



**GUIDELINES FOR ADMISSION TO THE FIRST YEAR OF THE ENGLISH-TAUGHT
MASTER'S DEGREE PROGRAMME IN MEDICINE AND SURGERY
ACADEMIC YEAR 2024-2025**

CLAUDIANA HEALTH PROFESSIONS UNIVERSITY CENTRE IN BOLZANO

(January 2024)

(This is a translation and abridged version of the official Competition Call issued in Italian for Academic year 2024-2025 -BANDO DI CONCORSO PER L'AMMISSIONE AL PRIMO ANNO DEL CORSO DI LAUREA MAGISTRALE A CICLO UNICO IN MEDICINE AND SURGERY (CLASSE LM-41) DELLA FACOLTÀ DI MEDICINA E CHIRURGIA "A.GEMELLI" - A.A. 2024-2025)

TABLE OF CONTENTS

| | |
|---|--------|
| - Available Seats | Page 2 |
| - Requirements | 2 |
| - Application Timeline | 3 |
| - Application Procedure | 4 |
| - Applicants with Disabilities and/or Learning Disorders | 4 |
| - Entrance Exam | 6 |
| - Schedule and Venues | 7 |
| - Publication of the Rankings | 8 |
| - Paying the Pre-Enrolment Fee | 8 |
| - Enrolment Procedure | 9 |
| - Allocation of Unassigned Places | 10 |
| - Procedure for Withdrawal from the Programme after Enrolment | 10 |
| - Reimbursement for the First Installment of Tuition Fee after Withdrawal | 11 |
| - Special Considerations for Minors | 11 |
| - Contact Details | 11 |
| - Annex "A" - Scientific knowledge question schedule | 12 |

AVAILABLE SEATS

Applications are now open for admission to the English-taught Master's Degree Programme in Medicine and Surgery at the Claudiana Health Professions University Centre in Bolzano in collaboration with Università Cattolica del Sacro Cuore.

The number of seats available are as follows:

- **50 (fifty) seats** for EU citizens living anywhere and non-EU citizens living in Italy legally (with a "permesso di soggiorno"/residence permit):

EU Ranking

- **10 (ten) seats** for non-EU citizens living abroad (that is students requiring a student visa): **NON-EU Ranking ***

**In the case of dual citizenship, of which one is Italian or of another EU country, the Italian citizenship or that of another EU country always prevails. Students with an Italian/EU passport must compete among the EU Ranking for a place on the programme.*

Students, who are unsure which group they belong to, can refer to [this document](#) for assistance.

The number of seats available may be subject to variation arising from publication by the Ministry of Universities and Research (MUR) of decrees regarding the programming of seats available for enrolment in the A. Y. 2024/2025.

Should the number of seats be reduced by a decree issued by the MUR, those at the stage of pre-enrolment or enrolment for seats no longer available, in order of ranking, will be refunded the first instalment of university fees they have paid. These candidates will then compete for any remaining seats not assigned.

REQUIREMENTS

- 1) Be at least 17-years old at the time of enrolment in the programme;
- 2) be enrolled in the final year of a High School programme; **or**
- 3) have already obtained a High School qualification.

Non-Italian High School qualifications must be obtained after **at least 12 years of global schooling** and be eligible for admission to Italian university degree programmes.

Depending on both the Italian legislation and the regulations of the respective country of origin, applicants with **less than 12 years of global schooling** need to submit:

- either an official certifying document of "Academic Eligibility"; or
- a certification of any post-High School courses, with a corresponding transcript and documentation describing the formative content of such courses.

Students who have a non-Italian High School qualification and need support in determining its eligibility for admission to an Italian university can find additional information on **Entry Requirements** [here](#).

Those who already hold a degree in Medicine obtained abroad may not apply for admission.

Students who already hold an academic qualification and those who come from other degree programmes or master's programmes are required to follow the same procedures as set out in this announcement and to take the relevant entrance exam.

