



**UNIVERSITÀ DEGLI STUDI
DELL'INSUBRIA**

**DEPARTMENT OF SCIENCE AND HIGH
TECHNOLOGY**

DESCRIPTION OF THE EDUCATION COURSE (COURSE RULES)

BACHELOR'S DEGREE IN PHYSICS

2024/2025



I - GENERAL INFORMATION

NAME OF THE DEGREE PROGRAMME (CDS)	Bachelor's degree in Physics
CLASS	L-30
TYPE	3 year degree
LOCATION	Como
INTERNET ADDRESS	For information on the educational goals of the degree course, on employment opportunities, admission requirements, admission procedures, expected learning outcomes, training path/study plan, final exam, you can consult the Annual Report (SUA-Cds), published on the web page of the course at the following address: www.uninsubria.it/triennale-fisica
DEPARTMENT	Department of Science and High Technology - DiSAT https://www.uninsubria.it/ugov/organizationunit/7976
RESPONSIBLE	Professor Alessia Allevi
COURSE TEACHING SECRETARIAT	https://www.uninsubria.it/node/620
CALENDAR OF TEACHING ACTIVITIES	<u>1st semester</u> : start date 23/09/2024 – end date 17/01/2025 <u>2nd semester</u> : start date 24/02/2025 – end date 13/06/2025 <u>Exam session</u> : from 01/12/2024 to 31/03/2026 To find out the dates of suspension of the teaching activities and closures of the University facilities due to national and local holidays and other closures (Christmas Holidays, Easter Holidays, University closures), students are required to consult the University Teaching Calendar approved by the Academic Bodies at this link: https://www.uninsubria.it/chi-siamo/sedi-e-orari/calendario-didattico-di-ateneo
FURTHER INFORMATION	<ul style="list-style-type: none">• ACCESS TO THE COURSE: Free• POSSIBLE ISSUE OF DOUBLE DEGREE: Not foreseen• LANGUAGE IN WHICH TEACHING IS PROVIDED: Italian• PRESENCE OF ANY PATHS/CURRICULA: There are no paths or curricula.
ADMISSION, INITIAL KNOWLEDGE VERIFICATION AND RECOVERY OF THE ADDITIONAL LEARNING DUTIES (OFA)	The degree course in Physics adheres to the Coordination of the knowledge verification tests for the scientific degree courses organized by the National Conference of the Presidents and Directors of the University Structures of Science and Technology (con.Scienze) in collaboration with the National Plan for Scientific Degrees of the Ministry of Education and the Interuniversity Consortium of Integrated Access Systems (CISIA). Therefore, students will be able to take the <u>TOLC@Casa</u> test (unless otherwise communicated) even in an earlier session (if



	<p>any) with respect to the enrollment period. The 2024 last session will be held on November 21st 2024.</p> <p>The test is considered passed if the student correctly answers at least 10 of the 20 questions contained in the Basic Mathematics module. In case of failure, the student will be assigned OFA (additional learning duties) to be fulfilled within the first year of the course.</p> <p>Students with OFA will be provided with materials in the e-learning area on the topics of the test, on which the teachers will be available for further information and clarifications. Enrollment in the second year of the course in a regular position is in any case subject to the following obligations:</p> <ol style="list-style-type: none">1) Taking the TOLC-S to verify the initial preparation on at least one occasion, even without passing it, as it is mandatory2) Fulfillment of the OFA, which consists in achieving one of the following conditions by September 30th of the calendar year following the enrollment year:<ul style="list-style-type: none">• Attendance of the Mathematics Tutoring;• Passing the Calculus I or Linear Algebra exam. <p>https://www.uninsubria.it/link-veloci/cerca-i-servizi/test-di-verifica-delle-conoscenze-corsi-di-laurea-triennale-chimica-e</p>
<p>PREPARATORY TRAINING ACTIVITIES FOR THE VERIFICATION OF THE INITIAL KNOWLEDGE</p>	<p>In the first half of September, it will be possible to follow the lessons of the mathematics pre-courses. All indications, including dates, will be published on https://www.uninsubria.it/formazione/consigli-e-risorse-utili/orientamento/orientamento-ingresso/preparati-alluniversita</p>
<p>CAREER GUIDANCE, ENROLLMENT PROCEDURES AND OTHER ADMINISTRATIVE ASPECTS</p>	<p>STUDENT SERVICE</p> <p>The INFOSTUDENTI service is a web application that offers a communication channel through which students or potential students can obtain useful information by contacting the various offices of the University (Student Secretariats, Right to Education and Student Services, Career Guidance and Placement, Teaching Secretariats and International Relations).</p> <p>With this system it will be possible to send questions and receive the related answers by also attaching documents and following the status of your request.</p> <p>You can access the service at the following link :</p> <p>https://www.uninsubria.it/servizi/infostudenti-servizio-informazioni-gli-studenti</p>
<p>CFU University training credit</p>	<p>The work required to gain the degree is computed in CFUs. Each CFU corresponds to a standard load of 25 hours of activity:</p> <ul style="list-style-type: none">- 8 hours of lectures with 17 hours of individual study;- 12 hours of exercises with 13 hours of personal re-elaboration;- 11 hours of laboratory with 14 hours of personal re-elaboration;- 25 hours of training activities related to the preparation of the final exam.



