



**UNIVERSITÀ DEGLI STUDI
DELL'INSUBRIA**

**TEACHING REGULATIONS FOR
BACHELOR'S DEGREE COURSE
IN COMPUTER SCIENCE**

DESCRIPTION OF THE CURRICULUM
(TEACHING REGULATIONS OF THE COURSE)

BACHELOR'S DEGREE COURSE
IN COMPUTER SCIENCE (L-31 R)

A.Y. 2025-2026



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1. General information and organization

The Bachelor's Degree Program in Computer Science, L-31 R – Computer Science and Technology (Ministerial Decree of March 16, 2007, reformed under Ministerial Decrees 1648/23 and 1649/23), is offered according to the 2025 academic curriculum.

The three-year Bachelor's Degree in Computer Science, with open access, aims to provide a solid foundation in the main areas of computer science, including software programming and design, computer and network architectures, operating systems, data management systems, data analysis and security, and algorithms. Additionally, the program aims to develop a strong command of mathematical methods and languages, which are essential to understand and assimilate the continuous innovations that characterise computer science.

The degree program allows for a high degree of customisation of the educational path starting from the second year, through the selection of complementary courses. This flexibility enables students to tailor their training either toward current, job-market-ready technological skills or toward more in-depth knowledge of computer science methodologies, in order to better prepare for advanced studies in a Master's Degree Program in Computer Science – also offered by the University of Insubria.

The skills acquired make graduates in Computer Science highly competitive for a wide range of roles: from freelance professionals to employment in public administration; from working in companies that produce goods and services or in data processing centres, both public and private, to consulting activities. Students also have the opportunity to undertake internships in companies to gain real-world experience, or within the Department responsible for the degree program.

Courses are held in Varese at the University Campus. Since the 2019/20 academic year, a teaching channel has also been available at the Como campus to improve access to teaching activities for students from Como and surrounding areas.

In addition to traditional lectures, the program includes laboratory activities starting from the first year, allowing students to put their learning into practice.

The degree program has been awarded the GRIN Quality Seal. This seal, issued by the Italian Association of University Computer Science Professors, represents a true mark of quality for university-level computer science education, based on the certification of content quality.

The academic structure responsible for the program is the **Department of Theoretical and Applied Sciences**.

The President of the Degree Program Council is **Professor Brunella Gerla** ([link](#)).

The relevant teaching office is available by appointment via Microsoft Teams and responds to emails received through **INFOSTUDENTI**. (INFOSTUDENTI is the web application that provides a communication channel with various University offices—including Student Services, Student Rights Office, Career and Placement Services, and Teaching Offices—available to both students and external users. Through this system, users can submit inquiries, receive responses, attach documents, and track the status of their requests.)



2. Admission to the study program

The course has open admission. In accordance with current regulations, to enrol in the Bachelor's degree programme, applicants must hold an upper secondary school diploma or an equivalent qualification obtained abroad, recognised as suitable. The required knowledge is not linked to a specific type of secondary school diploma. The following knowledge and skills are considered sufficient: a good general education; logical reasoning and reading comprehension skills; and a sound understanding of basic mathematical concepts.

Enrolment in the degree programme is open. However, all enrolled students are required to take an assessment test to evaluate their initial preparation in areas such as mathematics, reasoning and problem-solving, reading comprehension, and basic sciences.

Students must take the **TOLC-S** initial knowledge assessment test (in the **TOLC@CASA** format), provided by **CISIA** (Interuniversity Consortium for Integrated Access Systems). The test can be taken at any participating university, and may be retaken multiple times, but in any case, no later than **30 November**.

The test is considered passed if the student achieves at least:

- a **section score of 7** in the “Basic Mathematics” module, and
- a **section score of 3** in the “Reasoning, Problem Solving and Text Comprehension” module.

Students must send the CISIA-issued certificate by **30 November**, even in the event of an unsatisfactory result, following the instructions provided on the degree programme's webpage.

Students who do not pass the TOLC-S by 30 November will have their academic record temporarily **blocked** (which means they cannot take exams), and will be assigned an **Additional Learning Requirement (OFA)**. The OFA consists of a compulsory remedial course followed by a further test, which must be passed by the end of the first semester.