APPLICATION TIMELINE

for both **EU** and **NON-EU** Rankings

| | |
|--|---|
| Submission of application for admission to the programme | EU Ranking: From 16 January to 24 April 2024 |
| | NON-EU Ranking: From 16 January to 24 April 2024 |
| Submission of application for accommodations for candidates with disabilities or learning differences | EU Ranking: From 16 January to 24 April 2024 |
| | NON-EU Ranking: From 16 January to 24 April 2024 |
| Call to Entrance Exam | EU Ranking: 10 May 2024 |
| | NON-EU Ranking: 10 May 2024 |
| Entrance Exam | EU Ranking: 18 May 2024 |
| | NON-EU Ranking: 18 May 2024 |
| Results of Entrance Exam | EU Ranking: From 23 May 2024 |
| | NON-EU Ranking: From 28 May 2024 |
| Pre-enrolment | Both Rankings: From ranking publication until 5 June 2024 |
| Enrolment | Both Rankings: From 1 July to 6 September 2024 |

APPLICATION PROCEDURE

for both **EU** and **NON-EU** Rankings

- Access <https://international.unicatt.it>; *
- Select in the following order: Degree Programmes, Undergraduate Programmes, Medicine and Surgery (Bolzano Campus); *
- Read the instructions and documents, then click on “Apply Now”;
- Follow the on-screen instructions: fill in the online form, submit your application, and pay the €200.00 fee to finalise the application and receive the link to an **online simulator** to prepare for the Entrance Exam. The online simulator consists of approximately 3,000 questions from past exams, included as examples. The questions covered by the written exam will not be extracted from the simulator.

Both EU Ranking and NON-EU Ranking candidates must pay the **€200.00 fee** no later than 23:59 UTC + 2 on **24 April 2024**.

Late payment will exclude candidates from the exam.

After submission, Università Cattolica International Admissions Office staff will evaluate each candidate’s academic records in order to verify eligibility to access Italian University programmes. Only candidates whose eligibility has been confirmed by the International Admissions Office will be invited to take the Entrance Exam and be officially assigned to one of the applicant rankings (EU or NON-EU).

Should the candidate's High School qualification not meet the requirements for admission to the English-taught Master’s degree in Medicine and Surgery, the International Admissions Office will notify the candidate by e-mail. In such a case, the €200.00 fee will not be reimbursed, as it covers administrative costs related to the evaluation of qualifications for admission and the administration of the Entrance Exam.

Following the application procedures referred to above, candidates belonging to the **EU Ranking** must indicate the location (in Italy or abroad) where they intend to take the Entrance Exam by selecting their preference from the list given by Università Cattolica, while places at each location are still available. Any requests for changes to the exam site selected during registration must be sent to Università Cattolica International Admissions Office in writing, via e-mail to international.admissions-rm@unicatt.it, no later than 24 April 2024. Decisions will be made based on places available at the various venues.

*** IMPORTANT: Those candidates who have previously applied for admission to the Medicine and Surgery programme at the Università Cattolica Rome campus will find as of January 16 a duplicate application started for the Bolzano programme, thus allowing them to complete the application and submit it for consideration if they wish to apply to both programmes and sit both entrance exams. As of 16 January, those candidates not having previously started an application for the Rome campus programme, but who wish to apply to both programmes, will need to start either one application and will have a duplicate created for the programme at the other campus.**

APPLICANTS WITH DISABILITIES AND/OR LEARNING DISORDERS

The exams referred to in this announcement are organised by Università Cattolica del Sacro Cuore taking into account the individual needs of candidates with disabilities.



Documentation attesting to disability and/or learning differences to be used for this competition must be submitted in the following ways.

1. For candidates in possession of high school qualification from an institution located in Italy or abroad belonging to a non-Italian school system

a) Candidates with disabilities who require special accommodations or additional time to carry out the Entrance Exam must submit an application (form available from the webpage for this competition on the University website - <https://international.unicatt.it>) attaching certification of disability status issued by the public health service for the area. In order to be able to provide accommodations, applications on official forms must be emailed to the International Office (Rome) no later than 23:59 UTC + 2 on 24 April 2024 (e-mail address: international.admissions-rm@unicatt.it).

b) Candidates with specific learning disorders must e-mail official certification to international.admissions-rm@unicatt.it no later than 23:59 UTC + 2 on 24 April 2024.

