

## Content

| Course Code | Course Name                | Semester | Theory | Practice | Lab | Credit | ECTS |
|-------------|----------------------------|----------|--------|----------|-----|--------|------|
| MAT101      | Single Variable Analysis I | 1        | 3      | 2        | 0   | 5      | 8    |

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

|                         |  |
|-------------------------|--|
| Language of Instruction | French   |
| Course Type             | Compulsory   |
| Course Level            | Bachelor Degree  |
| Objective               | To build, with appropriate rigour, the foundations of calculus and along the way to develop the skills to enable us to continue studying mathematics   |
| Content                 | Course syllabus : Real Numbers, Sequences, Topology of $\mathbb{R}$ , Continuity, Limits   |
| References              | <ul style="list-style-type: none"><li>- Analyse 1re année : Cours et exercices avec solution Liret, François, Dominique Martinais</li><li>- Maths en pratique - 1re édition - A l'usage des étudiants Liret, Française</li><li>- First Course in Real Analysis, Sterling K.Berberian, Springer</li><li>- Mathématiques : tout-en-un : 1re année : cours et exercices corrigés : MPSI-PCSI Mathématiques : tout-en-un : 1re année : cours et exercices corrigés : MPSI-PCSI</li></ul> |

## Theory Topics

| Week | Weekly Contents            |
|------|----------------------------|
| 1    | Set, maps and the language |
| 2    | Real Numbers               |
| 3    | Real Numbers               |
| 4    | Midterm 1                  |
| 5    | Sequences                  |
| 6    | Sequences                  |
| 7    | Limits and Continuity      |
| 8    | Limits and Continuity      |
| 9    | Limits and Continuity      |
| 10   | Midterm 2                  |
| 11   | Derivation                 |
| 12   | Derivation                 |
| 13   | Parametric Curves          |
| 14   | Parametric Curves          |