## Content

| Course Code | Course Name             | Semester | Theory | Practice | Lab | Credit | ECTS |
|-------------|-------------------------|----------|--------|----------|-----|--------|------|
| INF114      | Algorithms and Advanced | 2        | 3      | 0        | 2   | 4      | 5    |
|             | Programming             |          |        |          |     |        |      |

| Prerequisites          |  |
|------------------------|--|
| Admission Requirements |  |

| Language of Instruction | French  |
|-------------------------|---|
| Course Type             | Compulsory  |
| Course Level            | Bachelor Degree   |
| Objective               | In this course, the fundamental concepts covered in the first class course "Introduction to Programming" are consolidated. Particularly the topics of pointers, dynamic memory allocation and management, file operations, introduction to algorithm analysis and introduction to data structures are elaborated. In the course practice (laboratory) C programming language and the Linux operating system are used. |
| Content                 | <ol> <li>Introduction and Reminders</li> <li>Advanced Variable Types</li> <li>C Preprocessor, Libraries</li> <li>Pointers</li> <li>Dynamic Memory Management</li> <li>Pointers, Arrays and Functions</li> <li>String Operations</li> <li>Introduction to Data Structures</li> <li>Advanced Data Structures</li> <li>Algorithm Analysis</li> </ol>   |
| References              | <ol> <li>Course slides and notes</li> <li>Reference Books</li> <li>21st Century C, Ben Klemens, O'Reilly Media, 978-1-449-32714-9, 2013</li> <li>Understanding and Using C Pointers, Richard Reese, O'Reilly Media, 978-1-449-34418-4, 2013</li> </ol>  |

## Theory Topics

| Week | Weekly Contents |  |  |  |  |
|------|-----------------|--|--|--|--|
|------|-----------------|--|--|--|--|