Candidates with disabilities are entitled to additional time not exceeding 50% of the total time specified in this announcement for the admission exam. Applicants with learning disorders are allowed a maximum of 30% extra time above the total time specified in this announcement for the admission exam.

Applications submitted according to the procedure outlined herein will be assessed by a dedicated panel convened to deal with applications for accommodations for the admission exam for candidates with disabilities or learning disorders.

The provision of accommodations for candidates with disabilities or learning disorders is not guaranteed if applications and related certification are received after 24 April 2024. Candidates must have the original documentation with them and be prepared to present them on the day of the admission exam.

Candidates from the EU and non-EU countries who are residing abroad and who wish to apply for the provision of accommodations as set out in the preceding paragraphs must submit certification of disability or learning disorders issued in the country of residence, together with a translation into Italian or English, which may be either a sworn translation or certified by the Italian Consulate or Embassy in the country of residence. The assessment panel will then decide whether the condition set out in the submitted certification is recognised by Italian law.

2. For candidates who are non-EU citizens living abroad (and only these candidates)

Applications for extra time or special accommodations may be submitted until 24 April 2024 if they include the documentation referred to in the previous points.

ENTRANCE EXAM

Admission to the English-taught Degree Programme in Medicine and Surgery (Bolzano) is determined exclusively by the results of a computer-based Entrance Exam.

The entrance exam consists of a written exam administered in computer-based mode entirely delivered in English and made up of sixty-five (65) multiple choice questions with five answer options. Candidates must choose one answer only. The topics of the multiple-choice questions are as follows:

- **2 questions** on general knowledge;
- **20 questions** on logical reasoning;
- **18 questions** on Biology;
- **12 questions** on Chemistry;
- **8 questions** on Physics and Mathematics;
- **5 questions** on ethics and religious culture.

The programmes relating to questions of scientific culture are contained in Annex A. To prepare questions on ethics and religious culture, candidates can consult the texts recommended by Università Cattolica del Sacro Cuore (list available on the University website).

Candidates have a maximum time of **65 minutes** to complete the entrance exam.

The exam is uniquely and automatically linked to the candidate who has taken it via the PIN provided at identification, which is matched with the code identifying the individual exam, generated randomly when the exam is started.

There is a maximum score of 65 (sixty-five) points for the exam, assigned as follows:

- **1 point** for each correct answer;
- **0.25 point** is taken off for each incorrect answer;
- **0 points** for any answer not given.

The minimum score required to be eligible for the degree programme is **no less than 20 points out of 65**.

In the event of a tie in the final ranking, the score for logical reasoning will be used to rank tied candidates. In the case of a further tie, the score for the Biology questions will be used to rank the tied candidates. In the case of a further tie, the score for the Chemistry questions will be used to rank the tied candidates. In the case of a further tie, the score for the Physics and Mathematics questions will be used to rank the tied candidates. In the case of a further tie, the score for the general knowledge questions will be used to rank the tied candidates. In the case of a further tie, the score for the ethical and religious culture questions will be used to rank the tied candidates. In the case of a further tie, the younger candidate will prevail.

Those candidates who score a pass in the Entrance Exam for enrolment on the degree programme but do not score a **minimum of 40%** for the **Biology** section (a minimum of 7 out of 18 questions) and the **Chemistry** section (a minimum of 5 out of a possible 12) will be assigned “additional training obligations”

(or **OFA** – Obblighi Formativi Aggiuntivi) to fulfil. These candidates will have to attend intensive remedial courses organised by the university. These OFA must be fulfilled within the first year of the programme: students who do not cover the remedial work within the first year as set out above will not be able to take the exams scheduled for the second year of the programme.

SCHEDULE AND VENUES

a) EU Ranking

The Entrance Exam will be held in person at suitable test centres in Italy and abroad in multisession mode on **18 May 2024**. The location and time of the test will be communicated by e-mail to each candidate. The general list of exam invitations will also be published online at <https://roma.unicatt.it> and <https://international.unicatt.it> on 10 May 2024.

b) NON-EU Ranking

The Entrance Exam will be administered remotely on **18 May 2024** with the use of a proctoring system, which allows for candidates to take the exam from home with the support of a control platform called Proctor Exam, which is activated from the moment of identification of the candidate until the end of the exam. The exam time will be e-mailed to each candidate by 10 May 2024 together with the instructions on how to take the exam using the modality described above.

