COURSE OUTLINE

GENERAL

SCHOOL	Sciences and Engineering		
ACADEMIC UNIT	Computer Science		
LEVEL OF STUDIES	1st Cycle		
COURSE CODE	COMP-119	**SEMESTER**	Spring
COURSE TITLE	Collaborative Software Development		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	2.5	6
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special Background
PREREQUISITE COURSES:	COMP-117
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	
COURSE WEBSITE (URL)	

LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

After completion of the course students are expected to be able to:

- develop robust and high-quality source code
- utilize source code version management tools collaboratively
- employ bug-tracking tools for application development
- develop unit tests and use tools for automatic testing
- apply the full life-cycle of software development within a team
- integrate AI tools, such as Copilot, to enhance productivity and quality in software development.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas

Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
……
Others…
…….

Search for, analysis and synthesis of data and information, with the use of the necessary technology

Adapting to new situations

Decision-making

Working independently

Team work

Project planning and management

Criticism and self-criticism

Production of free, creative and inductive thinking

SYLLABUS

- Introduction to tools for source code version management in collaborative software development.
- Leveraging source code version management tools throughout the software development lifecycle.
- Best practices for developing high-quality, robust source code.
- Introduction to tools for source code bug management.
- Navigating the complete workflow for bug management in a collaborative setting.
- Developing unit tests and integrating them into the software development lifecycle.
- Introduction to AI tools, such as Copilot, for software development.
- Using AI tools to efficiently develop higher-quality source code.
- Employing AI tools for automatic generation of documentation, unit tests, and code snippets.

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	*Use of ICT in teaching / Χρήση ΤΠΕ* *Communication with students / Επικοινωνία με Φοιτητές*
TEACHING METHODS	

<table>
<tr>
<td><em>The manner and methods of teaching are described in detail.
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.

The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</em></td>
<td>
<table>
<tr><th><strong><em>Activity</em></strong></th><th><strong><em>Semester workload</em></strong></th></tr>
<tr><td>Lectures</td><td>35</td></tr>
<tr><td>Preparation</td><td>40</td></tr>
<tr><td>Homework and quizzes</td><td>50</td></tr>
<tr><td>Exam preparation</td><td>23</td></tr>
<tr><td>Final exam</td><td>2</td></tr>
<tr><td>Course total</td><td><strong><em>150</em></strong></td></tr>
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<td><strong>STUDENT PERFORMANCE EVALUATION</strong>
<em>Description of the evaluation procedure

Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</em></td>
<td>Final Exam, Midterm Exam, Assignments, and Quizzes</td>
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ATTACHED BIBLIOGRAPHY

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Introduction to C++ Programming and Data Structures, 5th Ed.	Daniel Y. Liang	Pearson	2022	978-0137391349
Software Development Lifecycle: Lecture Notes	Prof. Harald Gjermundrød	Available on course page		

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Mastering GitHub Copilot: AI-Powered Development for Modern Coding	Innoware PJP	Independently published	2024	979-8343975147
Practical Development Environment	Matthew B. Doar	O’Reilly	2005	0-596-00796-5