

**Cybersecurity (module 3 CFU)**  
**Web Security and Privacy (module 3 CFU)**

a.y. 2022-23.

*Outcomes will be sent via email within two weeks*

1. **TEXT IN NON-ENGLISH: 2 penalty points**
2. **UNREADABLE WRITING will be skipped**
3. **TEXT WRITTEN WITH A PENCIL will be skipped**
4. **All questions of an exercise QX can be answered with no more than one page of text. Be concise and focus on what a question is asking.**

**Q0: Write on your paper (or in Exam.net)**

- First name
- Last name
- Student ID

**Q1: Email systems [7.5 points]**

- Q1.1 [1.5 points]: Explain what MIME is and how it is used in the context of emails.
- Q1.2 [2.5 points]: Explain in detail what a receiving mail server does when a message is received if it is using DMARC.
- Q1.3 [3.5 points]: Present the main protocol steps followed by OpenPGP to: (a) sign a message, (b) decrypt a message.

**Q2: Web attacks and mitigations [7.5 points]**

- Q2.1 [1.5 points]: Explain what the Same Origin Policy (SOP) is. Why do we need it?
- Q2.2 [3 points]: Describe the purpose of the cookie attributes, discussing how they can help mitigate or avoid specific attacks.
- Q2.3 [3 points]: Explain how Server-Side Request Forgery and Cross-Site Request Forgery work through concrete examples, presenting also possible mitigations.