The OFA will be considered fulfilled if, by **30 September of the calendar year following enrolment**, one of the following conditions is met:

- passing a new TOLC-S test provided by CISIA, or
- passing the *Algebra and Geometry* exam (a first-semester course in the first year of the degree programme).

Progression to the second year in regular standing is conditional upon fulfilling the OFA requirement by **30 September** of the calendar year following enrolment.

In the case of **late enrolments**, the Degree Programme Council may arrange **extraordinary test dates** and **dedicated support sessions** for students assigned OFA.

Students who fail to take the initial knowledge assessment test or who do not submit the CISIA certificate will have a block placed on their academic record and will not be allowed to take any exams.

Exemptions from the test apply to:

- Students transferring from another degree programme at the University of Insubria (internal transfer), provided they have already taken an initial knowledge assessment equivalent to that required for this programme;
- Students transferring from another university where they have already taken an equivalent initial knowledge assessment;
- Students enrolling who have already obtained a university degree.

Students requesting an exemption must submit either a certificate or a self-declaration to the Student Office proving they have met the requirement during their previous academic career.

To prepare for the assessment test, students may use CISIA's resources, such as the **Basic**



Mathematics MOOC (available after registering at <https://lms.federica.eu/enrol/index.php?id=568>). Additionally, preparatory courses for the entry test are organised by the University between late August and early September: <https://www.uninsubria.it/la-didattica/orientamento/precorsi>. **Further information about the assessment test (procedures and syllabus)** is available here: <https://www.uninsubria.it/link-veloci/cerca-i-servizi/test-di-verifica-delle-conoscenze-corso-di-laurea-informatica>

3. *The educational path*

The programme does not include predefined tracks or curricula. The study plan includes **7 compulsory modules in the first year, 7 in the second year, and 3 in the third year**. In addition, there are **two elective blocks** where students may choose a total of **4 modules** to include in their study path. The third year also includes **12 ECTS credits (CFU)** of free-choice courses and **15 ECTS credits for internships**. There are two progression requirements, one at the end of the first year and one at the end of the second year, as outlined below.

Enrolment in the second year: Students may enrol in the second year provided they have passed modules worth at least **18 ECTS credits** with a grade by **September** of the academic year following their initial enrolment. Students who do not meet this requirement will be registered again as **first-year repeaters**.

Enrolment in the third year: Students may enrol in the third year provided they have passed modules worth at least **48 ECTS credits** with a grade by **September** of the academic year following their enrolment in the second year. Students who do not meet this requirement will be registered again as **second-year repeaters**.

Attendance is not compulsory but is strongly recommended. Regular attendance allows for consistent engagement with teaching staff and promotes a thorough understanding of course content as well as a balanced distribution of the study workload.

Support for Students with Disabilities or Specific Learning Difficulties (SLD):

To support the academic journey of students with declared disabilities or SLD, once they have contacted the Office for Services to Students with Disabilities or SLD to activate the relevant support measures, the Degree Programme Board will provide teaching staff with the list of such students, as received from the above office. This is to ensure that suitable arrangements are made for participation in lectures and laboratory sessions, and to support exam preparation. The Programme Director is the academic point of contact for students with disabilities.

Working students can stay up to date with course content via the **e-learning platform** used by teaching staff to upload teaching materials. Working students are encouraged to contact module lecturers directly for advice on how to make best use of the resources provided.

Credit System (CFU) and Student Workload

The **University Credit (CFU)** is a measure of the total student workload, including individual study, required to acquire knowledge and skills as specified in the degree programme's teaching regulations, in line with Article 5 of Ministerial Decree 270/04.

Each learning activity (lecture, laboratory, internship, thesis, etc.) corresponds to a specific number of credits. Each CFU represents **25 hours of total student commitment**, including both contact hours with lecturers and independent study.



