Syllabus

Course Description

Course Title	Cybersecurity
Course Code	46093
Course Title Additional	
Scientific-Disciplinary Sector	INFO-01/A
Language	English
Degree Course	PhD Programme in Advanced-Systems Engineering
Other Degree Courses (Loaned)	
Lecturers	Prof. Barbara Russo, Barbara.Russo@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/2242 Dott. Diaeddin M A Rimawi, Diaeddin.Rimawi@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/46519
Teaching Assistant	
Semester	First semester
Course Year/s	1
CP	3
Teaching Hours	30
Lab Hours	0
Individual Study Hours	15
Planned Office Hours	9
Contents Summary	The course introduces fundamental cybersecurity concepts and red-team methodologies, enabling doctoral candidates to identify vulnerabilities and simulate representative attacks in controlled settings. Through hands-on laboratory activities, students gain practical experience in red-team exercises and learn to apply security analysis to advanced systems and their research projects. As cybersecurity is a cross-cutting concern across the ASE

	programme's areas of specialisation, the course supports interdisciplinary research and knowledge transfer.
Course Topics	The course introduces the fundamental concepts of cybersecurity and the methods and tools used to perform red-team activities. Students will learn how to identify attack surfaces, discover vulnerabilities, simulate representative attacks. The laboratory will enable the students to practice on red-teams activities.
Keywords	cybersecurity, attacks, red-team
Recommended Prerequisites	
Propaedeutic Courses	
Teaching Format	In person lecture and laboratory activities
Mandatory Attendance	75% of lectures and 75% of labs
Specific Educational Objectives and Learning Outcomes	The course provides doctoral candidates with the tools to integrate security requirements into the design and evaluation of advanced systems and their research projects. Since cybersecurity is a cross-cutting concern across the ASE programme's different areas of specialisation, the course promotes an interdisciplinary approach, in line with unibz's strategy to strengthen research quality and knowledge transfer to the local community.
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	Paper presentation and lab assignment
Evaluation Criteria	per presentation 50% lab assignment 50%
Required Readings	slides, manuals and papers provided by the teacher and the lab instructor
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Quality education