



UNIVERSITÀ
di **VERONA**

Master's degree programme in

Medical bioinformatics

LM-18 Class of Master's Degrees in Computer Science

**DEGREE PROGRAMME
DESCRIPTION AND REGULATIONS**

(ANNUAL FACT SHEET - SUA-CdS, B1 section)

A. Y. 2024/25

YEAR OF ENROLMENT: 2024/25

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GENERAL INFORMATION

1.	DEGREE PROGRAMME WEB PAGE	The web pages of the study program provide an overview of the course organization, regulations governing functional aspects, and other university regulations useful to the student community. They describe the quality assurance system and orientation services for future students. Information on the practical organization of the course, the conduct of teaching activities, training opportunities, and useful contacts throughout the study path up to graduation can be found. Procedures and modalities for enrolling in the course, entry requirements, and support services for students, including international ones, are also available. Additionally, contact information, FAQs, notices, services, and opportunities offered by the University are provided.
2.	PROGRAMME DIRECTOR	Prof.ssa Rosalba Giugno The Programme Director chairs the Quality Assurance Group , which is in charge of the design and self-evaluation of the degree programme according to the guidelines provided by the Quality Assurance Board.
3.	PRESIDENT OF THE TEACHING COMMITTEE	Prof. Carlo Combi The Teaching Committee is responsible for planning, organising, coordinating, checking and ensuring the quality of teaching; it is up to the Teaching Committee to propose changes to the degree programme regulations and rules and decide on any relevant students' requests.
4.	ADMINISTRATIVE UNIT	Science and Engineering Teaching and Student Services Unit
5.	TEACHING STAFF, MODULES AND OFFICE HOUR	Lecturers will normally publish information about their teaching and research activities on their individual web pages, which you can access from the home page of the degree programme web page. From the home page you will also be able to access and explore the module web pages, where you will find an overview of the contents of each module. For office hours details and information, please check the individual web page of the relevant lecturer.
6.	DURATION	2 years
7.	LOCATION	Strada Le Grazie 15, 37134 Verona
8.	DEPARTMENT/SCHOOL	Department of Computer Science
9.	CURRICULUM	Unique curriculum
10.	LANGUAGE	English
11.	TEACHING MODE	In-Person lectures
12.	TEACHING MODULES	The student is entitled to use any teaching materials provided for the course. If the instructor has activated the Moodle e-learning platform, the materials contained therein remain available to students for a number of years equal to, at most, the normal duration of the study program. If the instructor has provided video recordings of the lessons, the videos remain available to students on the Panopto platform for the current and previous academic year.
13.	ADMISSION	No admission Test required
14.	REQUIRED ENTRY QUALIFICATIONS	Laurea (three-year Bachelor's degree), or other qualification gained abroad and recognised as suitable.
15.	SUBJECT REQUIREMENTS AND PERSONAL PREPARATION	For further information, please see the relevant web page .
16.	ENROLMENT	For information about how to apply, please see the relevant web page .
17.	CFU CREDITIS	As a general rule, one CFU credit equates to 25 hours of learning time. Depending on the type of teaching activity the CFU/hour ratio will be as follows:

		<ul style="list-style-type: none"> - Lectures: 1 CFU/6 hours - Practicals/laboratory activities: 1 CFU/12 ore - Professional training: 1 CFU/12 ore - Internship/professional traineeship: 1 CFU/25 ore
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MODULES		
18.	STUDY PLAN	<p>The Study Plan includes the modules and other educational activities to be attended in the two-year degree programme.</p> <p>For further information, please see the degree programme web page.</p>
19.	MODULES PER ACADEMIC YEAR	<p>A list of the modules available in the relevant academic year, listed by academic year and year of enrolment, can be found here.</p>