II - STUDY PLAN

PLANNED TEACHING - COHORT 2024/2025

By planned teaching we mean the set of courses provided for the entire degree course, which must be taken by all students who enroll in the current academic year (Enrollment Cohort) to complete the training course and obtain the qualification. All the courses are given in Italian.

LES = lesson; EX = exercise session, LAB = laboratory

FUNDAMENTAL COURSES

YEAR I

SEMESTER	INTEGRATED COURSE Name	MODULES / COURSE Names	Scientific Sector SSD	SUBJECT AREA/ TAF	CFUs	Hours	Assessment Methods*	Reference Teachers
I	CALCULUS I WITH EXERCISES		MAT/05	BASIC / MATHEMATICAL AND COMPUTER SCIENCE DISCIPLINES	9	LES: 56 EX: 24	V	
I	KINEMATICS AND POINT MECHANICS		FIS/02	BASIC / PHYSICAL DISCIPLINES	7	LES: 56	V	
I	COMPUTER LAB		INF/01	OTHER / COMPUTER SKILLS	6	LAB: 66	V	
I	PROBABILITY AND STATISTICS		FIS/01	CHARACTERIZING/EXPERIMENTAL APPLICATION	7	LES: 56	V	
II	SYSTEM MECHANICS AND THERMODYNAMICS		FIS/02	BASIC / PHYSICAL DISCIPLINES	9	LES: 72	V	
II	LINEAR ALGEBRA WITH EXERCISES		MAT/03	RELATED/INTEGRATIVE / RELATED OR SUPPLEMENTARY TRAINING ACTIVITIES	8	LES: 56 EX: 12	V	
II	CHEMISTRY WITH EXERCISES		CHIM/03	RELATED/INTEGRATIVE / RELATED OR SUPPLEMENTARY TRAINING ACTIVITIES	2	EX: 24	V	
			CHIM/03	BASICS / CHEMICAL DISCIPLINES	6	LES: 48	V	
II	PHYSICS LABORATORY I		FIS/01	BASIC / PHYSICAL DISCIPLINES	6	LAB: 66	V	
II	ENGLISH LANGUAGE		L-LIN/12	LANGUAGE/FINAL EXAM / FOR THE KNOWLEDGE OF AT LEAST ONE FOREIGN LANGUAGE	3	LES: 48	V	

YEAR II

SEMESTER	INTEGRATED COURSE Name	MODULES / COURSE Names	Scientific Sector SSD	SUBJECT AREA/ TAF	CFUs	Hours	Assessment Methods*	Reference Teachers
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I	CALCULUS II WITH EXERCISES		MAT/05	BASIC / MATHEMATICAL AND COMPUTER SCIENCE DISCIPLINES	8	LES: 56 EX: 24	V		
I	OSCILLATIONS AND WAVES		FIS/02	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	9	LES: 72	V		
I	ANALYTICAL MECHANICS WITH EXERCISES		MAT/07	RELATED/INTEGRATIVE / RELATED OR SUPPLEMENTARY TRAINING ACTIVITIES	8	LES: 48 EX: 24	V		
I	ELECTROMAGNETISM	ELECTROSTATICS AND MAGNETOSTATICS	FIS/01	CHARACTERIZING / EXPERIMENTAL AND APPLICATIVE	6	LES: 48	V		
II		CLASSICAL ELECTRODYNAMICS AND SPECIAL RELATIVITY	FIS/01	CHARACTERIZING / EXPERIMENTAL AND APPLICATIVE	8	LES: 64	V		
II	QUANTUM PHYSICS I		FIS/03	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	8	LES: 64	V		
II	PHYSICS LABORATORY II		FIS/03	CHARACTERIZING / EXPERIMENTAL AND APPLICATIVE	6	LAB: 66	V		
II	MATHEMATICAL METHODS FOR PHYSICS		FIS/02	CHARACTERIZING / THEORETICAL AND FUNDAMENTALS OF PHYSICS	11	LES: 88	V		

YEAR III

SEMESTER	INTEGRATED COURSE Name	MODULES / COURSE Names	Scientific Sector SSD	SUBJECT AREA/ TAF	CFUs	Hours	Assessment Methods*	Reference Teachers	
I	QUANTUM PHYSICS II		FIS/03	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	8	LES: 64	V		
I	PHYSICS OF MATTER WITH EXERCISES	ATOMIC PHYSICS	FIS/03	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	5	LES: 40	V		
II		MOLECULAR AND SOLID PHYSICS	FIS/03	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	5	LES: 40	V		
II	NUCLEAR AND SUBNUCLEAR PHYSICS WITH EXERCISES		FIS/04	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	8	LES: 64	V		
ND	FREE CHOICE ACTIVITIES		NN	STUDENT'S CHOICE	6		V		
ND	FREE CHOICE ACTIVITIES		NN	STUDENT'S CHOICE	6		V		
ND	FINAL EXAM		PROFIN_S	Final Exam	3		V		

