

**Study Plan for the Bachelor's Degree in Biotech Engineering for Health (Interclass L2/L8)****Enrolled in the 2026/2027 Academic Year****FIRST YEAR**

A mandatory 16-hour training course on 'Workplace Safety and Protection' is required before the start of laboratory activities.

| ACTIVITY NAME | Past Italian SSD Code (DM 4/10/2010) | New Italian SSD Code (DM 639/2024) | TAF L2 | TAF L8 | CFUs | Hours | SEM | COURSE TYPE | MANDATORY ACTIVITY | NOTES |
|---|---|---|-----------|-----------|-----------|-------|--------|-----------------------|-----------------------|-------|
| Calculus (Mod. Calculus I) | MAT/05 Analisi Matematica | MATH-03/A Analisi matematica | A1 | A1 | 6 | 48 | I | Dual-module course | YES | |
| Calculus (Mod. Calculus II) | MAT/05 Analisi Matematica | MATH-03/A Analisi matematica | A1 | A1 | 6 | 48 | II | | | |
| Algebra and Geometry | MAT/02 Algebra | MATH-02/A Algebra | A1 | A1 | 6 | 48 | I | | YES | |
| Fundamentals of Computer Science (Mod. Algorithms and Data Structures) | ING-INF/05 Sistemi di elaborazione delle informazioni | IINF-05/A Sistemi di elaborazione delle informazioni | A1 | A1 | 5 | 40 | II | Dual-module course | YES | |
| Fundamentals of Computer Science (Mod. Programming Fundamentals) | INF/01 Informatica | INFO-01/A Informatica | A1 | A1 | 4 | 32 | II | | | |
| Physics | FIS/01 Fisica Sperimentale | PHYS-01/A Fisica sperimentale delle interazioni fondamentali e applicazioni | A1 | A2 | 9 | 72 | I - II | | YES | |
| Chemistry (Mod. General and Inorganic Chemistry) | CHIM/03 Chimica Generale e Inorganica | CHEM-03/A Chimica generale e inorganica | A2 | A2 | 4 | 32 | I | Dual-module course | YES | |
| Chemistry (Mod. Organic Chemistry) | CHIM/06 Chimica Organica | CHEM-05/A Chimica organica | A2 | A2 | 6 | 48 | II | | | |
| Biological and Morphological Basis of Life (Mod. General Biology) | BIO/13 Biologia Applicata | BIOS-10/A Biologia cellulare e applicata | A3 | C | 6 | 48 | I | Dual-module course | YES | |
| Biological and Morphological Basis of Life (Mod. Histology and Anatomy) | BIO/17 Istologia e anatomia | BIOS-13/A Istologia ed embriologia umana | A3 | C | 4 | 32 | II | | | |
| Fundamentals of Management | SECS-P/08 - Economia e gestione delle imprese | ECON-07/A Economia e gestione delle imprese | B2 | C | 4 | 32 | II | | YES | |
| Total Year Credit | | | | | 60 | | | | | |