PROGRAMME REGULATIONS		
20.	ASSESSMENT METHODS	For each module/activity, the learning objectives, a programme description, textbooks, teaching material required and relevant assessment methods are determined. This information is available on each degree programme's website (please see the modules web pages).
21.	PRIORITY MODULES	There are no priority modules ('propedeuticità' in Italian), i.e. there is no specific order in which modules should be taken.
22.	REQUIREMENTS FOR ENROLMENT IN SUBSEQUENT YEARS	There are no requirements for enrolment in subsequent years ('sbarramento' in Italian).
23.	CHOOSING YOUR CURRICULUM	The program does not include specific curricula.
24.	ELECTIVE MODULES AND ACTIVITIES (TYPE D)	<p>Students are allocated 12 CFU (Crediti Formativi Universitari) for Type D elective activities.</p> <p>Out of these, 6 CFU must be used for an elective course that falls under one of the following categories:</p> <ul style="list-style-type: none"> a) offered within the educational offerings of the Medical Bioinformatics programme (i.e., among the remaining courses from alternative exam packages as outlined in the study plan). b) Offered within the integrated didactic teachings listed on the dedicated page under "Teachings and other activities that can be autonomously entered into the transcript." c) Offered within the educational offerings of the University of Verona. d) Offered at other Italian universities. <p>If the chosen courses fall under categories a) and b), they can be automatically included in the study plan by the student and therefore recognized. If the chosen courses fall under categories c) and d), they must not cover elementary computer science content, and the student must submit their choice to the Student Procedures Committee for verification of correctness.</p> <p>The remaining 6 CFU can be used for additional courses (from the aforementioned categories: a, b, c, d) or for:</p> <ul style="list-style-type: none"> - Courses from the Teaching and Learning Center (TaLC);

		<ul style="list-style-type: none"> - University initiatives, subject to approval by the Teaching Committee; - Additional language skills beyond those specified in the study plan, up to a maximum of 6 CFU in total; - Other activities useful for career integration or furthering educational development, subject to prior positive assessment by the Student Procedures Committee. <p>Note: CFU from professional internships or work placements cannot be recognized under Type D activities.</p>
25.	ADDITIONAL TRAINING ACTIVITIES (F), INTERNSHIPS, WORK PLACEMENT, ETC	<p>For other educational activities (Type F activities), 6 CFU are reserved, of which 3 CFU are mandated by the study plan for the acquisition of additional language skills (it is suggested to achieve C1 level in English).</p> <p>The remaining 3 CFU must be earned through internship activities aimed at providing students with direct knowledge in fields that are particularly useful for entering the workforce and acquiring specific professional skills. These activities must be carried out in the context of laboratory or seminar courses, under the direct responsibility of a single lecturer, or through internships/professional traineeships at companies accredited by the University of Verona, public administration entities, or public or private laboratories (including laboratories within the Science and Engineering area). For the recognition of credits earned through internships, the University's student regulations apply. If the number of credits earned exceeds the credits provided in Type F (i.e., 3 CFU), the excess credits will be recognized only as additional credits.</p> <p>Internship/professional traineeship activities are to be agreed upon in advance and subsequently certified by the responsible lecturer or tutor, along with the assessment of the predetermined educational objectives and the acquisition of the corresponding credits. Some internship proposals may be published in the "List of Thesis and Internship Proposals" section on the degree programme's webpage related to the final exam.</p> <p>Recognition of Work Activities</p> <p>Working students can obtain recognition for a maximum of 3 CFU of Type F activities required by their study plan by submitting an application to the student administration office (carriere.scienze@ateneo.univr.it) indicating their employment status (employee or self-employed) and a project they are developing or have developed during their work activity, corresponding to the number of credits to be certified. The request will be subject to the evaluation of the Student Procedures Committee, which will verify its consistency with the educational path.</p>
26.	TRANSVERSAL/SOFT SKILLS	<p>The Teaching and Learning Center at the University of Verona offers courses aimed at acquiring transversal/soft skills, which can be useful in many contexts: from the personal and working sphere to civic engagement. For information about how to apply, see the relevant web page.</p>
27.	HOW TO SUBMIT YOUR INDIVIDUAL STUDY PLAN	<p>The study plan must be completed and submitted online through a procedure by which the student selects the modules they would like to attend as part of their degree programme and in line with the chosen curriculum.</p>
28.	INDIVIDUAL STUDY PLAN	<p>It is possible, upon request, to obtain the degree according to an individual study plan that includes training activities different from those provided in the academic regulations, as long as they are consistent with the educational framework of the study program for the academic year of enrollment. The application for an individual study plan is reviewed by the competent educational structure, which evaluates its coherence.</p>
29.	ATTENDANCE	Non-mandatory
30.	TUTORING FOR STUDENTS	<p>In order to guide and assist students throughout their studies, some lecturers are entrusted with tutoring tasks. Moreover, it is available a tutoring service run by enrolled senior students who offer their University life experience to prospective and current students.</p>
31.	TRANSFER FROM ANOTHER DEGREE	<p>"Transfer from another degree" refers to the change of study program within the University of Verona (internal transfer).</p>