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

OPTIONAL COURSES (CHOICE OF A PHYSICS LABORATORY III)

YEAR III



SEMESTER	INTEGRATED COURSE Name	MODULES / COURSE Names	Scientific Sector SSD	SUBJECT AREA/ TAF	CFU	Hours	Assessment Methods*	Reference Teachers
II	PHYSICS LABORATORY III A	SUBNUCLEAR PHYSICS LABORATORY	FIS/04	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	6	LAB: 66	V	
		LABORATORY OF MODERN PHYSICS	FIS/01	BASIC / PHYSICAL DISCIPLINES	6	LES: 66	V	
II	PHYSICS LABORATORY III B	PHYSICS OF MATTER LABORATORY	FIS/03	CHARACTERIZING / MICROPHYSICS AND THE STRUCTURE OF MATTER	6	LAB: 66	V	
		LABORATORY OF MODERN PHYSICS	FIS/01	BASIC / PHYSICAL DISCIPLINES	6	LES: 66	V	

* G – GRADE, V – EXAM, I – SUTTABILITY, F – ATTENDANCE

III - RULES OF THE DEGREE COURSE

PREREQUISITES

The courses named with the suffix I are preparatory to the homonymous courses that contain the suffix II.

RECOGNITION OF LANGUAGE AND ICT CERTIFICATIONS

Any recognition of university credits (CFU) takes place automatically for the English language, by submitting to the Student Secretariat a certificate certifying the achievement of the B2 level.

RECOGNITION OF PROFESSIONAL SKILLS OR EXAMS OBTAINED IN THE PREVIOUS CAREER

Students from other Degree Programmes who have successfully passed the entrance examination can ask for the recognition of their previous career to the Student Secretariat when enrolling, indicating the activities for which they are requesting the recognition. Such a request for students previously enrolled in another university (incoming transfers) must be accompanied by the syllabus of the exams taken in the previous career: without this syllabus, the activities will not be recognized. The exam syllabus should also be attached to the applications of students previously enrolled in another course at the University of Insubria (change of course) so that the validation procedure can be concluded quickly. For students who are enrolled in years subsequent to the first, attendance will be validated for the courses of the years prior to the year of enrollment. Applications for the exam recognition after the student's enrollment will not be evaluated.

ATTENDANCE OBLIGATIONS

Attendance is compulsory only for the laboratory courses, for which attendance is required for at least 75% of the planned teaching activities. Courses with a compulsory attendance must be followed according to the year of competence. Exceptions may be granted in case of internal transfer, transfer from another university, working students or students with other justified needs and in case of a health emergency. In particular, for working students, the time schedule of the practical activities will be agreed with the teachers of the laboratory courses.

ENROLLMENT IN THE YEARS FOLLOWING THE FIRST

Students who, on the 30th of September of the calendar year following the year of enrollment, have never taken the initial knowledge test or have not fulfilled the additional educational duties cannot take the second and third year exams.

PROCEDURES FOR TRANSFERRING FROM OTHER DEGREE PROGRAMMES

Students coming from another University or from another Degree Programme of this University, or from previous cohorts, may request a transfer to the Degree Programme. Transfer requests will be considered by the Course Committee who will perform the recognition of the university credits on the basis of the following criteria:

- ✓ analysis of the program;



- ✓ evaluation of the congruity of the previous career scientific sectors and contents of the training activities, with the specific training goals of the course and of the individual activities.

The recognition is performed in accordance with art. 3 paragraphs 8 and 9 of the Ministerial decree for the redefinition of the Classes (March 16th 2007). The recognition is performed up to the amount of university credits foreseen by the course.

RULES FOR THE SUBMISSION OF STUDY PLANS AND INDIVIDUAL STUDY PLANS

The student is automatically assigned a study plan upon enrollment in the first year. At the beginning of the first semester of the third year, the student must submit his/her own study plan indicating the activities of his/her choice (including the choice of the second module of the Physics III Laboratory course). Information on the plan submission and compilation can be found on the web pages of the Student Secretariat (<https://www.uninsubria.it/servizi/presentazione-piano-di-studio>). The study plan is approved by the Course Committee.

HOW TO ENROLL IN THE INTERNATIONAL INTEGRATED EDUCATIONAL PATH (DOUBLE DEGREE)

Not foreseen

Website page of the course:

www.uninsubria.it/triennale-fisica

For students with disabilities and/or specific learning disorders, consult the following website page:

<https://www.uninsubria.it/servizi/tutti-i-servizi/servizi-studenti-con-disabilita-co-dsa>