

## Content

| Course Code             | Course Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Semester | Theory | Practice | Lab | Credit | ECTS |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|----------|-----|--------|------|
| INF112-B                | Introduction to Programming                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1        | 2      | 0        | 2   | 3      | 4    |
| Prerequisites           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |        |          |     |        |      |
| Admission Requirements  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |        |          |     |        |      |
| Language of Instruction | French                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |        |          |     |        |      |
| Course Type             | Compulsory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |        |          |     |        |      |
| Course Level            | Bachelor Degree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |        |          |     |        |      |
| Objective               | <p>This course aims to provide students with general programming and algorithmic thinking skills through the fundamental concepts of the C programming language. In this context, the main topics covered include an introduction to programming with C, structured program development, control structures, functions, input/output operations, arrays, file handling, and pointers.</p> <p>Students have the opportunity to apply the knowledge they acquire in the course through programming exercises conducted in the laboratory as well as through assignments.</p>                                                                                                  |          |        |          |     |        |      |
| Content                 | <p>Week 1 – Basic concepts and introduction to C programming<br/>Week 2 – Variable types, initialization, and type conversions<br/>Week 3 – Loops and control structures<br/>Week 4 – Functions<br/>Week 5 – Scope of variables and function return types<br/>Week 6 – One-dimensional and multi-dimensional arrays<br/>Week 7 – Pointers<br/>Week 8 – Midterm exam<br/>Week 9 – Character arrays and string operations<br/>Week 10 – Structures<br/>Week 11 – Dynamic memory management<br/>Week 12 – Formatted file reading and writing<br/>Week 13 – Character-based file reading and writing<br/>Week 14 – Program execution, debugging, and command-line arguments</p> |          |        |          |     |        |      |
| References              | <p>1. Notes: <a href="http://kikencere.gsu.edu.tr/course/view.php?id=17">http://kikencere.gsu.edu.tr/course/view.php?id=17</a><br/>2. H. M. Deitel &amp; P. J. Deitel, "C: How to Program"<br/>3. Ben Klemens, "21st Century C", O'Reilly Media</p>                                                                                                                                                                                                                                                                                                                                                                                                                         |          |        |          |     |        |      |

## Theory Topics

| Week | Weekly Contents                                  |
|------|--------------------------------------------------|
| 1    | Basic concepts and introduction to C programming |
| 2    | Variable types, initialization, type conversions |
| 3    | Loops and control structures                     |
| 4    | Functions                                        |
| 5    | Scope of variables, function return types        |
| 6    | One-dimensional and multi-dimensional arrays     |
| 7    | Pointers                                         |
| 8    | Midterm exam                                     |
| 9    | Character arrays and string operations           |
| 10   | Structures                                       |
| 11   | Dynamic memory management                        |
| 12   | Formatted file reading and writing               |
| 13   | Character-based file reading and writing         |

| Week | Weekly Contents                                          |
|------|----------------------------------------------------------|
| 14   | Program execution, debugging, and command-line arguments |