**SECOND YEAR**

| ACTIVITY NAME | Italian SSD (DM 4/10/2010) | Italian SSD (DM 639/2024) | TAF L2 | TAF L8 | CFUs | Hours | SEM | COURSE TYPE | MANDATORY ACTIVITY | NOTES |
|--|---|--|--------|--------|-----------|-------|--------|--------------------|--------------------|-------|
| Artificial Intelligence for Biomedical Data (Mod. Information Systems for Biomedical Data) | ING-INF/05 Sistemi di elaborazione delle informazioni | IINF-05/A Sistemi di elaborazione delle informazioni | C | B4 | 4 | 32 | I | Dual-module course | YES | |
| Artificial Intelligence for Biomedical Data (Mod. Machine Learning for Biomedical Data) | ING-INF/05 Sistemi di elaborazione delle informazioni | IINF-05/A Sistemi di elaborazione delle informazioni | C | B4 | 6 | 48 | II | | | |
| Control Systems and Robotics (Mod. Dynamic Systems and Control) | ING-INF/04 Automatica | IINF-04/A Automatica | C | B1 | 6 | 48 | I | Dual-module course | YES | |
| Control Systems and Robotics (Mod. Robotics) | ING-INF/04 Automatica | IINF-04/A Automatica | C | B1 | 4 | 32 | II | | | |
| Signal Analysis and Statistical Models | ING-INF/03 Telecomunicazioni | IINF-03/A Telecomunicazioni | C | B5 | 9 | 72 | I - II | | YES | |
| Biochemistry and Molecular Biology (Mod. Applied biochemistry) | BIO/10 Biochimica | BIOS-07/A Biochimica | B1 | C | 6 | 48 | I | Dual-module course | YES | |
| Biochemistry and Molecular Biology (Mod. Molecular biology) | BIO/11 Biologia molecolare | BIOS-08/A Biologia molecolare | B1 | C | 6 | 48 | I | | | |
| Physiology and Pathology (Mod. Physiology) | BIO/09 Fisiologia | BIOS-06/A Fisiologia | B1 | C | 6 | 48 | I | Dual-module course | YES | |
| Physiology and Pathology (Mod. Pathology) | MED/04 Patologia generale e immunologia | MEDS-02/A Patologia generale | B1 | C | 6 | 48 | II | | | |
| Genetics | BIO/18 Genetica | BIOS-14/A Genetica | B3 | C | 6 | 48 | II | | YES | |
| Total Year Credit | | | | | 59 | | | | | |

THIRD YEAR

| ACTIVITY NAME | Italian SSD (DM 4/10/2010) | Italian SSD (DM 639/2024) | TAF L2 | TAF L8 | CFUs | Hours | SEM | COURSE TYPE | MANDATORY ACTIVITY | NOTES |
|---|---|--|--------|--------|------|-------|-----|--------------------|--------------------|-------|
| Biotech Interfaces, Design and Regulation | ING-INF/06 Bioingegneria elettronica e informatica | IBIO-01/A Bioingegneria | C | B2 | 3 | 24 | II | | YES | |
| Electronics (Mod. Circuit Theory) | ING-IND/31 Elettrotecnica | IJET-01/A Elettrotecnica | C | B6 | 3 | 24 | I | Dual-module course | YES | |
| Electronics (Mod. Electronic Circuits) | ING-INF/01 Elettronica | IINF-01/A Elettronica | C | B3 | 7 | 70 | I | | | |
| Drugs and Therapeutic Proteins (Mod. Mechanism of Drug Action) | BIO/14 Farmacologia | BIOS-11/A Farmacologia | B3 | C | 6 | 48 | I | Dual-module course | YES | |
| Drugs and Therapeutic Proteins (Mod. Production and Properties of Drugs and Therapeutic Proteins) | CHIM/08 Chimica Farmaceutica | CHEM-07/A Chimica farmaceutica | B4 | C | 6 | 48 | II | | | |
| Microbiology and Regenerative Medicine (Mod. Microbiology and Microbial Biotechnologies) | MED/07 Microbiologia | MEDS-03/A Microbiologia e microbiologia clinica | B5 | C | 4 | 32 | I | Dual-module course | YES | |
| Microbiology and Regenerative Medicine (Mod. Stem Cells and Regenerative Medicine) | BIO/17 Istologia | BIOS-13/A Istologia ed embriologia umana | B3 | C | 4 | 32 | I | | | |
| <i>One elective course to be chosen from the following group (A1 or A2)</i> | | | | | | | | | | |
| A1) Sensors and Biosensors | CHIM/01 Chimica analitica | CHEM-01/A Chimica analitica | B4 | C | 6 | 48 | I | | NO | |
| A2) Biomolecules, biomaterials and smart systems | CHIM/03 Chimica generale ed inorganica | CHEM-03/A Chimica generale e inorganica | B4 | C | 6 | 48 | I | | NO | |
| <i>One elective course to be chosen from the following group (B1 or B2 or B3 or B4)</i> | | | | | | | | | | |
| B1) Advanced Control and Robotics | ING-INF/04 Automatica | IINF-04/A Automatica | C | B6 | 6 | 48 | II | | NO | |
| B2.1) Digital Embedded Systems for Biotechnology (Mod. Embedded Systems) | ING-INF/01 Elettronica | IINF-01/A Elettronica | C | B6 | 3 | 30 | II | Dual-module course | NO | |
| B2.2) Digital Embedded Systems for Biotechnology (Mod. C Language) | ING-INF/05 Sistemi di elaborazione delle informazioni | IINF-05/A Sistemi di elaborazione delle informazioni | C | B6 | 3 | 30 | II | | | |