	PROGRAMME/FROM ANOTHER UNIVERSITY	<p>The "transfer from another university" refers to the case where students move to the University of Verona from another university. For specific timing details, please refer to the Academic Calendar.</p> <p>A student wishing to transfer from another Master's program must first submit an admission application to verify eligibility. Upon verification, the student may request a transfer (from another university) or an internal transfer (from another program within the University).</p> <p>The Student Procedures Committee is responsible for validating the credits earned, along with the respective grades, from other degree programs in Italy or abroad. For internal/external transfers, validation is contingent upon detailed documentation from the originating institution/course, certifying completed exams, grades, and credits earned. The Committee applies the following criteria for validation:</p> <ul style="list-style-type: none"> - for activities with a specific scientific-disciplinary sector reference, credits will be validated on a case-by-case basis by evaluating the content of the educational activities and the achievement of the educational objectives of the study program. To compensate for any credit deficiencies, the Student Procedures Committee may identify the most appropriate supplementary activities necessary to achieve the required credits for the individual activity in relation to one or more active courses within the study program. Supplementary activities cannot be used to integrate courses for which less than 40% of the total credits have been earned. In such cases, the entire exam must be retaken. - for activities without a specific scientific-disciplinary sector reference, the Student Procedures Committee will evaluate on a case-by-case basis the content of the educational activities and their coherence with the objectives of the study program, considering the amount of credits that can be validated within the framework of the educational activities provided in the study program, - in the case where a particular educational activity is the contribution of multiple activities with different grades, the final evaluation will be determined by the weighted average of the reported grades, rounded up to the nearest whole number.. <p>Following the evaluations mentioned above, the Student Procedures Committee will determine the year of enrollment..</p>
32.	RECOGNITION OF PRIOR LEARNING	It is the evaluation of the previous study path , for the purposes of a transfer, an incoming transfer, or a withdrawal from studies, through the partial or total recognition of the previously acquired credits (CFUs), depending on the correspondence between the two study programs. Refer to the Academic Calendar for the dedicated time frames.
33.	RECOGNITION FOR DUAL ENROLLMENT	Students enrolled simultaneously in two different study programs can request the recognition of credits acquired in the other study program they are enrolled in, up to a maximum of one-third of the total credits required by the study program for which recognition is requested.
34.	EXAM ROUNDS	Four.
35.	FLEXIBLE STUDENT PATHWAYS	<p>Career management takes into account the specific needs of certain categories of students.</p> <p>Disability, specific learning disorders (SLD), and special educational needs (BES):</p> <p>With particular attention to disability and specific learning disorders (SLD), the course of study and the dedicated structure pursue the university inclusion of students with disabilities and specific learning disorders. To this end, it promotes the removal of material and immaterial obstacles that prevent full inclusion and also promotes the adoption of shared accommodations for participation in lessons, exams, and other educational activities and, in general, for participation in university community life, in compliance with the applicable regulations and without prejudice to the teaching autonomy of the faculty. In particular, the course of study promotes</p>

