

Content

| Course Code | Course Name | Semester | Theory | Practice | Lab | Credit | ECTS |
|-------------|---------------------|----------|--------|----------|-----|--------|------|
| ING220-B | Digital Electronics | 4 | 2 | 0 | 2 | 3 | 5 |

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

| | |
|-------------------------|--|
| Language of Instruction | French |
| Course Type | Compulsory |
| Course Level | Bachelor Degree |
| Objective | This course is a general introduction to digital design concepts. It aims to show the main differences between analog and digital processing of signals also teach the analysis and design of combinatory and sequential logic circuits. |
| Content | w1 Intoduction to digital systems w2 Numerical representation w3 Boolean algebra w4 Logic gates w5 Boolean function simplification w6 Combinatory systems w7 Analysis and synthesis of combinatory systems w8 Midterm w9 MSI circuits w10 Programmable logic devices w11 Synchronous sequential systems w12 Synchronous sequential system design w13 Counters and registers w14 Memory elements |
| References | "Digital Design", Morris Mano |

Theory Topics

| Week | Weekly Contents |
|------|---|
| 1 | Intoduction to digital systems |
| 2 | Review of digital systems |
| 3 | Boolean algebra |
| 4 | Logic gates |
| 5 | Boolean function simplification |
| 6 | Combinatory systems |
| 7 | Analysis and synthesis of combinatory systems |
| 8 | Midterm |
| 9 | MSI circuits |
| 10 | Programmable logic devices |
| 11 | Synchronous sequential systems |
| 12 | Synchronous sequential system design |

| Week | Weekly Contents |
|------|------------------------|
| 13 | Counters and registers |
| 14 | Memory elements |