TEACHING REGULATIONS OF THE COURSE
ENGINEERING FOR WORK AND ENVIRONMENTAL SAFETY
(L-7R)
academic year 2026/27

Outline

Art. 1 - General characteristics and organization

The three-year Bachelor's degree programme in Engineering for Workplace and Environmental Safety - L-7 - Civil and Environmental Engineering (Ministerial Decree March 16, 2007, reformed pursuant to DM 1648/23) – is activated according to the 2025 educational system.

The programme has been designed to meet the needs of industries and companies that must equip themselves with qualified personnel and consultants in the field of environment and/or safety. The purpose of the programme is therefore to provide interdisciplinary training that enables the development of design and management skills, not only for workplace safety services in civil and industrial settings, but also for activities related to environmental protection, such as water and waste treatment, site remediation, spatial planning, and environmental impact assessment.

In addition to professionalizing content centered on the topics described above, the programme combines foundational teachings in civil and plant engineering necessary to continue studies (Master degrees and Master of Science programmes).

The educational path is structured over three years and includes foundational courses in mathematics, physics, and chemistry, followed by courses with a specific professional orientation in the environmental field, such as environmental engineering, hydraulics, contaminated site remediation, and environmental compatibility procedures. There are disciplines typical of civil engineering, such as mechanics of materials and structures and technical physics, as well as subjects dealing with safety issues, such as construction site management, major accidents, workplace hygiene, process safety, and emergency management. Some courses are supported by field activities and computer labs. Practical and operational aspects are enriched by the opportunity to complete internships and work placements in companies, aimed at creating an initial connection between the student and the working world. Complementary educational activities aimed at acquiring international experience are also planned, made possible through a series of Erasmus agreements with various European academic institutions.

The professional profile of the graduate corresponds to the following roles: workplace safety technician, environmental control technician, waste collection and treatment technician, and environmental remediation technician.

Graduates can perform consulting activities as freelancers or company employees, participate in public selection procedures requiring their degree class among admission qualifications, and attend specialization courses enabling them, according to specific statutory provisions, to hold specific roles (Prevention and Protection Service Manager [RSPP], Safety Coordinator during design/execution phases of civil works, Safety Trainer, Environmental Management Manager, Competent Acoustics Technician, Qualified Fire Safety Professional, Qualified Radioprotection Expert). To hold certain qualifications (e.g., Civil Works Designer), within legal limits, graduates must register with the Professional Order of Engineers after passing the licensing exam (currently not offered by the University of Insubria). For other roles (Fire Safety Professional), in addition to registration in the Professional Register, passing the final exam of a course offered by various bodies (Professional Orders or Colleges) in collaboration with the Fire Department is required.

After obtaining the Bachelor degree, the law allows registration in Section B of the Provincial Order of Engineers, with the qualification of Junior Engineer, subject to passing the State Exam.

If the graduate intends to continue their study path, they can enroll in First-Level Master's degree programmes and Master of Science (LM) degree programmes. The University offers the Master Degree Programme in Environmental Engineering and Safety in Working Environments (IASAL), which represents the ideal continuation and completion of the three-year Bachelor degree path.

The academic structure responsible for the degree programme is the Department of Theoretical and Applied Sciences (DiSTA).

Head of the Degree Programme Board: Prof. Bruno Dal Lago - Bruno Dal Lago.

The reference student secretariat receives by appointment via the Microsoft Teams Platform and responds to emails received through INFOSTUDENTI (InfoStudenti is the web application offering a communication channel with various University offices – including Student Secretariats, Integrated Student Services - Right to Education, Orientation and Placement Services, and Teaching Secretariats – available to students and external users. Through this system, it is possible to submit queries and receive responses, attach documents, and track the status of requests). INFOSTUDENTI.

Art. 2 - Teaching calendar of the course

Classes take place at the Varese campus.

Educational activities take place in Varese.

The internet address of the course is the following: https://www.uninsubria.it/formazione/offerta-formativa/corsi-di-laurea/ingegneria-la-sicurezza-del-lavoro-e-dellambiente

The lesson calendar is published under the page **LESSON TIMETABLE:**
https://www.uninsubria.it/formazione/offerta-formativa/corsi-di-laurea/ingegneria-la-sicurezza-del-lavoro-e-dellambiente

while the exam call calendar, to consult exam dates and times, is published at:
https://uninsubria.esse3.cineca.it/ListaAppelliOfferta.do

The teaching calendar is divided into semesters:

I semester from **22 September 2025 to 19 Decembre 2025**

II semester from **23 February 2026 to 29 May 2026**

Exams

There are at least 6 sessions for each course during the period of lessons suspension. The calendar of the exams is published on the page https://uninsubria.esse3.cineca.it/ListaAppelliOfferta.do

Art. 3 – Orientation activities

The link to information on orientation activities carried out at University level is provided below:
https://www.uninsubria.it/formazione/consigli-e-risorse-utili/orientamento

Incoming Orientation

Members of the Board of Studies present the ISLA Degree Programme during orientation meetings held in high schools, Orientation Fairs, or at the University, providing general information on courses and admission procedures. In particular, Open Day constitutes the main incoming orientation event. During Open Day, faculty members of the Degree Programme, including the Head of the Board, present the general structure of the course, main employment opportunities, and introduce the requirements and procedures to complete enrollment. The Quality Manager and student representatives also participate in this meeting. Interested students can also request an individual orientation interview managed, based on the

user's needs, by the Orientation and Placement Office, by the Department responsible for specific course inquiries, or by the Psychological Counselling Service in case of requests for decision support, including psychological support. In-depth study days, seminars, and internships are organized to enable students to learn about characteristic topics, issues, and procedures in different fields of knowledge. In particular, scientific laboratory internships are offered to enhance technical-scientific disciplines with field experiences.

On-course orientation and tutoring
The Degree Programme transparently and responsibly undertakes a commitment toward students with disabilities or specific learning disabilities (SLD/DSA), providing support to define an individualized educational plan specifying dispensatory measures and compensatory tools (extra time, equivalent tests, etc.) for class attendance and taking evaluation tests.

Art. 4 - Education goals, expected learning outcomes and career opportunities

The program aims to provide students with the knowledge, skills, and competencies necessary to train professionals in the fields of occupational safety, environmental control, air, water, and waste treatment, and environmental remediation.

In line with the educational goals of the program, the program aims at:

1. providing the scientific foundations (mathematics, physics, and chemistry) necessary for the schematization and solution of the engineering problems developed during the course of study;
2. providing the basic tools of civil and plant engineering, which provide essential support both for the application developments proposed by the program and for any more advanced training (masters and master's degrees);
3. providing the basic tools as well as specific professional content related to environmental engineering and occupational safety;
4. providing adequate preparation for the analysis and solution of problems requiring the application of standard and consolidated methodologies, sufficient to address the issues most frequently encountered in professional practice in the sector.

