



**BACHELOR'S DEGREE IN  
INDUSTRIAL TECHNOLOGIES FOR ENERGY AND DIGITAL TRANSITION  
DEGREE PROGRAMME COORTE 2024/25**

Course contents are available at this [link](#)

**1<sup>st</sup> year**

| Sem                          | Teaching course   | SSD*       | TAF* | Credits | h  |
|------------------------------|---|------------|------|---------|----|
| 1                            | Integrated Course: Principles of Mathematics and Physics                    |            |      |         |    |
|                              | - Module: Mathematics   | MAT/05     | A    | 3       | 24 |
| 1                            | - Module: Physics   | FIS/01     | A    | 3       | 24 |
| 1                            | Fundamentals of Computer Science, Data Analysis and Statistics              | ING-INF/05 | A    | 6       | 48 |
| 1                            | Integrated Course: Measurements and industrial automation                   |            |      |         |    |
|                              | - Module: Elements of measurement theory and industrial instrumentation     | ING-INF/07 | B    | 6       | 48 |
| 1                            | - Module: Basics on control systems   | ING-INF/04 | B    | 6       | 48 |
| 1                            | Fundamentals of applied thermodynamics                                      | ING-IND/11 | C    | 4       | 32 |
| 2                            | Fundamental of technical drawing and CAD for industrial applications        | ING-IND/15 | B    | 6       | 48 |
| <b>Electrical Curriculum</b> |   |            |      |         |    |
| 1                            | Integrated Course: Industrial Electrotechnics                               |            |      |         |    |
|                              | - Module: Fundamentals of Electrotechnics                                   | ING-IND/31 | B    | 4       | 32 |
| 1                            | - Module: Applications of Electrotechnics                                   | ING-IND/31 | B    | 2       | 16 |
| 2                            | Industrial electrical components and installations                          | ING-IND/33 | B    | 5       | 40 |
| 2                            | Electrical and electronic devices for energy conversion                     | ING-IND/32 | B    | 5       | 40 |
| 2                            | Integrated Course: IoT technologies and devices for industrial applications |            |      |         |    |
|                              | - Module: IoT protocols and virtualization                                  | ING-INF/03 | C    | 3       | 24 |
| 2                            | - Module: Radiolink in industrial environments                              | ING-INF/02 | C    | 3       | 24 |
| 2                            | - Module: Microcontroller-based platforms                                   | ING-INF/01 | C    | 2       | 16 |
| <b>Mechanical Curriculum</b> |   |            |      |         |    |
| 1                            | Fundamentals of Electrotechnics   | ING-IND/31 | C    | 4       | 32 |
| 2                            | Integrated Course: Fluid machinery and energy systems                       |            |      |         |    |
|                              | - Module: Fundamentals of fluid machinery                                   | ING-IND/08 | B    | 4       | 32 |
| 2                            | - Module: Fundamentals of energy systems                                    | ING-IND/09 | B    | 4       | 32 |
| 2                            | Fundamentals of Industrial Processes  | ING-IND/24 | B    | 6       | 48 |
| 2                            | Civil and industrial mechanical systems                                     | ING-IND/17 | B    | 6       | 48 |



**2<sup>nd</sup> year**

| Sem                          | Teaching course  | SSD*       | TAF* | Credits | h   |
|------------------------------|--|------------|------|---------|-----|
| 1                            | Computer Integrated Manufacturing Systems Laboratory                             |            | F    | 12      | 120 |
| <b>Electrical Curriculum</b> |  |            |      |         |     |
| 1                            | Technologies for Static Energy Conversion and Electric Drives                    | ING-IND/32 | B    | 6       | 48  |
| 1                            | Industrial electrical components and installations                               | ING-IND/33 | B    | 6       | 48  |
| 1                            | Laboratory of Static Converters for Industrial Applications                      |            | F    | 12      | 120 |
| 2                            | Electrical and building automation design laboratory                             |            | F    | 12      | 120 |
| 2                            | Laboratory of Electrical and Electronic Technologies for Industrial Applications |            | F    | 12      | 120 |
| <b>Mechanical Curriculum</b> |  |            |      |         |     |
| 1                            | Laboratory of heat and cooling systems   |            | F    | 6       | 60  |
| 1                            | Laboratory of fluid machinery and systems for renewable energy                   |            | F    | 12      | 120 |
| 1                            | Laboratory of materials and technologies for industrial applications             |            | F    | 6       | 60  |
| 2                            | Laboratory of mechanical systems engineering                                     |            | F    | 8       | 80  |
| 2                            | Laboratory of mechanical systems   |            | F    | 8       | 80  |
| 2                            | Laboratory of renewable energy for civil and industrial applications             |            | F    | 8       | 80  |

**3<sup>rd</sup> year**

| Sem | Teaching course                    | SSD* | TAF* | Credits | h   |
|-----|------------------------------------|------|------|---------|-----|
| 1   | Internship A                       |      | F    | 24      | 600 |
| 2   | Internship B                       |      | F    | 24      | 600 |
| 2   | Professional deontology and safety |      | F    | 5       | 40  |

**Additional credits to be acquired**

| Sem | Activity                           | SSD* | TAF* | Credits | h |
|-----|------------------------------------|------|------|---------|---|
|     | English Language Test <sup>1</sup> |      | E    | 3       |   |
|     | Elective activities <sup>2</sup>   |      | D    | 3       |   |
|     | Final Exam                         |      | E    | 3       |   |

**TOTAL CREDITS 180**

(1) The credits of European language level can be acquired:

- passing the English language test at B1 European level (CEFR) at Centro Linguistico d'Ateneo,
- showing appropriate certification of B1 European level (CEFR) knowledge.

(2) The elective activities must be consistent with the personal educational plan and they need approval by the Degree Programme Board.

**\*Abbreviations**

|     |                                |
|-----|--------------------------------|
| SSD | Scientific Disciplinary Sector |
| TAF | Type of Educational Activity   |