The University reserves the right to change dates, times, and test locations, as well as to increase the number of test sites for organisational reasons if necessary.

On the day of the entrance exam, candidates must show the following:

- A valid ID document;
- Receipt of payment of the €200 fee made before the deadline;
- Any original documentation certifying disability and/or learning differences declared when registering for the competition.

The rules of the Entrance Exam forbid the use of mobile phones, calculators, tablets, online-enabled devices and the consultation of printed books and/or manuscripts and notes.



PUBLICATION OF THE RANKINGS

The results of the Entrance Exam will be published online at <https://roma.unicatt.it> and <https://international.unicatt.it>, respectively:

- a) For the **EU Ranking**: as of 23 May 2024
- b) For the **NON-EU Ranking**: as of 28 May 2024

Candidates who are positioned high enough in the ranking to be included in the number of seats available for the relevant group of applicants are offered a place on the programme. From the same day onwards, candidates can view their exam via the dedicated platform to access documentation online by following the instructions communicated to candidates via the University website.

PAYING THE PRE-ENROLMENT FEE

EU Ranking candidates who are assigned a seat on the programme may confirm their position by completing their pre-enrolment and by paying the deposit and first instalment of tuition and university fees in the amount of €4,000.00 no later than 5 June 2024.

Those in possession of a bank account/credit card in Italy are invited to use the PagoPA payment system as an alternative to the wire transfer (wire transfer details will be sent out via email with the invitation to pre-enrol).

NON-EU Ranking candidates who are assigned a seat on the programme may confirm their position by completing their pre-enrolment and by paying the deposit and first instalment of tuition and university fees no later than 5 June 2024.

Payment of the €4,000.00 fee will be done using Flywire, which will allow the candidate to select, based on the country of origin of the payment, among different payments methods, such as credit card, bank/wire transfer, other directly via the Flywire portal.

E-mail the following to international.admissions-rm@unicatt.it:

- Receipt of payment of first instalment of tuition fees;
- For those of the Catholic religion: certificate of baptism.
- For those who are not of the Catholic religion: certificate of interview with a Pastoral Assistant. This interview must be carried out within three months of the start of lessons.

ENROLMENT PROCEDURE

Starting from 1 July 2024 and no later than 6 September 2024 all admitted students are required to finalise their enrolment by submitting the following documents online:

- Enrolment Form
- Statement Form concerning the country of origin of personal income

Applicants will be given via email instructions on how to download these documents.

- A copy of the final High School Diploma;
- Payment receipt of the €4.000 Enrolment Fee;
- A digital photo if not previously uploaded during pre-enrolment
- A copy of the student's ID document / ID Card / Passport;
- For non-EU students that were already living in Italy at the time of applying for the test - A copy of a valid residence permit.

Additional documents:

- For non-EU students that were living abroad at the time of applying for the test - A valid Visa for Study-related reasons (Type D), issued by an Italian Embassy / Consulate.
- For all students with a non-Italian High School Diploma – A copy of the final High School Diploma; and a Dichiarazione di Valore (Statement of Validity) that must be issued by the Italian Embassy / Consulate in the Country where the Diploma was awarded (if applicable).

The "Dichiarazione di Valore" is an official document issued by the Italian Embassies / Consulates that offers a description of a student's Diploma and indicates its validity in the awarding Country for academic or professional purposes, as well as the legal status of the awarding institution. All international students are encouraged to apply for it after receiving confirmation of their admission to the Programme.

- A Codice Fiscale (Fiscal Code / Italian Tax Code)

The "Codice Fiscale" is an Italian tax identification number issued by the Government offices or by Italian Embassies / Consulates, consisting of a 16-character alphanumeric code that is provided free of charge. It is needed to identify both Italian nationals and foreign residents and authorize any payment, contract or financial operation.