The course is structured into four main learning areas:

- basic science subjects;
- basic engineering subjects;
- environment;
- safety.

Upon completing the degree path, the main employment opportunities graduates can cover are workplace safety technician, environmental control technician, waste collection and treatment technician, and environmental remediation technician, both as employees of private companies and public bodies and as freelance professionals.

The areas are balanced in terms of lecture hours and individual study hours.

Throughout the study path, basic scientific training mainly concerns the first year, basic engineering training covers much of the second year, while part of the second and the entire third year focus primarily on professionalizing training in environment and safety.

Transversely across the learning areas, students can acquire the knowledge necessary to communicate

effectively, in written and oral form, in English language other than Italian, at least at B1 level of the Common European Framework of Reference, to better complete their preparation in response to job market demands.

The path does not feature differentiated tracks. However, students can customize their curriculum by orienting it more toward the environmental or safety area through elective exams.

BASIC SCIENTIFIC SUBJECTS AREA

Knowledge and understanding

Graduates will have acquired basic knowledge in Mathematics, Physics, Chemistry (Inorganic and Organic), Statistics, and Computer Science to consolidate the scientific method in approaching theoretical and applied problems.

Ability to apply knowledge and understanding

Graduates will be able to approach basic physics and chemistry problems, reducing them to analyzed frameworks and solving them using ordinary mathematical tools, including differential and integral calculus, and operate data analysis using IT tools.

Making judgements

Graduates will develop independent judgement on appropriate physical-chemical-mathematical tools and methodologies for Civil and Environmental Engineering problems.

Communication skills

Graduates will be able to transmit basic pure science techniques orally and in writing.

Learning skills

Graduates will be able to consult handbooks/formulas and dedicated literature for pure science subjects.

BASIC ENGINEERING SUBJECTS AREA

Knowledge and understanding

Graduates will acquire essential knowledge on quantities of interest, schematization procedures, and solving techniques typical of basic civil/environmental engineering disciplines.

Ability to apply knowledge and understanding

Graduates will be able to apply technical/scientific knowledge and calculation methodologies to solve verification and preliminary sizing problems for simplified schemes.

Making judgements

Graduates will develop independent judgement on solving techniques for civil/environmental engineering problems.

Communication skills

Graduates will be able to convey technical concepts orally, in writing, and through diagrams, drawings, and technical plans.

Learning skills

Graduates will be able to consult specialist handbooks and dedicated literature.

ENVIRONMENT AREA

Knowledge and understanding

Full knowledge of parameters describing environmental quality, pollution phenomena, management practices, and technologies to combat resource depletion within regulatory and economic frameworks.

Ability to apply knowledge and understanding

Preliminary design of interventions aimed at monitoring, improving, and preserving quality across matrixes (air, water, land).

Making judgements

Independent judgement on solving techniques for environmental engineering problems.

Communication skills

Ability to communicate technical concepts orally, in writing, and through technical drawings.

Learning skills

Ability to consult specialist handbooks and literature.

SAFETY AREA

Knowledge and understanding

Basic safety notions across diverse workplaces and mobile construction sites, including causes and consequences of accidental events from anthropogenic and natural sources.

Ability to apply knowledge and understanding

Identifying hazards related to technology or production processes; simulating accidental event consequences on populations and environment; researching physical/chemical/biological data; participating in hygienic-toxicological emergency management.

Making judgements

Independent judgement on safety engineering solutions.

Communication skills

Ability to transmit safety engineering technical concepts.

Learning skills

Ability to consult specialist handbooks and technical literature.

JOB OPPORTUNITIES

The graduate's professional profile corresponds to the following roles: occupational safety technician, environmental control technician, waste collection and treatment technician, and environmental remediation technician.

Workplace safety technician

He/she performs:

- Risk analysis and assessment;
- Assistance to the employer in managing safety;
- Coordination on the construction site.

He/she can work in any company or organization, with different tasks depending on its size and goal/application, in professional firms and freelancers.

Environmental Control Technician

He/she can intervene in various phases:

- Management and sustainable use of resources;
- Environmental protection and conservation;
- Improving the environmental status of various environmental matrices
- Eliminating various sources of pollution;
- Collaboration with the institutions and public bodies responsible for territorial governance.

He/she can work in service companies and infrastructures, environmental management or design companies, public bodies and as freelance professional.

Waste collection and treatment and environmental remediation technician

He/she can intervene in various phases:

- Analysis and monitoring of waste management and assessment of potential site contamination;
- Planning of material and/or energy recovery interventions and design/testing of safety or remediation interventions;
- Post-construction monitoring of environmental remediation interventions;
- Discussion and collaboration with local government institutions and bodies.

He/she can work in service companies and infrastructures, environmental management or design companies, public bodies, as freelance professional and for environmental consultancy.

The degree grants access to Master degree programmes (specifically LM-35 Environmental Engineering and for the Sustainability of Working Environments at Insubria) and, subject to passing the State Examination, registration in Section B of the Engineers' Register as Junior Engineer.

Art. 5 - Admission to the course

Pursuant to current regulations, admission requires an upper secondary school diploma or equivalent foreign qualification.

Required knowledge is not bound to a specific diploma type; general knowledge, logical reasoning, reading comprehension, and basic mathematics suffice.

Enrollment is open. Enrolled students must take a test to verify initial preparation in mathematics,

reasoning/problems, reading comprehension, and basic sciences.
The test consists of **TOLC-S via TOLC@CASA** online by CISIA:

- **Basic Mathematics:** 20 questions in 50 minutes
- **Reasoning, problems and text comprehension:** 15 questions in 30 minutes
- **Basic Sciences:** 20 questions in 40 minutes

Scoring: 1 point per correct answer, 0 points for unanswered questions, -0.25 points for wrong answers.
The test is passed if the student reaches a minimum score of 8/20 in Basic Mathematics and 5/15 in Reasoning, problems and text comprehension. No thresholds apply to Basic Sciences.
TOLC-S can be repeated multiple times up to November 30.

CISIA TOLC-S Syllabus: https://www.cisiaonline.it/area-tematica-tolc-scienze/struttura-della-prova-e-sillabo/
Students not passing receive an Additional Educational Obligation (OFA), requiring a mandatory remedial course and test by the end of 1st semester.
OFA is fulfilled if by September 30 of the following calendar year the student passes a new TOLC-S or passes Mathematical Analysis A.
Enrollment in the 2nd year in regular status requires OFA fulfillment by September 30 of the following calendar year. Students not taking the initial test face a career block.

Exempted from test: internal transfers with equivalent test, transfers from other universities with equivalent test, existing degree holders.