Correspondence between CFU and hours of activity:

- Lectures: up to 8 hours per CFU
- Tutorials/Practical classes: up to 12 hours per CFU
- Laboratory activities: up to 16 hours per CFU
- Internships: 25 hours per CFU

Definitions:

- **Lectures:** The primary form of teaching, during which students attend classes delivered by lecturers and independently work on the material presented.
- **Tutorials/Practical classes:** These support the understanding of lecture content through exercises and applications. They typically do not introduce new content. In *passive tutorials*, the lecturer solves problems; in *active tutorials*, students complete tasks under supervision.
- **Laboratory work:** Supervised hands-on activities involving tools, equipment, or software packages.
- **Project laboratories:** Supervised group or individual projects guided by one or more lecturers from various disciplines.
- **Internship:** A structured activity involving the development of a project, either externally or within the department, covering all phases (problem analysis, literature review, proposal, implementation, and evaluation). Supervised by an academic tutor and, for external placements, an industry tutor.
- **Final thesis:** A written report, produced in agreement with the academic tutor, describing a project or study, typically carried out during the internship.

4. *Assessment Methods*

Learning is assessed through written and/or oral exams. Lecturers may also adopt alternative methods of assessment, such as projects, reports, or presentations, which may replace part or all of the final exam. For students with disabilities or SLD, assessment methods are adapted by the lecturer in accordance with the individual learning plan provided by the Office for Services to Students with Disabilities.

Assessment and evaluation methods are detailed in each module's syllabus.

In order to be admitted to the examinations of the Bachelor's degree programme, students must comply with the following **prerequisite rules**:

Module (Cannot be taken unless the following has been passed)	Prerequisite Module(s)
Concurrent and Distributed Programming	Programming
Operating Systems	Programming + Computer Architecture
Software Engineering	Programming
Databases	Programming
Mobile Device Programming	Programming + Computer Architecture



Module (Cannot be taken unless the following has been passed)	Prerequisite Module(s)
Logic	Algebra and Geometry
Automata and Formal Languages	Algebra and Geometry
Functional Programming	Programming

5. Graduation exams

The final examination consists of the preparation of a written dissertation, produced under the supervision of an academic tutor, who also acts as the supervisor.

The **syllabus for the final examination** is available on the programme's webpage: <https://www.uninsubria.it/triennale-informatica> under "*Percorsi formativi e programmi*", by selecting the relevant cohort.

The dissertation must be submitted by the student according to the University's procedures, detailed at: <https://www.uninsubria.it/servizi/vivere-insubria/laurearsi/esame-di-laurea-triennale-e-magistrale-informatica>

The dissertation may be written either in Italian or in English (in the latter case, an adequate summary in Italian must be included).

The degree awarding session is public, and is preceded by a public evaluation phase during which the candidates are assessed by a restricted Examination Committee, appointed by the Programme Director.

The final mark depends partly on the type of activity carried out by the student, which may include:

- a) a report and analysis of work completed during an internship at an external company or organization;
- b) a report on experimental and/or theoretical work conducted as part of a research project within the University;
- c) a review-based report on innovative methodologies or technologies proposed as solutions to emerging challenges.

The overall final mark is expressed out of 110.

The final degree classification is calculated by summing the following components:

1. The weighted average, based on credits, of the marks obtained in individual examinations, expressed out of 110, in accordance with the University's Student Regulations;
2. An additional score based on the outcome of the final examination:
 - 0 to 7 points for dissertations of type a) or b);
 - 0 to 3 points for dissertations of type c);
3. An additional bonus of up to 3 points may be awarded to students who have undertaken a study period abroad under the ERASMUS programme, in accordance with the criteria below.

The additional score mentioned in point 2 is determined based on the following criteria:

- Achievement of the stated objectives;
- Accuracy, clarity, and conciseness of the presentation;
- Appropriateness of the tools and methods used;
- Correct application of tools and methods, and the quality of the results;
- Innovation of the proposed solutions;



- Satisfaction of the external supervisor (for internships carried out in external organizations);
- Autonomy and initiative demonstrated by the student during the preparation of the final dissertation.

For dissertations of type a), the additional score will also take into account the evaluation provided by the external company tutor regarding the student's work.

