

# Security – Practical Work

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**MASTER** IN  
COMPUTER  
SCIENCE

**unine**  
UNIVERSITÉ DE  
NEUCHÂTEL

# Today's agenda

1. General administrative information
2. General information for the assignments
3. Infrastructure for assignments

# Registration

Make sure that you are registered for this lecture:

- Ilias  
`https://ilias.unibe.ch/goto\_ilias3\_unibe\_crs\_1841350.html`
- IS-Academia (deadline 14 October)  
`https://www-academia.unine.ch/aai/imoniteur\_pbol/ssoLogins.htm`

## Contact

- Forum on Ilias
  - Preferred method
- In class
- By e-mail
  - Teaching assistant: `james.menetrey@unine.ch`
  - Course instructor: `herve.sanglard@unine.ch`
- Office (B124) or online
  - with the TA, on appointment only

## Two types of assignments

### Programming

Make a simple program that solves one security-related problem

- Usually work alone
- Free technological choice
  - I provide one (or more) *suggestion(s)*

### Server administration

Install and configure one or several Internet-facing standard service(s)

- Focus on security (obviously)
- Usually work in teams
- Done on machines we provide
  - Free technological choice
  - I provide one (or more) *recommendation(s)*

## Hand-in

- Deadlines generally on Wednesdays at 14:15
- List of expected artifacts specified in instructions
- Pack everything in one compressed archive
- Send through Ilias using “Upload File”

### Late hand-in

10 % penalty of total number of points, plus 20 % per day of delay

$$\text{penalty} = \left( 0.1 + 0.2 \times \frac{\text{delay in hours}}{24} \right) \times \text{total points}$$

## Demonstrations

Each assignment has to be demonstrated to the TA.

- Demonstrations are done in class or online
  - At the latest on the week that follows the deadline
- Order = submission order on Ilias
- No demonstration → grade 1 for assignment

# Grading

## **Final grade** *cf.*, Hervé Sanglard's slides

- 50 % oral exam
- 50 % assignments

## **Assignments grade**

- Multiple criteria
  - Valuation  $[0, 1]$
  - Weighted
- Weighted average of all assignments
- Sometimes, bonuses
- No rounding



## Assignments (tentative)

	Title	Type	Who
1.	Files integrity	Programming	Alone
3.	Encrypted tunnel	Programming	Team or alone
4.	Directory client	Programming	Alone
2.	Secure web server	Server administration	Team
5.	Secure e-mail server	Server administration	Team
6.	Firewall(s)	Server administration	Team
7.	End-to-end e-mail encryption and authentication	Optional	Alone

# Teams

You will work in teams for certain assignments.

**A team = 2 people**

You may work alone if there are enough resources for everyone

## Dedicated machines

For the duration of this lecture, a dedicated machine will be allocated to your team.

- Machines of the institute (physically in B109)
- 1 public IPv4 address per machine
- Ubuntu 18.04 LTS
- SSH access through bastion host
- Passwordless sudo access (beware!)

## Setup access to your dedicated machine

*As soon as you have found your teammate:*

1. Make sure you have the OpenSSH client installed on your machine
  - Ask for help if unsure!
2. Generate SSH key-pair or re-use existing one
3. Send SSH **public** key by e-mail to me
4. I send you back the instructions to log into your machine

Details can be found in companion document available on Ilias.