Preparation tools: CISIA MOOC Basic Mathematics (https://lms.federica.eu/enrol/index.php?id=568), CISIA FAQs (https://www.cisiaonline.it/faq-cisia-archivio-tolc/), and University pre-courses in late August/early September (www.uninsubria.it/precorsi).

Art. 6 - Incoming transfers and course changes

Transfer requests are evaluated by the Board of Studies based on syllabus analysis and SSD congruity pursuant to DM 16 March 2007. Link: https://www.uninsubria.it/servizi/consulenza-e-supporto/pratiche-studenti/servizi-segreterie-studenti/riconoscimento-di
Recognition of Professional Skills: max 12 CFU for certified professional knowledge/skills or post-secondary training co-designed by universities.

Art. 7 - Concurrent enrollment in two degree programmes

Allowed under Law no. 33 of April 12, 2022 and Ministerial Decrees DM 930/2022 and DM 933/2022.

Art. 8 - Education Path

The program does not include curricula; the program includes six mandatory courses in the first year, in addition to the English language course, nine mandatory courses in the second year, and two in the third year. Two elective courses are available in the third year, where students can choose one of two courses in the first block and one of three courses in the second block. Additionally, 12 free-choice credits are available in the third year, nine credits for internships, and three credits for the final exam.

The 3 credits in "English" can be recognized through one of the following methods:

1. By submitting to the Student Secretariat a certificate proving completion of a test at a level ≥ B1. This certificate must not have been obtained more than 5 years ago, with the exception of IGCSE,

IELTS, and TOEFL certifications, which are valid for only 2 years. For a complete list of recognized certifications, please refer to the following link: https://www.uninsubria.it/sites/default/files/Didattica/DiSTA/Riconoscimento_Certificazioni_Inglese_DISTA_ISLA.pdf

2. Acquiring credits within the University by passing an English language exam administered by the University. Students may take this exam throughout the academic year at specifically scheduled exam sessions.

Courses are taught in person. The organization of the courses hours into full days and the request to instructors to provide dedicated materials intend to facilitate the use of the program by working students. Instructors conduct personalized discussions based on the specific the participation of working students who have difficulty attending in-person classes.

To facilitate the progress of students with declared disabilities, the program, upon notification by the dedicated University Office, supports them by providing the necessary measures.

Attendance is not mandatory but is highly recommended.

CFU/hours correspondance for each type of activity

University Educational Credits (CFU) are a measurement of the amount of learning, including individual study, required to a student with an adequate initial preparation to acquire knowledge and skills in the educational activities required by the degree program.

Any educational activity (teaching, laboratory, internship, thesis, etc.) within the degree program corresponds to a specific number of educational credits (CFU).

Each CFU corresponds to 25 hours of commitment, given by the hours of lectures and laboratory and the ones of independent study necessary to complete the student's preparation.

The CFU number corresponding to each educational activity is acquired by the student upon passing the exam or any other form of assessment defined in the degree program rules.

Educational Activities / CFU:

- lectures: 8 hours
- practical exercises: 12 hours
- laboratory: 16 hours
- seminars: 12 hours
- field laboratories: 16 hours
- internship: 25 hours

The credits corresponding to each training activity are acquired by the student upon passing the exam or other form of assessment established in the course regulations.

Lectures: This is the main and fundamental teaching activity; students attend lectures and independently process the content they have listened to.

Exercises: This activity allows to understand completely the content of lectures through the development of applications. No additional content is added to the lectures. Typically, exercises are associated with lectures and do not exist independently. In "passive" exercises, the application development is performed by the instructor; in active exercises, students develop applications under the instructor's supervision.

Laboratory: This is a supervised activity that involves the student interaction with tools, equipment, or application software packages.

Seminars: Activities in which recognized experts in a given field are invited to share their experiences, showcasing both scientific advances in research and professional applications.

Visits/Study Trips: In-person activities in an internal or external production or research context, accompanied by a faculty member;

Internships: Activities in which students work alongside industry professionals or researchers to perform technical tasks relevant to the topics covered in the program;

Thesis: Preparation of the final dissertation.

Assessment Methods for Educational Activities

The assessment methods for learning activities vary greatly, to best meet the specific needs of each course. This may include written exams, oral exams, homework, or a combination of these.

The assessment and evaluation methods are detailed in the course syllabuses.

Propaedeutics

COURSE	IF YOU HAVE NOT PASSED THE FOLLOWING EXAM
PLUMBING AND HYDRAULIC SYSTEMS	MATHEMATICAL ANALYSIS B PHYSICS
STRUCTURAL MECHANICS	MATHEMATICAL ANALYSIS B PHYSICS
STRUCTURAL DESIGN	STRUCTURAL MECHANICS
ELECTRICAL ENGINEERING, SYSTEMS AND ELECTRICAL RISK	MATHEMATICAL ANALYSIS A MATHEMATICAL ANALYSIS B PHYSICS B
COMPUTER SCIENCE AND STATISTICS FOR ENGINEERING	MATHEMATICAL ANALYSIS A
GEOTECHNICS	PHYSICS A

Art. 9 - Rules for submitting study plans

Students must submit their Study Plan in their third year, with the possibility of modifying it in the following years, according to the deadlines set annually and reported on the Student Secretariat web pages: https://www.uninsubria.it/servizi/presentazione-piano-di-studio.

Students have to compile their study plan online by accessing their ESSE3 reserved area and must indicate:

- courses that have to be chosen in a dedicated list
- elective courses (TAF D), which are worth 12 credits.

Elective courses may be chosen from all courses offered at the University, with the exception of some integrated courses offered by limited-access health-related degree programs.

The Degree Program Council will evaluate the consistency of these elective courses with the program in which the student is enrolled.

To facilitate the selection process, some recommended courses consistent with the program are listed in the online plan submission process.

Please note that the lessons of elective courses taken from other University degree programs may have an unresolvable overlap with the program's class schedule.

Art. 7 - Opportunities offered during the training path

The program promotes several initiatives that complement and enrich the academic experience. In particular, it is possible to participate in mobility and internationalization programs:

Il corso di studio promuove alcune iniziative che vanno a completare e arricchire l'esperienza accademica, in particolare è possibile partecipare ai programmi di mobilità e internazionalizzazione:

- **Mobility abroad – Erasmus and other opportunities**
  https://www.uninsubria.it/internazionale/mobilita-allestero/programma-erasmus
- **Tutoring service** (https://www.uninsubria.it/servizi/tutti-i-servizi/tutorato)
  It consists of a series of activities aimed at orienting, assisting, advising, and informing students. In addition to the university information service, the program annually selects subject-specific tutors from among both students and faculty. Student tutors are responsible for assisting their peers in preparing for complex subjects (e.g., Mathematical Analysis and Physics). The tutors are available to students to advise them on the best solutions to problems they may encounter while completing the program (e.g., in compiling study plans and choosing internships).

