3 points**.
- Tasks will be gradually published during the semester.

- **BI-ULI – Introduction to Linux**

- Optional e-learning course, where students can get another 2 credits for similar knowledge as in BIE-UOS.
- Course information is on the website courses.fit.cvut.cz/BI-ULI/en

Shell programming 1 =

Unix (20%) + shell (25%) + commands (50%) + programming (5%)

- **Course contents**

- See courses.fit.cvut.cz/BIE-UOS

success (good knowledge) = theory (40%) + practice (60%)

● Theory

- The student will understand the theoretical information from lectures and exercises.
- Understanding \neq learn by heart
 - yes, I have to remember, for example, the names of the commands and what they do
 - but I can find details, for example, using commands `help`, `man` or `info`.

● Practice

- The student **will personally try out** the described examples **in the command line**.
 - verify that he has understood everything correctly,
 - can easily modify a known solution for a similar problem,
 - can solve problems efficiently and quickly.

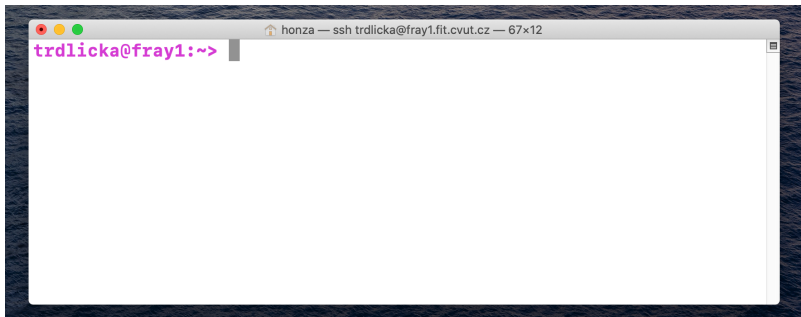
● Where can I find more examples for practice?

- On the subject page in the tab [Homeworks](#)
- How do you use these examples?
 - 1 Try to solve the example yourself first.
 - 2 If this is not possible, try to find inspiration in the lecture/exercise materials.
 - 3 If that doesn't help either, then look for a solution.

Preparation for tests

- **Where can I find the command line and what is it?**

- 1 I will log in to a Unix-like operating system (Linux, MacOS, Solaris,...).
- 2 I start the terminal application.



• Properties

- Each student has an account set up on these servers.
 - Password is set to **initial system password** which you will find on [User's ICT profile](#).
 - After logging in, you can change the password in the terminal with the command `passwd`.
 - Computers are available 24/7 via the public names `fray1.fit.cvut.cz` and `fray2.fit.cvut.cz` using the Secure Shell protocol.
 - These servers run the Solaris operating system on Sparc processors.
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- **The student can log in from any system** (MS Windows, Linux, MacOS, Android, iOS, iPadOS,...) **using ssh client** (e.g. [PuTTY](#) in MS Windows or `ssh` in MS Windows 10 and Unix-like OS,...).

Windows Subsystem for Linux (WSL)

- MS Windows 10 supports the installation of Linux directly within itself.
 - For detailed instructions, see [Windows Subsystem for Linux Installation Guide for Windows 10](#).
- Which Linux distribution to install?
 - In FIT classrooms, there is
 - Linux [Ubuntu 20.04](#),
 - Desktop [Cinnamon](#) ([Ubuntu 20.04 Cinnamon Desktop installation](#)).
- Properties
 - For MS Windows 10 users only.
 - Limited types of OS that can be installed.

- Using virtualization software ([VirtualBox](#), [VMware Workstation Player](#),...) you create a virtual machine and install the appropriate OS on it.
- Properties
 - We can install "any OS" in "any OS" (MS Windows, Linux, MacOS, ...).
 - Relatively small resource requirements (e.g. 10GB of disk space, 4 GB of memory, 2 CPU cores for Linux).

- We have different OS installed in different partitions of the disk.
- When starting the computer, we choose which OS we want to boot.
- More difficult to install, possible problems with drivers, ...