- Certificate of vaccination for Hepatitis B
- Certificate of anti-tuberculin Mantoux test, performed no more than 3 months before submission

The medical certificates may be submitted within 60 days from the completion of the Enrolment procedure.



- An English Language Certification, corresponding to the following types and respective minimum scores:

| Certificate | Minimum score |
|----------------------|-------------------------------------|
| ACADEMIC IELTS | 6.0 |
| TOEFL IBT | 80 |
| TOEFL Computer-based | 213 |
| TOEFL Paper-based | 550 |
| CAMBRIDGE ESOL | FCE/First Certificate, with Grade B |

Applicants whose main language of instruction in High School was English do not need to submit this certificate. In such cases, applicants need to show official proof of the language used in their High School studies.

For additional information about the enrolment and the visa application processes, please see our [dedicated section online](#).

ALLOCATION OF UNASSIGNED PLACES

Students failing to enrol by the deadline given for each stage of the procedure as set out in these guidelines will be deemed to have withdrawn, in which case their place in the programme will be given to the next candidate in the ranking.

Università Cattolica reserves the right to proceed with the assignment of any vacant places via notices published online advising that the rankings have moved up (website: <https://roma.unicatt.it>). These notices will also set out the methods to be used for calling students and assigning places, and the terms of acceptance of unfilled places.

The rankings referred to in these guidelines will be closed at the conclusion of the teaching activities of the first semester so that students can reach the minimum compulsory attendance to be able to take individual exams. Any places not filled at the closing date of the rankings will not be assigned by scrolling down the ranking, including cases of places that may have become available due to a withdrawal after enrolment.

PROCEDURE FOR WITHDRAWAL FROM THE PROGRAMME AFTER ENROLMENT

Students intending to withdraw from their studies after enrolment must submit an official application for withdrawal form with a €16.00 tax stamp. The application must either be delivered directly to Polo Studenti (Rome Campus) during office hours or sent by registered post with delivery receipt to: Università Cattolica del Sacro Cuore – Polo Studenti (Roma), Largo F. Vito 1,00168 Rome.



REIMBURSEMENT OF THE FIRST INSTALMENT OF TUITION FEES AFTER WITHDRAWAL

- The €200 Application Fee is not refundable under any circumstance.
- Should an application for reimbursement of the pre-enrollment fee (amounting to €4.000) be made, it will be assessed by a special panel, which meets in October each year. Applications must be submitted within 14 days of payment of the fee. There is an administrative charge of €100 for applications for reimbursement.
- Non-EU students living abroad who have officially been denied a D Entry Visa and who submit their applications for reimbursement by their respective enrolment deadline, as indicated in their individual instructions, will have their requests examined by panel only if properly documented.

SPECIAL CONSIDERATIONS FOR MINORS

Admitted students who are still 17 years old at the time of enrolment and at the beginning of the programme, per [Italian Law](#), will need to have a legal guardian resident in Italy until the student turns 18. The name and address of the guardian will have to be given to the Italian consular service upon application for the study visa. The visa will not be released to a minor without legal guardianship in Italy. Such guardianship cannot be provided by the University and needs to be found independently by the student's family. Families who do not have contacts in Italy may refer to the [local Italian authorities](#) responsible for the rights of minors.

CONTACT DETAILS

Università Cattolica del Sacro Cuore
International Admissions Office
Largo F. Vito 1,00168 Rome

Email contact for general inquiries about the programme, or for candidates in the process of applying:
international.inquiry@unicatt.it

Email contact for candidates who have submitted their application:
international.admissions-rm@unicatt.it



ANNEX "A"