Contacting the "Diritto allo Studio" office, it is possible to apply for student collaborations: https://www.uninsubria.it/servizi/tutti-i-servizi/collaborazioni-studentesche-200-ore

- **Internship**

  The training internship represents an opportunity for students to concretely apply and deepen the knowledge and skills acquired during their studies. During the internship, students improve their independent judgment and communication skills, particularly in the specific terminology of the chosen discipline. Self-learning and self-assessment skills are also encouraged and enhanced.

  Depending on the chosen field, students will gain valuable experience for further studies or for entering the job market.

  The educational objectives of the internship are specifically outlined in an individual training plan approved by a dedicated internship committee, in line with the specific educational objectives of the program and the expected career opportunities.

  The internship is preparatory to the thesis that the student will defend in the final exam.

  The internship may be completed once students have earned at least 120 credits of exams required by their study plan and 3 credits in English.

  The Department of Theoretical and Applied Sciences (DiSTA), through its Internship Desk, promotes curricular internships. These offer students the opportunity to undertake practical work, including outside the University, particularly with qualified public or private organizations.

  The procedure for activating external and internal internships can be found at https://www.uninsubria.it/servizi/tutti-i-servizi/tirocini-curriculari-dista.

  For the Degree Program in Occupational and Environmental Safety Engineering, please consult the

internship details page:
https://www.uninsubria.it/sites/default/files/Didattica/DiSTA/DISTA_Tirocinio_ISLA_F001.pdf

Students can contact the Internship Desk for further information: https://www.uninsubria.it/ateneo/tutte-le-sedi/sportello-stage-dista

Art. 11 - Graduation

The final exam consists of a 12-minute presentation of the thesis work in a public session (via PowerPoint presentation) before a special Degree Committee, composed of no fewer than five members and a majority of professors and researchers from the Degree Program.

Any external members (co-supervisors or company tutors) may be invited to participate in the session for advisory purposes.

The thesis is submitted by the student according to the procedures established by the University and accessible on the page https://www.uninsubria.it/servizi/vivere-insubria/laurearsi/esame-di-laurea-triennale-ingegneria-la-sicurezza-del-lavoro-e

The final exam is worth 3 credits.

The final exam syllabus is available on the Degree Programme website, in the Course Details – Study Plans section, by selecting the relevant cohort.

The Degree Programme has developed a specific Regulation that integrates and specifies the contents of the current University Teaching Regulations: https://www.uninsubria.it/sites/default/files/2024-04/Regolamento_conseguimento_laurea_ISLA.pdf

The final score is expressed in hundredths. The basic score for the degree exam is calculated as the overall average of the grades, weighted by the number of credits, that is each grade contributes to the average in proportion to the number of credits of the course. Educational activities requiring only a "pass" grade do not contribute to the overall average.

To determine the final score, the final thesis evaluation determined by the degree committee (up to 8 points) is added to the basic score. The assignment of scores takes into account the originality of the work and the quality of the presentation.

To be awarded Academic Honors, the basic score must be no lower than 103/110. The proposal for Academic Honors must be presented by the Supervisor to the President of the Degree Committee before the meeting and must be unanimously approved by the Committee. The announcement is made by the Committee President at the conclusion of the meeting.

Upon graduation, a **Diploma Supplement** is issued. The Diploma Supplement is an informative report accompanying the official qualification awarded at the end of the study program. It describes the nature, level, context, content, and status of the studies undertaken and completed by the student. It is issued in both Italian and English. The purpose of the document is to provide independent data for the international transparency of qualifications (diplomas, degrees, certificates, etc.) and to enable equitable academic and professional recognition, promoting student mobility. The Diploma Supplement complies with the Europass standard.

For detailed information regarding the types of final project—with particular reference to length and assessment criteria—please refer to the aforementioned regulations.

The schedule of sessions and the registration procedures for the final exam are available at the following link:

https://www.uninsubria.it/servizi/vivere-insubria/laurearsi/esame-di-laurea-triennale-ingegneria-la-sicurezza-del-lavoro-e

Upon completion of the degree program, a Diploma Supplement is issued; this is an informative document accompanying the official qualification that describes the nature, level, context, content, and status of the studies undertaken and completed by the student. It is issued in both Italian and English. The purpose of the document is to provide independent data to ensure the international transparency of qualifications (diplomas, degrees, certificates, etc.) and to facilitate fair academic and professional recognition, thereby promoting student mobility. The Diploma Supplement complies with the Europass standard.
Regulations and a sample of the document are available at the following link: https://www.mim.gov.it/web/guest/-/nuovo-supplemento-al-diploma-con-4-allegati-relativi-alla-compilazione-e-alle-linee-guida-nazionali-per-la-digitalizzazione

Art. 12 - Quality Assurance of the degree programme

Regarding Quality Assurance, reference is made to the procedures, methodological approach, and terminology defined by the University's Quality Assurance Unit, in compliance with the regulations established by the Ministry of University and Research and the National Agency for the Evaluation of Universities and Research Institutes (ANVUR).
The Degree Programme Council ensures the educational and organizational coordination of the degree programme's activities, in accordance with the remit and guidelines of the Department Council and relevant regulations.
First- and second-cycle degree programmes falling within the same disciplinary area report to the respective Degree Programme Council (where applicable).
Each Degree Programme Council elects a Chair from among its members, who serves as the Head of the Degree Programme. The Chair is responsible for the educational offering as well as the self-assessment and review processes of the programme. The Degree Programme Council generally meets on a monthly basis to handle routine management tasks and to review and—where required—deliberate on the preparatory work carried out by various commissions delegated by the Council to handle specific activities. It also submits proposals and opinions to the Department Council within its area of competence, particularly regarding annual educational planning, student administrative matters, internships and traineeships, student guidance and orientation, agreements and collaborations with other Italian and foreign universities as well as external bodies and companies, laboratories and seminars, and exam and graduation schedules.
The Chair is assisted by the Degree Programme's Internal Quality Assurance (AiQua) Commission in managing quality processes, conducting self-assessment and review activities, and drafting key quality assurance documents for the programme. The AiQua Commission comprises the Degree Programme Coordinator, one or more faculty members and students from the programme, and a member of the administrative staff; the latter acts as a Quality Assurance (QA) system facilitator, provides administrative support, and—with a view to the self-assessment and continuous improvement process—conveys observations, critical issues, and proposals regarding the study programme and teaching support services.
A Joint Faculty-Student Commission is established within the Department, composed of one student and one faculty member for each Degree Programme affiliated with the Department, representing the various disciplinary areas. Student members are elected by their representatives on the Degree Programme Councils or, in the absence thereof, on the Department Council. The roles of Chair and Vice-Chair are held by a faculty member and a student, respectively. A member of the Department's administrative support staff participates in the meetings.
The Joint Faculty-Student Commission monitors the educational offerings, the quality of teaching, and the student services managed by the Department, identifying indicators to evaluate the results. It issues opinions regarding the activation or discontinuation of courses and degree programmes and formulates proposals to improve teaching performance and the efficiency of educational facilities, submitting these to the

Department Council.
As a rule, the Joint Faculty-Student Commission schedules periodic meetings to ensure thorough monitoring.