		<p>accessibility to facilities and teaching materials and encourages the use of distance learning methods, both synchronous and asynchronous, to meet the specific needs of students with disabilities or specific learning disorders. Within the limits of the applicable regulations, it promotes the university inclusion of students with special educational needs.</p> <p><u>Part-time enrollment:</u></p> <p>The part-time regime exclusively regulates the duration of the university career and the related economic burdens, allowing the degree to be obtained without falling into the condition of being off course for twice the normal duration of the course itself.</p> <p><u>Enrollment in individual courses:</u></p> <p>It is possible to attend individual courses within the bachelor's and master's degree programs for one academic year and take the related exams, receiving regular certification, including the indication of the credits (CFUs) obtained.</p> <p><u>Student-athlete:</u></p> <p>Students with significant competitive sports merits can access the career of a student-athlete. Annually, a specific notice outlines the requirements for access and permanence of student-athletes in the dual career path, allowing them to successfully complete an academic career in combination with their sports career.</p>
36.	FINAL EXAMINATION	<p>The thesis carries 24 CFU credits, intended for work not exceeding 4-5 months of full-time commitment by the student. The thesis will be written and discussed in English, possibly utilizing multimedia aids such as slides, videos, images, and sounds. The deadlines and procedures for submitting the graduation application are set by the Teaching Committee of Computer Science and the relevant offices.</p> <p>Purpose of the Thesis</p> <p>The purpose of the thesis is to develop an original study, which may culminate in an application project, a theoretical result related to specific design issues, or a critical review of the state of the art in a particular field of study. During the thesis work, under the guidance of the supervisor and any co-supervisors, the student must study and deepen the chosen topics, as well as acquire synthesis skills and creatively apply the knowledge gained. The content of the thesis must relate to topics in bioinformatics and medical informatics or closely related disciplines. The thesis involves presenting written work that may be structured as follows:</p> <ul style="list-style-type: none"> - design and development of applications or systems; - critical analysis of contributions from the scientific literature; - original research contributions. <p>The thesis can be written in either English or Italian and may be discussed in either language, using multimedia aids such as slides, videos, images, and sounds. If the thesis is written in Italian, it must include a short abstract in English.</p> <p>Conduct and Evaluation</p> <p>The final exam involves developing a thesis that engages the student in research, formalization, design, or development work, substantially contributing to the completion of their technical-scientific training. Each thesis may be internal or external, depending on whether it is carried out at the University of Verona or in collaboration with another institution. Each thesis requires a supervisor, possibly accompanied by one or more co-supervisors, and a counter-relator. The counter-relator is appointed by the Teaching Committee at least 20 days before the thesis discussion, after verifying the student's eligibility to take the Master's degree exam. Legal aspects (e.g., intellectual property of results) related to the thesis and its results refer to current legislation and University regulations.</p>

