

COURSE DESCRIPTION – ACADEMIC YEAR 2018/2019

Course title	System Security
Course code	76006
Scientific sector	ING-INF/05
Degree	European Master in Software Engineering (LM-18)
Semester	2
Year	1
Credits	8
Modular	No
Total lecturing hours	48
Total lab hours	24
Total exercise hours	--
Attendance	Recommended especially for the labs.
Prerequisites	Students should have a solid mathematical foundation and be familiar with basic programming concepts, data structures and algorithms. These prerequisites are covered in any Bachelor degree in Computer Science.
Course page	https://ole.unibz.it/
Specific educational objectives	<p>The course belongs to the type "caratterizzanti – discipline informatiche"- "Advanced Topic in Software Engineering" (EMSE - ATSE).</p> <p>The main aim of this module is to provide an introduction to the field of information security. The students learn about the technical as well as the management side of security in information systems. They acquire knowledge about fundamental principles of security and also about practical approaches to securing information systems.</p>
Lecturer	Andrea Molinari
Contact	Piazza Domenicani 3, andrea.molinari@unibz.it
Scientific sector of lecturer	ING-INF/05
Teaching language	English
Office hours	By previous arrangement via e-mail
Lecturing Assistant (if any)	El Ioini Nabil
Contact LA	Piazza Domenicani 3 , Room 1.08, nelioini@unibz.it
Office hours LA	By previous arrangement via e-mail
List of topics	<ul style="list-style-type: none"> • Cryptography • Cryptographic Protocols • Network Attack and Defense • Administrative Issues • Security Protocols • Social Engineering • Usability • Risk Assessment
Teaching format	Frontal classroom lecture plus lab sessions

<p>Learning outcomes</p>	<p>Knowledge and understanding</p> <ul style="list-style-type: none"> • Know the main methods and techniques for designing, creating, and maintaining software products and services. • Understand methods of mathematics and of statistics that support Information Technology and its applications. <p>Applying knowledge and understanding</p> <ul style="list-style-type: none"> • Be able to integrate, adapt, and improve organizational and business strategies with Information Technology. • Be able to design and execute experimental analyses on information systems or their components. <p>Making judgments</p> <ul style="list-style-type: none"> • Must have the ability to independently select the documentation required to keep abreast of the frequent technological innovations in the field by using a wide variety of documentary sources: books, web, magazines. <p>Communication skills</p> <ul style="list-style-type: none"> • Must be able to coordinate the work of a project team and to interact positively with members of the group. <p>Learning skills</p> <ul style="list-style-type: none"> • Must be able to able to independently keep up to date with developments in the most important areas of Computer Science.
<p>Assessment</p>	<ul style="list-style-type: none"> • Project work to test knowledge application skills and communication skills • Written exam with verification questions and questions to test knowledge application skills
<p>Assessment language</p>	<p>English</p>
<p>Assessment typology</p>	<p>Monocratic commission</p>
<p>Evaluation criteria and criteria for awarding marks</p>	<ul style="list-style-type: none"> • 30% project work • 70% written examples <p>Relevant for assessment 1: ability to work in teams, skill in applying knowledge in a practical setting, ability to summarize in own words.</p> <p>Relevant for assessment 2: clarity of answers, ability to recall principles and methods used in system security, skill in applying knowledge such as testing the security of systems</p>
<p>Required readings</p>	<p>Materials in the form of slides and scientific papers provided by the teacher</p>
<p>Supplementary readings</p>	<ul style="list-style-type: none"> • Principles of information security 6th edition, Michael E. Whitman, Herbert J. Mattord, ISBN 978-1337102063 • CompTIA Security+ Guide to Network Security Fundamentals 6thEdition, Mark Ciampa ISBN 978-1337288781
<p>Software used</p>	<p>Provided by teacher and tutor during lectures / lab sessions</p>