Students elect their representatives to the Department Council, the Degree Programme Council, and the Joint Commission, while they appoint representatives to the AiQUA Commissions (dedicated pages listing the representatives' names are available): https://archivio.uninsubria.it/siti-tematici-o-federati/siti-dei-dipartimenti/dipartimento-di-scienze-teoriche-e-applicate-dista-2#cpds

Teaching evaluation questionnaires and Opinion Week

1. Student evaluation of teaching is conducted via an online questionnaire, with separate versions for students who attend classes regularly and those who do not. The questionnaire is administered to all students during a specific period—between the two-thirds mark of the course and the end of classes—each semester; this takes place through the student record management system (ESSE3), which students access to register for exams. The system ensures the anonymity of the respondent. Link to the dedicated webpage: https://www.uninsubria.it/ateneo/la-nostra-qualita/opinioni-degli-studenti

In accordance with the directives of the University's Quality Assurance Unit, the degree program participates in the **"Opinion Week"** initiative—a week dedicated to completing teaching evaluation questionnaires—during which lecturers encourage students in the classroom to use this important tool to share their feedback. Furthermore, the program designates a specific time to share the results of the previous semester's questionnaires with students, along with any actions taken in response to them.

2. Upon completion of the internship, the student is required to fill out an experience evaluation form; the data collected is used by the University to monitor and assess the activities undertaken and to continuously improve the service. Additionally, the student must submit a report confirming the successful completion of the internship to the degree program's Internship Office in order to obtain academic credit. Regarding feedback from prospective and recent graduates, the Degree Program relies on surveys conducted by the AlmaLaurea Inter-University Consortium, which are available on the Degree Program's webpage under "Student and Graduate Feedback."

Art. 13 – Final and transitory norms

ANNEXES

Annex 1 – study plan
Annex 2 – Synthesis of the objectives of mandatory courses

Annex 1 – Study plan

PLANNED CURRICULUM – 2026/2027 COHORT

The "planned curriculum" refers to the set of courses scheduled for the entire study program that must be completed by all students enrolling in the current academic year (enrollment cohort) in order to finish their training and obtain the degree.

YEAR I							
SEM	**NAME**	**MODULE**	**SECTOR**	**TAF**	**CFU**	**HOURS**	**VERIFICATION METHOD***
I	PRECOURSE – MATHEMATICAL ANALYSIS A		MATH-03/A	Basic / mathematics, computer science and statistics	0	LEZ:16	F
II	MATHEMATICAL ANALYSIS A		MATH-03/A	Basic / mathematics, computer science and statistics	9	LEZ:56 ESE:24	V
I	GENERAL, INORGANIC AND ORGANIC CHEMISTRY	*MODA*	CHEM-03/A	Basics / Physics and Chemistry	9	LEZ:56 ESE:24	V
II		*MOD B*	CHEM-05/A	Related/Complementary	6	LEZ:32 ESE:24	V
I	PHYSICS A		PHYS-01/A	Basics / Physics and Chemistry	6	LEZ:36 ESE:18	V
II	PHYSICS B		PHYS-01/A	Basics / Physics and Chemistry	6	LEZ:36 ESE:218	V
II	MATHEMATICAL ANALYSIS B		MATH-03/A	Basic / mathematics, computer science and statistics	9	LEZ:56 ESE:24	V
I	HYGIENE AND SAFETY OF WORKPLACES	SAFETY IN WORKPLACES AND CONSTRUCTION SITES	CEAR-02/A	Characterizing / Environmental and Territorial Engineering	6	LEZ:48	V
II		GENERAL AND OCCUPATIONAL HYGIENE	MEDS-25/B	Related/Complementary	6	LEZ:48	V
ND	ENGLISH		NN	Knowledge of at least one foreign language	3	LEZ:24	G

YEAR II							
SEM	**NAME**	**MODULE**	**SECTOR**	**TAF**	**CFU**	**HOURS**	**VERIFICATION METHOD***
I	COMPUTER SCIENCE AND STATISTICS FOR ENGINEERING		INFO-01/A	Basic / mathematics, computer science and statistics	6	LEZ:24 ESE:24 LAB:16	V
I	ELECTRICAL ENGINEERING, SYSTEMS AND ELECTRICAL RISK		IIET-01/A	Characterizing / Safety and Civil, Environmental and Territorial Protection Engineering	6	LEZ:32 ESE:18 LAB:8	V
I	ENVIRONMENTAL TECHNICAL PHYSICS		IIND-07/B	Characterizing / Safety and Civil, Environmental and Territorial Protection Engineering	9	LEZ:44 ESE:42	V
I	PLUMBING AND HYDRAULIC SYSTEMS		CEAR-01/A	Characterizing /Civil engineering	9	LEZ:56 ESE:24	V
I	ENVIRONMENTAL HEALTH ENGINEERING		CEAR-02/A	Characterizing / Environmental and Territorial Engineering	9	LEZ:64 ESE:12	V
II	REMEDIATION OF CONTAMINATED SITES		CEAR-02/A	Characterizing / Environmental and Territorial Engineering	9	LEZ:44 ESE:42	V
II	ELEMENTS OF GEOLOGY, HYDROGEOLOGY AND SEISMIC RISK		GEOS-02/C	Related/Complementary	6	LEZ:48	V
I	GEOTECHNICS		CEAR-05/A	Characterizing / Environmental and Territorial Engineering	6	LEZ:48	V
II	STRUCTURAL MECHANICS		CEAR-06/A	Characterizing /Civil engineering	9	LEZ:72	V

YEAR III							
SEM	**NAME**	**MODULE**	**SECTOR**	**TAF**	**CFU**	**HOURS**	**VERIFICATION METHOD***
I	PROCESS ENGINEERING, RELIABILITY AND SAFETY		ICHI-02/A	Characterizing / Environmental and Territorial Engineering	9	LEZ:64 ESE:12	V
I	STRUCTURAL DESIGN		CEAR-07/A	Characterizing / Environmental and Territorial Engineering	6	LEZ:48	V
I+II	ELECTIVE		NN	Elective	12		V
I+II	INTERNSHIP		NN	Other/Internship	9	TIR:225	G
ND	FINAL EXAM			Language/final exam / For the final exam	3	PRF:75	V