	<p>Thesis Evaluation</p> <p>The criteria on which the supervisor, any co-supervisors, and the counter-relator are asked to express themselves are:</p> <ol style="list-style-type: none"> 1. the depth of the work in relation to the state of the art in the relevant computer science fields, with an emphasis on applications in medical and biological fields; 2. the knowledge or technological advancement contributed by the thesis; 3. the critical effort expressed by the graduate; 4. the experimental and/or formal development effort expressed by the graduate; 5. the autonomy of the work expressed by the graduate; 6. the significance of the methodologies employed; 7. the accuracy of the execution and writing. <p>The counter-relator does not express an opinion on point 5.</p> <p>Graduation Grade</p> <p>The graduation grade (expressed in 110ths) is an integer between 66/110 and 110/110 and is formed by the sum, rounded to the nearest whole number (e.g., 93.50 becomes 94, 86.49 becomes 86), of the following addends:</p> <ol style="list-style-type: none"> 1. weighted average of the grades obtained in profit exams, scaled to 110; 2. evaluation of the graduation interview and the thesis according to the following modalities: <ol style="list-style-type: none"> a) assigning a coefficient between 0 and 1 (fractional with one decimal place) for each of the points 1-7 listed above; b) assigning a coefficient between 0 and 1 (fractional with one decimal place) for the quality of the presentation; c) summing the coefficients assigned to points a and b. <p>The presence of any honors obtained in the exams, participation in internships officially recognized by the Teaching Committee of Computer Science, passing surplus exams, and completing the degree within a shorter period than the legal duration of the course may be used by the Graduation Commission to assign an additional increment of one point. If the sum reaches 110/110, the Commission may decide to award honors. Honors are proposed and discussed by the Commission without adopting particular automatic calculation mechanisms. According to current regulations, honors are awarded only if the opinion is unanimous.</p> <p>External Theses</p> <p>An external thesis is carried out in collaboration with an institution other than the University of Verona. In this case, the student must prearrange the thesis topic with a university supervisor. Additionally, at least one co-supervisor from the external institution must be provided as an immediate reference for the student during the thesis work. The supervisor and co-supervisors must be indicated in the thesis assignment application. Insurance arrangements for the student's stay at the external institution are regulated by the rules in force at the University of Verona. If the thesis involves a training period at such an institution, a formal agreement between the university and the institution is required. The results contained in the thesis are the shared property of all individuals and institutions involved. Specifically, the contents and results of the thesis are considered public. For non-scientific aspects (e.g., agreements, insurance), refer to the Senate resolution of January 12, 1999.</p> <p>Supervisors, Co-Supervisors, Counter-Relators</p> <p>The thesis is presented by a university supervisor, who must be a Full or Associate Professor, or a Junior or Senior Tenure Track Researcher with</p>
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		<p>national scientific qualification. The supervisor must meet at least one of the following requirements:</p> <ul style="list-style-type: none"> i. member of the Teaching Committee to which the course of study belongs, ii. member of the Department of Computer Science, iii. affiliated with a scientific-disciplinary sector present in the Medical Bioinformatics study plan. <p>In addition to those qualified as supervisors, co-supervisors may include researchers from extra-university research institutes, research grant holders, post-doctoral fellows, doctoral candidates, departmental technical staff, experts appointed by an Italian university, and company representatives experienced in the thesis topic.</p> <p>Any professor or researcher from the Department of Computer Science at the University of Verona, particularly competent in the specific field of the thesis, may be appointed as a counter-relator. The supervisor proposes the counter-relator, who is then communicated to the graduate for inclusion in ESSE3 and appointed by the President of the Teaching Committee. The names of the counter-relators are published on the dedicated page as soon as possible after the thesis application deadline.</p> <p>Procedures and Deadlines</p> <p>A student nearing the end of their studies must identify a thesis topic proposed or approved by a supervisor and any co-supervisors. The student must submit the graduation application according to the procedures and timelines made public by the student office. The application must include the (provisional) title of the thesis, the name of the supervisor, any co-supervisors (for external theses only), and the counter-relator, who is proposed by the supervisor and appointed by the President of the Teaching Committee. Subsequently, on dates set by the student office and no later than 20 days before the graduation exam, the student must upload the thesis to ESSE3. The counter-relator can consult the thesis in PDF format only after it has been approved by the supervisor.</p> <p>To be admitted to the graduation exam, the student must have acquired the credits in the disciplinary areas required by the regulations and the study plan of the Master's Degree Course according to the degree class chosen at enrollment, and must be up to date with the payment of fees and contributions.</p> <p>Graduation Examination Committee</p> <p>The graduation examination committee must consist of 5 faculty members (Full Professors, Associate Professors, Tenure Track Researchers, Senior and Junior Fixed-term Researchers), including at least 3 who hold teaching positions within the Master's Degree Course in Medical Bioinformatics. The other two members must be affiliated with the Disciplinary Scientific Sector (SSD) present in the study plan of the course itself.</p> <p>Considering the number of candidates, the Teaching Committee of Computer Science will identify the most appropriate organizational methods for conducting the exam and will publish the examination schedule at least one week before the examinations take place.</p>
37.	ADDITIONAL INFORMATION	<p>Academic Calendar At this link you can find all the information regarding the Academic Calendar.</p> <p>Foreign Degrees and Periods of Study Abroad The Student Affairs Committee is responsible for the recognition of credits and degrees obtained abroad by the student, including the corresponding</p>

		<p>grades. Following these evaluations, the Committee will determine the year of enrollment.</p> <p>The recognition of credits obtained by students enrolled in the Medical Bioinformatics program during periods of study abroad, within the framework of international programs in which the University of Verona participates, is subject to the evaluation of the Student Affairs Committee.</p>
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