(continua)



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|--|---|---|---|----|---------------------------|-----------|------|--------------------|-----|--|
| B3.1) Electromagnetics and Imaging for Biomedicine (Mod. Electromagnetics for Biomedicine) | ING-INF/02 Campi Elettromagnetici | IINF-02/A Campi elettromagnetici | C | B6 | 3 | 24 | II | Dual-module course | NO | |
| B3.2) Electromagnetics and Imaging for Biomedicine (Mod. Imaging for Biomedicine) | ING-INF/03 Telecomunicazioni | IINF-03/A Telecomunicazioni | C | B6 | 3 | 24 | II | | | |
| B4) Signal Acquisition and Measurement Systems | ING-INF/07 Misure Elettriche e Elettroniche | IMIS-01/B Misure elettriche ed elettroniche | C | B6 | 6 | 60 | II | | NO | |
| | | | | | | | | | | |
| Elective Courses (see table below) | | | D | D | 12 | | I-II | | YES | |
| Internship | | | F | F | 1 | 25 | II | | YES | |
| Final Exam | | | E | E | 3 | | II | | YES | |
| | | | | | Total Year Credits | 61 | | | | |

TABLE LEGEND

TAF = Activity Category (A, B, C, D, E, F)

CFUs = UNIVERSITY CREDITS

Hours = Number of Lecture Hours

SEM = Semester (I or II)

COURSE TYPE = indicates whether the course consists of two modules or is a single-module course

MANDATORY ACTIVITY = indicates whether the course is compulsory or optional

List of Approved Eligible Courses

Students are required to complete their study plan by selecting 12 credits from the following optional courses.

| ACTIVITY NAME | Italian SSD (DM 4/10/2010) | Italian SSD (DM 639/2024) | TAF L2 | TAF L8 | CFUs | Hours | SEM | COURSE TYPE | MANDATORY ACTIVITY | NOTES |
|--|---|--|--------|--------|------|-------|-----|--------------------|--------------------|-------|
| A) Advanced Control and Robotics | ING-INF/04 Automatica | IINF-04/A Automatica | D | D | 6 | 48 | II | | NO | |
| B) Biomolecules, biomaterials and smart systems | CHIM/03 Chimica generale ed inorganica | CHEM-03/A Chimica generale e inorganica | D | D | 6 | 48 | I | | NO | |
| C1) Digital Embedded Systems for Biotechnology (Mod. Embedded Systems) | ING-INF/01 Elettronica | IINF-01/A Elettronica | D | D | 3 | 30 | II | Dual-module course | NO | |
| C2) Digital Embedded Systems for Biotechnology (Mod. C Language) | ING-INF/05 Sistemi di elaborazione delle informazioni | IINF-05/A Sistemi di elaborazione delle informazioni | D | D | 3 | 30 | II | | | |
| D1) Electromagnetics and Imaging for Biomedicine (Mod. Electromagnetics for Biomedicine) | ING-INF/02 Campi Elettromagnetici | IINF-02/A Campi elettromagnetici | D | D | 3 | 24 | II | Dual-module course | NO | |
| D2) Electromagnetics and Imaging for Biomedicine (Mod. Imaging for Biomedicine) | ING-INF/03 Telecomunicazioni | IINF-03/A Telecomunicazioni | D | D | 3 | 24 | II | | | |
| E) Sensors and Biosensors | CHIM/01 Chimica analitica | CHEM-01/A Chimica analitica | D | D | 6 | 48 | I | | NO | |
| F) Signal Acquisition and Measurement Systems | ING-INF/07 Misure Elettriche e Elettroniche | IMIS-01/B Misure elettriche ed elettroniche | D | D | 6 | 60 | II | | NO | |