ONE COURSE AMONG:							
SEM	**NAME**	**MODULE**	**SECTOR**	**TAF**	**CFU**	**HOURS**	**VERIFICATION METHOD***
II	FIRE-FIGHTING SYSTEMS		CEAR-02/A	Characterizing / Environmental and Territorial Engineering	6	LEZ:48	V
I	MAJOR INCIDENTS AND RISK ANALYSIS		CEAR-02/A	Characterizing / Environmental and Territorial Engineering	6	LEZ:48	V
ONE COURSE AMONG:							
II	OCCUPATIONAL CHEMICAL RISK		MEDS-25/B	Related/Complementary	6	LEZ:48	V
I	ASSESSMENT OF HYGIENISTIC-TOXICOLOGICAL RISKS		MEDS-25/B	Related/Complementary	6	LEZ:48	V
I	ELEMENTS OF ENVIRONMENTAL LAW AND CIRCULAR ECONOMY		GIUR-03/A	Related/Complementary	6	LEZ:48	V

***G** – JUDGEMENT **V** – EXAME **I** – SUITABILITY **F** – ATTENDANCE
***HOURS** and activity type **LEZ**: lecture **ESE**: exercises **LAB**: laboratory **SEM**: seminar **TIR**: internship*

Annex 2 – Synthesis of the objectives of mandatory courses

Course name	*Year*	*Formative objectives – from course syllabus*
MATHEMATICAL ANALYSIS A	I	To acquire fundamental knowledge and tools regarding differential and integral calculus for functions of a real variable and differential equations. Specifically, the course covers numerical series and the local and global properties of real-valued functions of a real variable—including continuity, differentiability, and approximation via series. It introduces the Riemann integral and the Fundamental Theorem of Calculus, developing calculation methods applied to problems involving the determination of areas (both proper and improper integrals). The study of integral functions is addressed in detail. Linear differential equations of the first and second order, as well as separable-variable equations (both linear and non-linear), are introduced. Qualitative analysis methods are presented for equations that cannot be solved using elementary techniques. Expected Learning Outcomes Upon completion of the course, the student will be able to: 1. critically use the fundamental tools of mathematical analysis for functions of a single variable; 2. apply acquired theoretical results to physics and engineering disciplines, in both the modeling and technical calculation phases; 3. analyze problems using both qualitative and quantitative approaches; 4. adapt and implement basic approximation methods in practical applications.
MATHEMATICAL ANALYSIS B	I	The course aims to provide fundamental tools in linear algebra and the study of functions of several variables. Specifically, it introduces complex vector spaces, matrix algebra, the representation of linear maps between vector spaces, and the connections to the solvability of linear systems and changes of basis. Once the necessary terminology is established, the course addresses the study of functions of several variables, covering local and global properties as well as polynomial approximation. Unconstrained and constrained optimization problems are examined. The multidimensional Riemann integral is introduced, and methods for its calculation are developed. Vector fields are introduced, with applications to Gauss's theorem. Expected Learning Outcomes Upon completion of the course, the student will be able to: 1. critically use fundamental tools of mathematical analysis for functions of several variables; 2. apply the theoretical results acquired to physics and engineering disciplines, in both the modeling and technical calculation phases; 3. analyze problems using both qualitative and quantitative approaches; 4. adapt and implement basic approximation methods in practical applications.
GENERAL, INORGANIC AND ORGANIC CHEMISTRY	I	Module A of the course, designed for students in scientific degree programs, offers a comprehensive and detailed introduction to the fundamental theoretical and experimental principles of general chemistry, with frequent references to real-world applications. Expected Learning Outcomes Students are expected to gain an in-depth understanding of: - the atomic model and its application to electron configurations and the periodic table; - the covered aspects of thermochemistry and kinetics; - acid-base theory; - chemical equilibrium. Students are also expected to develop the ability to: - draw Lewis structures; - predict stereochemistry using VSEPR theory; - draw molecular orbital diagrams for simple diatomic molecules; - perform simple stoichiometry calculations (including balancing chemical equations). Finally, it is essential to learn how to use periodic properties, intermolecular interactions, and concepts of thermodynamics, kinetics, and chemical equilibrium to interpret the wide range of phenomena in general chemistry. Module B aims to introduce and develop fundamental concepts of organic chemistry for students who have already mastered the basics of general and inorganic chemistry. Expected Learning Outcomes The objective is to acquire knowledge of: - the nomenclature of organic substances and functional groups in organic chemistry; - the stereochemistry of organic molecules and their three-dimensional spatial orientation; - compound reactivity and how specific transformations can be promoted by influencing kinetic and thermodynamic parameters; - synthesis and the study of methods for preparing organic compounds of varying molecular complexity. It will also be important to acquire

Course name	*Year*	*Formative objectives – from course syllabus*
		concepts regarding the chemistry of natural compounds and knowledge of the main classes of natural organic compounds, such as carbohydrates, proteins, lipids, and nucleic acids.
PHYSICS A	I	The Physics A course aims to teach both the specific content of classical physics—primarily mechanics and fluid dynamics—and a working methodology based on the scientific method, designed to foster students' critical thinking when approaching problems. In this way, the course contributes to shaping the professional profile envisaged by the Degree Programme in Occupational and Environmental Safety Engineering, particularly by developing independent judgment and the ability to analyze complex issues. Expected Learning Outcomes Upon completion of the course, students will be able to: - Identify the physical phenomena described by classical mechanics and fluid physics - Correctly apply the laws of classical physics to provide a quantitative explanation of these phenomena - Critically evaluate physical phenomena by applying the scientific method - - Independently solve physics problems, clearly and comprehensively justifying the choice of physical laws and the various steps taken.
PHYSICS B	I	The Physics B course aims to teach both the specific content of classical physics—primarily electromagnetism—and a working methodology based on the scientific method, designed to foster students' critical thinking when addressing problems. In doing so, it contributes to the professional profile defined by the Degree Course in Occupational and Environmental Safety Engineering, particularly by developing independent judgment and the ability to analyze complex issues. Expected Learning Outcomes Upon completion of the course, students will be able to: - Recognize electromagnetic phenomena - Correctly apply the laws of classical physics to provide a quantitative explanation of these phenomena - Critically evaluate physical phenomena by applying the scientific method - Independently solve physics problems, clearly and comprehensively justifying the choice of physical laws and the various steps taken.
EVALUATION OF PRELIMINARY KNOWLEDGE	I	The exam consists of the TOLC-S, administered online by CISIA (Inter-University Consortium for Integrated Access Systems) via the TOLC@CASA mode, and is structured as follows: - Basic Mathematics: 20 questions in 50 minutes - Reasoning, Problem Solving, and Reading Comprehension: 15 questions in 30 minutes The test also includes other thematic sections that do not count towards the passing requirement. Scoring is as follows: 1 point for each correct answer, 0 points for each unanswered question, and a penalty of -0.25 points for each incorrect answer. The exam is considered passed if the student achieves a minimum score of 8 on the 20 questions in the Basic Mathematics module (8/20) and a minimum score of 5 on the 15 questions in the "Reasoning, Problem Solving, and Reading Comprehension" module (5/15). There are no score thresholds for the other modules included in the test. For details regarding the TOLC-S content, please refer directly to the CISIA Syllabus: https://www.cisiaonline.it/area-tematica-tolc-scienze/struttura-della-prova-e-sillabo/
HYGIENE AND SAFETY OF WORKPLACES	I	The course is structured into two modules: WORKPLACE AND CONSTRUCTION SITE SAFETY and GENERAL AND OCCUPATIONAL HYGIENE. The primary objective of the WORKPLACE AND CONSTRUCTION SITE SAFETY module is to raise student awareness regarding workplace health and safety issues as well as environmental aspects, providing them with the professional foundation to facilitate workplace learning and promote correct, rational behaviors. The course aims to lay the groundwork for various subsequent courses within the degree program that will address occupational health and safety topics. With regard to waste, water, and air, the expected learning outcomes are as follows: - understanding the conceptual foundations of workplace safety - understanding current Italian regulations - understanding the concepts of hazard and risk - identifying and classifying major workplace risks - understanding general methods for managing workplace risks - understanding the key documents required for risk management in various settings