The additional points under item 3 (ERASMUS) are assigned based on two indicators of the student's academic achievement abroad:

- N = number of ECTS credits recognized in the student's academic record as a result of passing exams included in the Learning Agreement (including any subsequent modifications), taken at the host university;
- M = average mark, converted to thirtieths, of the exams recognized and validated in the student's academic record from the host university.

The score is awarded according to the following rules:

- 1 point if N is between 20 and 29 ECTS (inclusive);
- 2 points if N is 30 ECTS or more and M is no more than 25/30;
- 3 points if N is 30 ECTS or more and M is greater than 25/30.

Following the evaluation phase described above, the restricted committee delivers a confidential assessment of the dissertation to the final degree board, composed of five members, in accordance with the University Teaching Regulations (Art. 29 – [link](#)).

If the final score, after all additions, reaches or exceeds 110, the awarding of honours (cum laude) may be granted unanimously by the degree board. Honours are awarded in recognition of outstanding mastery of core concepts and methods, exceptional critical thinking and application skills, or evident autonomy and originality demonstrated during the final project.

The degree is formally awarded in a public session.

Credits and Documentation

The final examination is worth 3 ECTS credits.

The calendar of graduation sessions and the instructions for registration are available at: <https://www.uninsubria.it/servizi/vivere-insubria/laurearsi/esame-di-laurea-triennale-e-magistrale-informatica> Upon graduation, students are issued a Diploma Supplement, an informative document accompanying the official degree certificate. It describes the nature, level, context, content, and status of the studies completed. The Diploma Supplement is issued in both Italian and English.

Its purpose is to provide transparent and internationally comparable academic information, to ensure fair academic and professional recognition, and to facilitate student mobility. The Diploma Supplement complies with the Europass standard.

The relevant regulations and a sample document can be found at:

<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>



ATTACHMENTS

Attachment 1 - Planned Teaching - Cohort 2025/2026

I° YEAR							
COURSE TITLE	MODULE	CFU	S.S.D.	DISCIPLINARY AREA/ TAF	HOURS	semester	ASSESSMENT METHODS *
ALGEBRA AND GEOMETRY		9	MAT/02	A / Mathematical-physical training	LEZ:72	First	V
COMPUTER ARCHITECTURE		9	INF/01	A / Computer training	LEZ:56 ESE:24	First	V
COMPUTER PROGRAMMING		12	ING-INF/05	B / Scientific and technological training	LEZ:80 ESE:24	First	V
MATHEMATICAL ANALYSIS		9	MAT/05	A / Mathematical-physical training	LEZ:64 ESE:12	Second	V
ALGORITHMS AND DATA STRUCTURES		9	INF/01	A / Computer training	LEZ:72	Second	V
ENGLISH		6	L-LIN/12	AND/For knowledge of at least one foreign language	LEZ:48	Second	V
INTERDISCIPLINARY LABORATORY A and B	INTERDISCIPLINARY LABORATORY A	3 (di 6)	ING-INF/05	B / Scientific and technological training	LEZ:8	Second	I
ASSESSMENT TEST		0	NN	NN	LEZ:0	ND	I

II° YEAR							
COURSE TITLE	MODULE	CFU	S.S.D.	DISCIPLINARY AREA/ TAF	HOURS	semester	ASSESSMENT METHODS *
INTERDISCIPLINARY LABORATORIUM A and B	INTERDISCIPLINARY LABORATORIUM B	3 (di 6)	ING-INF/05	B / Scientific and technological training	LEZ:8	Second	V
DATABASE SYSTEMS		9	INF/01	B / Scientific and technological training	LEZ:64 LAB:16	First	V
SOFTWARE DESIGN		8	ING-INF/05	B / Scientific and technological training	LEZ:48 ESE:24	First	V
OPERATING SYSTEMS		8	INF/01	B / Scientific and technological training	LEZ:48 ESE:24	First	V
DISTRIBUTED AND CONCURRENT PROGRAMMING		8	ING-INF/05	B / Scientific and technological training	LEZ:48 ESE:24	Second	V



