

# Génie logiciel et gestion de projets

## Lecturer

Frédéric PLUQUET (Coordinator)

## Course mnemonic

INFO-F307

## Language(s) of instruction

French

## Course period

Second term

## Course content

This course digs into the fundamental concepts of software engineering and project management. The central theme of the course is on flexible, reliable and maintainable software. The realization of a software project by the students is a necessity for this course. The theoretical part of the course will support the project and allows the students to accomplish the project successfully.

The theoretical part is divided into three themes: Software Processes, Project Management and Program Design. The first theme deals with agile methods, quality assurance, configuration management and systematic testing. The second theme introduces the basic principles of project management, i.e., risk management, project objectives, project scope, planning and planning problems and techniques for estimation. A third theme is devoted to the introduction of design patterns and refactoring techniques. Each theme is concluded by a seminar presented by a speaker working in an IT company.

## Objectives (and/or specific learning outcomes)

The final objectives of the course are:

- > The student needs to be able to design and develop a software project together with other students using an agile methodology.
- > The student needs to be able to defend and present the different design choices and the code
- > The student needs to be able to summarize, enumerate and exemplify the general software engineering principles, the software engineering processes, the project management principles, design patterns, refactorings, design, tests and software engineering and project management quality.

## Pre-requisites and co-requisites

### Pre-requisites courses

INFO-H2001 | Programmation orientée objet | 5 crédits

### Co-requisites courses

INFO-F204 | Analyse et méthodes | 5 crédits

### Courses having this one as co-requisit

INFO-F308 | Projets d'informatique 3 transdisciplinaire | 10 crédits and MEMO-H504 | Mémoire de fin d'études en Informatique | 20 crédits

## Teaching method and learning activities

The start of the course is very intensive. At the very beginning of the academic year, there are practical sessions to explain the goal of the project. Students will receive a document describing the organisation of the project. All other practical sessions are devoted to monitoring the progress of the projects and to answer questions. Before each practical sessions, students will be demanded provide the requested documents. During the sessions, students will present their interim results. These results will be evaluated and criticized.

With regard to the theoretical part, these sessions heavily rely on student interactivity and the principle of active learning is used.

## References, bibliography and recommended reading

- > Henrik Christensen, Flexible, Reliable Software using Patterns and Agile Development, CRC Press, 2010.
- > Eric J. Braude and Michael E. Bernstein, Software Engineering, Modern Approaches, Second Edition, Wiley 2011.
- > Sommerville, Software Engineering, Eight Edition, Addison Wesley, 2006.
- > E. Gamma and R. Helm and R. Johnson and J. Vlissides, Design Patterns: Elements of Reusable Object-Oriented Software, Addison Wesley, 1994.

## Other information

### Contact(s)

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## Evaluation method(s)

Other

### Evaluation method(s) (additional information)

There are two evaluation times. First, a final defense of the project is mandatory. This defense will consist of an oral presentation

of the project design and a demonstration of features. Questions about code, design and testing will be asked to each member of the group. Secondly, an individual assessment is planned. Each student must be able to defend his part in the project and must be able to answer questions about the content of the course. Thus it will be possible to give each member an individual score.

### Determination of the mark (including the weighting of partial marks)

The quotation is as follows: 15/20 for the project and 5 / 20 for the theoretical part. Because there is no second session for the project, and if the score of the project is less than 5 / 20 there is no need to do a second session.

## Programmes

### Programmes proposing this course at the faculty of Sciences

BA-INFO | Bachelor in Computer science | unit 3

### Programmes proposing this course at the Brussels School of Engineering

BA-IRCI | Bachelor in Engineering Sciences | option Bruxelles/unit 3