Course name	*Year*	*Formative objectives – from course syllabus*
		- identifying data sources for studying workplace accident issues - identifying the bodies responsible for oversight and support regarding workplace risk management - understanding the requirements and methods for planning training in the field of workplace safety The course covers fundamental concepts, alongside in-depth theoretical analysis and practical applications. Expected Learning Outcomes By the end of the course, students will be able to: - help identify workplace risks - help plan workplace risk management - help draft the documents required for workplace safety management - help evaluate safety management by comparing collected data with literature data - help identify workers' training needs - help plan workplace safety training - help assess the effectiveness of the training. The GENERAL AND OCCUPATIONAL HYGIENE module aims to provide students with knowledge regarding the principles of prevention and hygiene in living and working environments. The course also aims to provide knowledge concerning concepts of risk assessment for human health and the environment. Expected Learning Outcomes By the end of the course, the student will be able to: - understand safety and prevention concepts regarding formal, regulatory, and substantive aspects - identify the main environmental risk agents (chemical, physical, and biological) and the ways in which exposure to these agents occurs in living and working environments - understand the main methods used to study key risk factors (sampling, monitoring, analysis, and exposure assessment) - - understand the principles of risk assessment and the main measures for protecting human health and the environment.
ENGLISH	I	During their studies, students will acquire the knowledge necessary to communicate effectively in English—both in writing and orally—at a level of at least B1 according to the Common European Framework of Reference, thereby rounding out their education to meet the demands of the professional world. Students will have the opportunity to develop the communication skills needed to understand specialized texts and consult databases, online information, and industry-specific bibliographic material.
COMPUTER SCIENCE AND STATISTICS FOR ENGINEERING	II	The primary objective of the course is to provide students with the knowledge and skills to use statistical and computational tools for data analysis and the study of physical phenomena related to safety, as well as the fundamentals of using CAD systems for the design and analysis of technical systems. Instruction will cover probability calculations and the use of statistical tools for data analysis and the study of phenomena. Alongside the theoretical component, students will learn to use key software tools for data analysis and process modeling (spreadsheets, MATLAB, statistical software, and CAD). Expected Learning Outcomes Upon completion of the course, students will be able to: - Use the acquired software tools; - Study data and phenomena using appropriate analytical methods; - Analyze data and phenomena using computational tools; - Apply statistical analysis, measurement techniques, and probability concepts; - Use precise technical terminology appropriate to the subject matter; - Use CAD tools.
ELECTRICAL ENGINEERING, SYSTEMS AND ELECTRICAL RISK	II	The course on electrical engineering, electrical systems, and electrical hazards is part of the Bachelor's Degree program in Occupational and Environmental Safety Engineering and focuses on electrical safety in the workplace. It provides students with the fundamental concepts and methods needed to analyze and understand electrical phenomena, identify risks associated with electric current, and acquire the basic skills required to mitigate electrical hazards. The course aims to introduce students to key electrical quantities and their units of measurement, as well as the tools necessary to analyze and solve basic circuits under steady-state, sinusoidal (single-phase and three-phase), and transient (first- and second-order) conditions. Basic concepts regarding electric power transmission and distribution systems and the main components of electrical installations will also be covered. Regarding electrical safety, the course will describe the pathophysiological effects of electric current on the human body and the primary devices used for protection against electrical hazards arising from accidental contact (both direct and indirect). Expected Learning Outcomes

Course name	*Year*	*Formative objectives – from course syllabus*
		Upon completion of the course, the student will be able to: - identify the main two-terminal components (bipoles) in an electrical schematic; - determine voltages and currents in the branches of a simple electrical network; - apply the main methods for solving electrical networks under steady-state, sinusoidal, and transient (first-order) conditions; - recognize the main electrical system configurations; - identify the key components of an electrical system; - recognize the hazards associated with electric current resulting from accidental contact; - identify the main devices used for protection against accidental contact (direct and indirect).
ENVIRONMENTAL TECHNICAL PHYSICS	II	The course serves a dual purpose: it acts as a bridge to consolidate the fundamental knowledge acquired in the Physics course, and it provides an introduction to the basics required to address various aspects of indoor environmental quality—specifically thermal-hygrometric, lighting, and acoustic comfort. Expected Learning Outcomes Upon completion of the course, the student will be able to: - Understand the principles of thermodynamics and apply them to practical scenarios. - Understand the properties of pure substances. - Understand the operation of direct and reverse thermodynamic cycles and evaluate their efficiency. - Understand the fundamental concepts of thermal-hygrometric comfort in indoor spaces and the processes involving moist air mixtures. - Understand heat transfer phenomena in all forms (conduction, convection, and radiation) and correctly formulate and solve problems involving these heat transfer mechanisms. - Understand the fundamentals of lighting design for indoor environments. - Communicate and discuss issues related to the course content, engage in conversations on topics within the field of technical physics, and—in particular—highlight the connections between fundamental principles and practical applications. - - Solve the assigned problems.
PLUMBING AND HYDRAULIC SYSTEMS	II	The course aims to provide knowledge regarding: - relevant physical quantities and the fundamental principles of hydraulics; - the application of these principles to the operation and analysis of specific hydraulic systems. Within the ISLA educational program, this course is classified as a foundational engineering subject. Expected Learning Outcomes Upon completion of the course, the student will be able to: - calculate pressure distribution in static liquid systems; - calculate hydrostatic forces acting on plane surfaces; - calculate head losses in pressurized pipelines; - perform hydraulic checks on simplified layouts for drinking water abstraction, conveyance, and distribution; - - carry out preliminary sizing for simplified urban drainage network layouts.
ENVIRONMENTAL HEALTH ENGINEERING	II	The course provides the fundamentals of Sanitary-Environmental Engineering—specifically regarding pollution control—serving as a foundational training for technical professionals in the waste, water (supply and wastewater), and air sectors. With regard to waste, water, and air, the expected learning outcomes are as follows: - understanding management principles within the European Union; - understanding current Italian regulations; - understanding the key parameters for their characterization; - for waste: understanding the principles of the circular economy and sustainability; - understanding pollution prevention principles; - understanding treatment and purification processes. The course covers fundamental concepts alongside theoretical in-depth analysis and practical applications. Expected learning outcomes. Upon completion of the course, students will be able to: - assist in classifying water and waste based on qualitative and quantitative characteristics; - assist in evaluating water and waste management strategies; - assist in evaluating mechanical treatments and classifying Solid Recovered Fuel (SRF);