LOGIC		6	MAT/01	C / Related or supplementary training activities	LEZ:32 ESE:24	Second	V
PROBABILITY AND STATISTICS FOR COMPUTER SCIENCE		6	MAT/06	C / Related or supplementary training activities	LEZ:48	First	V
<p>The second-year student must also choose 12 credits from the elective courses offered by BLOCK 1 Subject area B/ Scientific and technological training. (See table ELECTIVE COURSES BLOCK 1)</p>							

III° YEAR						
COURSE TITLE	CFU	S.S.D.	DISCIPLINARY AREA/ TAF	HOURS	semester	ASSESSMENT METHODS*
AUTOMATA AND LANGUAGES	6	INF/01	B / Scientific and technological training	LEZ:40E SE:12	First	V
NETWORKING	9	ING-INF/05	B / Scientific and technological training	LEZ:64E SE:12	First	V
FUNDAMENTALS OF DATA SECURITY	6	INF/01	B / Scientific and technological training	LEZ:48	First	V
STUDENT'S CHOICE	12	NN	D / a scelta dello studente		ND	V
FINAL EXAM	3	NN	Language/Final Exam / For the Final Exam		Second	V
INTERNSHIP	15	NN	Other / Training and orientation internships	TIR:375	Annuale	I
<p>The third-year student will also have to choose: 6 CFU among the elective courses proposed by <u>BLOCK 1</u> Subject area B/ Scientific and technological training 6 CFU among the elective courses proposed by <u>BLOCK 2</u> Disciplinary Area C/Related or supplementary educational activities (see table ELECTIVE COURSES BLOCK 1 and BLOCK 2)</p>						

ELECTIVE COURSES IN CHOICE BLOCKS

BLOCK 1 Disciplinary area B/Scientific and Technological training (The student must choose 12 credits in the II YEAR and 6 credits in the III YEAR)							
COURSE TITLE	CFU	S.S.D.	DISCIPLINARY AREA/ TAF	HOURS	semester	ASSESSMENT METHODS*	
BIG DATA	6	ING-INF/05	B / Scientific and technological training	LEZ:48	Second	V	



DATABASES SYSTEMS II	6	INF/01	B / Scientific and technological training	LEZ:48	Second	V
INTERNET OF THINGS FUNDAMENTALS	6	ING-INF/05	B / Scientific and technological training	LEZ:48	Second	V
COMPUTER VISION AND ARTIFICIAL INTELLIGENCE	6	INF/01	B / Scientific and technological training	LEZ:48	Second	V
ADVANCED MODELS FOR DATA MANAGEMENT	6	INF/01	B / Scientific and technological training	LEZ:48	Second	V
PROGRAMMING MOBILE DEVICES	6	INF/01	B / Scientific and technological training	LEZ:40 LAB:16	Second	V
PROCEDURAL AND OBJECT-ORIENTED PROGRAMMING	6	INF/01	B / Scientific and technological training	LEZ:48	Second	V
INNOVATIVE TECHNOLOGIES FOR WEB DEVELOPMENT	6	INF/01	B / Scientific and technological training	LEZ:40 LAB:16	Second	V

Please note: some courses may be activated in alternate years. The final framework of the courses activated in the year of competence will be made available at the opening of the online submission/modification of the study plans.

BLOCK 2 Subject area C/Related or supplementary educational activities (The student must choose 6 credits in the III YEAR)						
COURSE TITLE	CFU	S.S.D.	DISCIPLINARY AREA/ TAF	HOURS	semester	ASSESSMENT METHODS *
MICROCONTROLLERS	6	ING-INF/01	C / Related or supplementary training activities	LEZ:48	First	V
FUNCTIONAL PROGRAMMING	6	MAT/01	C / Related or supplementary training activities	LEZ:48	Second	V
INFORMATION SYSTEMS	6	SECS-P/10	C / Related or supplementary training activities	LEZ:48	First	V

***G** – GRADE **V** – EXAM **I** – ELIGIBILITY **F** – ATTENDANCE

HOURS and type of activity **Lez**: lesson **Ese**: exercise **Lab**: laboratory **Sem**: seminar **T**: internship