ESIROI
ÉCOLE D'INGÉNIEURS
UNIVERSITÉ DE LA RÉUNION

DEPARTMENT : *CPI*
SEMESTER : *S4*

IDENTIFICATION

Course code : E2CP4I2
ECTS : 2

DURATION

Lectures :	10
Tutorial classes :	12
Labs :	12
Total :	34

Project :
Personnal work :

ASSESSMENT

2 Written exams (2h/2h) + 1 Lab report

TEACHING MATERIALS

LANGUAGE

English

CONTACT

Denis PAYET
denis.payet@univ-reunion.fr

Modifié le : 14 juillet 2026

UE : INFORMATIQUE

COURSE : Software Development

SCOPE OF THE COURSE

OBJECTIVES

This course aims to provide students with essential methodological and practical foundations for designing, implementing, and maintaining high-quality software applications. By the end of this course, students will be able to integrate into a standard software development process, use collaborative tools, and produce more organized, tested, and maintainable code, thus laying the groundwork for their future careers as computer engineers.

COMPETENCE AND SKILLS

- **Analyze** a requirement and **draft** a functional specification document.
- **Design** the software architecture and **model** the main components of the application.
- **Develop** and **version** the source code using a version control system such as `Git`.
- **Test**, **debug**, and **validate** the software through continuous integration tools (`CI/CD`).
- **Deploy** the application in a production environment and **document** the deployment process.

PROGRAM

- Introduction to the software lifecycle : from requirement analysis to production deployment.
- Requirement analysis and drafting of a functional specification document.
- Applying software design principles (e.g., modularity, reusability, separation of concerns) and basic architecture.
- Mastering modern developer tools and environments (version control systems like Git, integrated development environments - IDEs).
- Developing initial software features (implementation, unit testing).
- Raising awareness of user experience to design relevant UIs that align perfectly with the intended functionalities.
- Error handling, input validation, and coding best practices.
- Synthesis project : full development, production deployment, and final documentation.

BIBLIOGRAPHY

REQUIREMENTS

Programming in C and C++