Course name	*Year*	*Formative objectives – from course syllabus*
		- assist in comparing aerobic and anaerobic biological treatments applied to waste; - assist in interpreting waste thermal treatment flowsheets; - assist in comparing landfilling solutions with and without pre-treatment; - assist in comparing treatment solutions for polluted gaseous streams; - assist in distinguishing between different water pollution phenomena; - assist in evaluating water potabilization solutions; - assist in developing an integrated view of wastewater purification and sludge/waste treatment; - assist in evaluating potential reuse solutions for treated wastewater.
STRUCTURAL MECHANICS	II	The course aims to provide students with the following competencies: - Knowledge of the fundamental concepts of three-dimensional solid mechanics: statics, kinematics, and constitutive relations; - Knowledge of the principles and theorems of continuum mechanics; - Application to beam systems (statically determinate and indeterminate) and planar (two-dimensional) systems. Expected Learning Outcomes Knowledge and understanding: - acquiring information regarding the behavior of continuous solids; - mastering structural analysis methods to determine internal forces and deformations in beam-based structures; Ability to apply knowledge and understanding: - ability to read and comprehend technical/scientific texts regarding the behavior of continuous media; Learning skills: - ability to solve the assigned problems. Communication skills - demonstrating the ability to extract and synthesize relevant information; demonstrating good communication, reading, and writing skills.
REMEDIATION OF CONTAMINATED SITES	II	The primary objective of the course is to contribute to the training of qualified technicians in the field of environmental monitoring and, specifically, environmental remediation, in alignment with the professional profiles identified in section A2.a of the Degree Programme's Annual Study Programme Card (SUA-CdS). Expected Learning Outcomes Upon completion of the course, students will have developed the following knowledge and skills, consistent with the Degree Programme's learning outcomes: - knowledge of the regulatory framework governing the discipline; - knowledge of the most widely used technologies for the characterization, remediation, and management of contaminated sites; - knowledge of the administrative and procedural steps to be followed in the event of site contamination; - ability to set up a risk analysis using specialized software; - ability to diagnose the problem and identify/apply Best Available Technologies for the remediation of contaminated sites. Students will also develop communication skills and independent judgment.
GEOTECHNICS	II	The primary objective of the course is to provide students with the theoretical foundations of the mechanical and hydraulic behavior of soils, equipping them with the tools necessary to solve key geotechnical engineering problems (such as the verification and design of shallow foundations and earth-retaining structures). Within the ISLA educational program, this course is classified as a core engineering subject. The study of soil mechanics begins with experimental evidence and proceeds through physico-mathematical modeling. The geotechnical characterization of a soil deposit—involving in-situ and laboratory investigations and the subsequent development of a geotechnical model—will be addressed to support the design of foundation systems.
ELEMENTS OF GEOLOGY, HYDROGEOLOGY AND SEISMIC RISK	II	The aim of the course is to enable students to acquire the knowledge and skills necessary to identify and manage: A) types of hydrogeological, seismic, and volcanic hazards; B) measures to mitigate disasters associated with hydrogeological, seismic, and volcanic activity. Students will gain practical experience with the materials, methods, and tools of Environmental Geology, specifically regarding the assessment of site stability and safety in terms of hydrogeological, seismic, and volcanic factors. Expected Learning Outcomes Students will be able to assess variability and scale factors in natural processes related to hydrogeology, seismicity, and volcanism, and to determine the vulnerability of the physical environment to hydrogeological, seismic, and volcanic phenomena. Students will be able to evaluate geological criteria for siting facilities at risk of major accidents—considering potential impacts from floods,

Course name	*Year*	*Formative objectives – from course syllabus*
		earthquakes, and volcanic eruptions—and the associated methodological implications.
PROCESS ENGINEERING, RELIABILITY AND SAFETY	III	Companies and processes handling hazardous substances—specifically those capable of causing accidents with severe consequences for workers and the public, such as fires, explosions, or the release of toxic gases—require thorough safety analysis and characterization. The course aims to equip students with the knowledge necessary to manage the safety of production processes in facilities classified as high-risk. This is achieved by acquiring specific fundamental knowledge regarding risk assessment in both process industries and facilities subject to major-accident hazards. Expected Learning Outcomes Upon completion of the course, the student will be able to: - identify hazards and accident scenarios in industrial environments; - qualify and quantify (in probabilistic terms) the risk and assess the magnitude of the accident events identified during the hazard identification phase; - identify and propose mitigation measures and emergency response systems.
STRUCTURAL DESIGN	III	The course aims to provide students with the following skills: - analysis of statically determinate and indeterminate beams; - analysis of plane frames using the displacement method; - design concepts: semi-probabilistic limit state design method and load analysis; - design techniques for reinforced concrete structures at the serviceability limit state; - design techniques for reinforced concrete structures at the ultimate limit state; - detailing of reinforced concrete structural elements. Expected Learning Outcomes Knowledge and understanding: - acquiring the necessary information regarding the modeling of design actions on a structure; - mastering structural analysis techniques to determine internal forces and deformations in a structure; - possessing the necessary information to critically approach the design or verification process of a reinforced concrete structure. Applying knowledge and understanding: - ability to read, understand, and comment on technical/scientific texts regarding the structural behavior of reinforced concrete structures (including in English); - ability to identify key structural issues required for developing technical documentation to support structural design reports; - ability to solve statically determinate and indeterminate beam systems; - knowledge of the regulatory framework for structures; - knowledge of design criteria for reinforced concrete structural elements. Learning skills: - ability to solve the proposed problems; - ability to read, understand, and comment on technical documents supporting structural strength assessments (including in English). Communication skills: - demonstrating the ability to extract and synthesize relevant information; - demonstrating good communication, reading, and writing skills; - demonstrating the ability to communicate effectively with industry experts.