

Cybersecurity



What is a BIP programme?

- Blended Intensive Programme – BIP
- Short and Intensive Programmes
- Online cooperation and a physical mobility
- Promote and use innovative ways of learning and teaching, research-based and challenge-based learning.
- BIP are expected to address transnational and transdisciplinary teams

Partners



Polytechnic Institute of Bragança, Portugal



Erasmus partners



University of León, Spain



Hochschule Bremen, City University of Applied Sciences, Germany



Cybersecurity BIP

Title: Cybersecurity	ECTS credits: 6
Responsible: Tiago Pedrosa E-mail: riftman@ipb.pt	Virtual component: Starting 07/04/2026, ending: 05/06/2026
Partners: Polytechnic Institute of Bragança (Portugal) – Tiago Pedrosa Universidad de León (Spain) - Miguel Prada Hochschule Bremen, City University of Applied Sciences (Germany) – Evren Eren and Martin Hering-Bertram	Physical component: Starting 08/06/2026, ending: 12/06/2026
Contents: Fundamentals of system and network security. Concepts of cryptography. Vulnerabilities and attacks. Industrial Cybersecurity. Mechanisms for control, containment, detection and prevention. Systems and networks hardening. Security audit and penetration testing.	

In English

Invited Lectures

- Miguel Prada @ University of León
- Evren Eren @ Hochschule Bremen, City University of Applied Sciences

Components

- **Virtual Component**
 - Starting: 07/04/2026
 - Ending: 05/06/2026
 - 1 block of 4 hours per week of contact
 - Classes are a mix of:
 - explanation of theoretical concepts
 - Some practical demos
 - And activities to be done
 - + Labs (Labtainers)
 - Will use IPB elearning platform to the assignments, homeworks and support for the BIP
 - Teams for synchronous classes
 - Support also via discord
- **Physical component:**
 - Starting 08/06/2026
 - Ending: 12/06/2026
 - **Second practical assignment**
 - A CTF 😊 with walkthrough submission

Virtual Schedule

Wednesdays from 14:00 to 18:00 Portugal Time

 Porto, Portugal * WEST (UTC +1)	Wed,	14:00		⋮
 Madrid, Spain * CEST (UTC +2) 1 hour(s) ahead	Wed,	15:00		⋮
 Berlin, Germany * CEST (UTC +2) 1 hour(s) ahead	Wed	15:00		⋮
 Bratislava, Slovakia * CEST (UTC +2) 1 hour(s) ahead	Wed,	15:00		⋮
 Vilnius, Lithuania * EEST (UTC +3) 2 hour(s) ahead	Wed	16:00		⋮

Physical component

Weekday	Monday	Tuesday	Wednesday	Thursday	Friday
Schedule	14:00 - 18:00	9:00- 13:00	14:00 – 18:00	9:00 - 13:00	9:00 - 13:00
Notes	CTF activities.	Exam & CTF activities.	CTF activities.	CTF activities.	CTF activities.

ECTS Guide – Learning Outcomes

At the end of the course unit the learner is expected to be able to:

1. Recognize the importance of security issues in computer systems and networks;
2. Identify the main types of vulnerabilities, attack vectors against networks and systems, and solutions to minimize them;
3. Install, configure and manage security solutions and mechanisms;
4. Harden Systems and Networks;
5. Conduct security audits and intrusion tests on systems and networks.

ECTS Guide – Learning Outcomes

- Team CTF - 30% (In teams)
- Laboratory Tasks – 30 % (Individual)
- HomeWorks - 15% (Practical tasks. Individual)
- Final Written Exam - 25% (True and False questions)

ECTS Guide – Prerequisites

Before the course unit the learner is expected to be able to:

- Demonstrate basic knowledge of systems and networks;
- Apply basic knowledge in installing Linux Operative Systems;
- Operate the Linux Command Line.

Are you the one ? Welcome to Cybersec BIP@IPB ☺



How to apply?

- Apply at <https://surveys.ipb.pt/index.php/848255?lang=en>
 - Till 02/03/2026
- Your university may support your mobility within the Erasmus programme
- You need to find a place to stay in Bragança for the physical week, but the international office @ IPB can suggest you some places
- You can contact:
 - Me (rftman@ipb.pt) for questions about the BIP ECTS guide and class related
 - IPB International Office (sylwia@ipb.pt) for administrative questions and support for the physical week
 - Your university contacts for this BIP and your international office

