



UNIVERSITÀ DI PAVIA

Anno Accademico 2020/2021

OBJECT ORIENTED PROGRAMMING AND SOFTWARE ENGINEERING

Enrollment year	2018/2019
Academic year	2020/2021
Regulations	DM270
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRONIC AND COMPUTER ENGINEERING
Curriculum	Informatica
Year of study	3°
Period	Annual (28/09/2020 - 14/06/2021)
ECTS	12
Language	Italian

The activity is split

503037 - **SOFTWARE ENGINEERING**

507286 - **OBJECT ORIENTED PROGRAMMING**



SOFTWARE ENGINEERING	
Enrollment year	2018/2019
Academic year	2020/2021
Regulations	DM270
Academic discipline	ING-INF/05 (DATA PROCESSING SYSTEMS)
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRONIC AND COMPUTER ENGINEERING
Curriculum	Informatica
Year of study	3°
Period	2nd semester (08/03/2021 - 14/06/2021)
ECTS	6
Lesson hours	70 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	CUSANO CLAUDIO (titolare) - 3 ECTS MUSCI MIRTO - 3 ECTS
Prerequisites	Knowledge of procedural and object-oriented programming. Basic knowledge of the Java programming language.
Learning outcomes	The objective of the course is the understanding of the main issues concerning the design and the development of medium and large software projects.
Course contents	The following topics are addressed:- software development processes;- analysis of requirements;- object-oriented design principles;- software architectures;- distributed systems;- verification and validation techniques.
Teaching methods	Lectures (hours/year in lecture theater): 35 Practical class (hours/year in lecture theater): 0

	<p>Practicals / Workshops (hours/year in lecture theater): 35</p> <p>Lectures are given having as reference slides and other material provided by the lecturer.</p> <p>The workshops take place in the laboratory and concern the development (individually or in team) of a few software applications that illustrate the topics shown during the lectures.</p>
Reccomended or required readings	<ul style="list-style-type: none"> - Ian Sommerville. Software Engineering - Craig Larman. Applying UML and Patterns
Assessment methods	<p>The evaluation includes the presentation of a team project and the discussion of the topics presented during the lectures.</p> <p>A positive assessment of the project is a requirement for the access to the final oral exam.</p>
Further information	
Sustainable development goals - Agenda 2030	<p>\$lbl legenda sviluppo sostenibile</p>



OBJECT ORIENTED PROGRAMMING

Enrollment year	2018/2019
Academic year	2020/2021
Regulations	DM270
Academic discipline	ING-INF/06 (ELECTRONIC AND INFORMATION BIOENGINEERING)
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRONIC AND COMPUTER ENGINEERING
Curriculum	Informatica
Year of study	3°
Period	1st semester (28/09/2020 - 22/01/2021)
ECTS	6
Lesson hours	60 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	NOCERA ANTONINO - 6 ECTS
Prerequisites	Basic programming skills provided by the first-year course.
Learning outcomes	<p>The course provides a general introduction to the Object Oriented programming and to the methodologies used in software conceptual modeling.</p> <p>Basic principles for the analysis, design and implementation of software applications are provided. Lectures are alternated with exercises and discussions on source code parts.</p> <p>The course aims to prepare the student to the development of real Java applications based on the object oriented paradigm.</p>
Course contents	<p>The course covers the following topics:?</p> <ul style="list-style-type: none">- Object Oriented Programming (OOP).?- The Java programming language.?

	- The UML Notation.
Teaching methods	<p>Lectures (hours/year in lecture theatre): 38</p> <p>?Practical class (hours/year in lecture theatre): 0</p> <p>?Practicals / Workshops (hours/year in lecture theatre): 22</p>
Reccomended or required readings	<p>The programming language used in this course is Java. To learn the syntax of the language it is suggested to refer to the online documentation and to adopt one of the following:?</p> <p>- Walter Savitch. Programmazione di base e avanzata con Java. PEARSON</p> <p>?- Arnold Ken, Gosling James, Holmes David. Il linguaggio Java. Manuale ufficiale. Pearson Education Italia</p> <p>The other topics covered in this course can be studied using the following:</p> <p>?- Craig Larman. Applying UML and Patterns</p>
Assessment methods	<p>The evaluation of the course includes two individual tests. The preliminary test verify the theoretic knowledge about Object Oriented Programming and about the Java language. The second test requires to solve a practical programming problem in the laboratory using the Java language. The final score is obtained as weighted average of the score obtained in the test exam and the score obtained in the practical programming.</p>
Further information	
Sustainable development goals - Agenda 2030	\$lbl legenda sviluppo sostenibile