Scientific knowledge question schedule

1) **BIOLOGY:** The chemistry of living beings. The biological importance of weak interactions. The organic molecules present in living organisms and their respective functions. The role of enzymes. The cell as the basis of life. Cell theory. Cell size. The prokaryotic and eukaryotic, animal and plant cell. Viruses. The cell membrane: structure and functions - transport across the membrane. Cell structures and their specific functions. Cell cycle and cell reproduction: mitosis and meiosis - chromosomal set and chromosomal maps. Bioenergetics. The energy currency of cells: ATP. Redox reactions in living things. Energy processes: photosynthesis, glycolysis, aerobic respiration and fermentation. Reproduction and Inheritance. Life cycles. Sexual and asexual reproduction. Mendelian genetics: Mendel's laws and their applications. Classical genetics: chromosomal theory of inheritance - models of inheritance. Molecular genetics: DNA structure and duplication; the genetic code; protein synthesis. The DNA of prokaryotes. The structure of the eukaryotic chromosome. Genes and the regulation of gene expression. Human genetics: transmission of mono and polyfactorial characters; autosomal and X-linked hereditary diseases. Biotechnologies: recombinant DNA technology and its applications. Inheritance and the environment. Mutations. Natural and artificial selection. Evolutionary theories. The genetic basis of evolution. Anatomy and Physiology of animals and humans. Animal tissues. Anatomy and physiology of human systems and apparatuses and related interactions. Homeostasis.

2) **CHEMISTRY:** The constitution of matter: the states of aggregation of matter; heterogeneous systems and homogeneous systems; compounds and elements. Laws of perfect gases. The structure of the atom: elementary particles; atomic number and mass number, isotopes, electronic structure of the atoms of the various elements. The periodic system of elements: groups and periods; transition elements; periodic properties of the elements: atomic radius, ionization potential, electron affinity; metallic character. Relations between electronic structure, position in the periodic system and properties of the elements. The chemical bond: ionic bond, covalent and metallic bond. Bond energy. Polarity of the bonds. Electronegativity. Intermolecular bonds. Fundamentals of inorganic chemistry: nomenclature and main properties of inorganic compounds: oxides, hydroxides, acids, salts. Chemical reactions and stoichiometry: atomic and molecular mass, Avogadro's number, concept of mole and its application, elementary stoichiometric calculations, balancing of simple reactions, the different types of chemical reactions. Solutions: solvent properties of water, solubility, the main ways of expressing the concentration of solutions. Equilibria in aqueous solution. Elements of chemical kinetics and catalysis. Oxidation and reduction: oxidation number, concept of oxidant and reducing agent. Balancing of simple reactions. Acids and bases: the concept of acid and base. Acidity, neutrality and basicity of aqueous solutions. The pH. Hydrolysis. Buffer solutions. Fundamentals of organic chemistry: bonds between carbon atoms, crude and structural formulas, the concept of isomerism. Aliphatic, alicyclic and aromatic hydrocarbons. Functional groups: alcohols, ethers, amines, aldehydes, ketones, carboxylic acids, esters, amides. Elements of nomenclature.



3) PHYSICS: Measurements: direct and indirect measurements, fundamental and derived quantities, physical dimensions of the quantities, knowledge of the metric system and the CGS, Technical (or Practical) (ST) and International (SI) Systems of Units, units of measurement (names and relationships between fundamental and derived units), multiples and submultiples (names and values). Kinematics: kinematic quantities, various motions with particular regard to uniform and uniformly accelerated rectilinear motion; uniform circular motion; harmonic motion (for all motions: definition and relations between the connected kinematic quantities). Dynamics: vectors and vector operations. Forces, moments of forces with respect to a point. Moment of a pair of forces. Vector composition of forces. Definitions of mass and weight. Gravity acceleration. Density and specific weight. Law of universal gravitation, 1st, 2nd and 3rd principles of dynamics. Work, kinetic energy, potential energies. Principle of energy conservation. Pulse and momentum. Principle of conservation of momentum. Fluid mechanics: pressure and its units of measurement (not only in the SI system). Archimedes' principle. Pascal's principle. Stevino's law. Thermology, thermodynamics: thermometry and calorimetry. Specific heat, heat capacity. Mechanisms of heat propagation. Changes of state and latent heat. Laws of perfect gases. First and second law of thermodynamics. Electrostatics and electrodynamics: Coulomb's law. Electric field and potential. Dielectric constant. Capacitors. Capacitors in series and in parallel. Direct current. Ohm's law. Kirchhoff's principles. Electrical resistance and resistivity, electrical resistances in series and in parallel. Work, Power, Joule effect. Generators. Electromagnetic induction and alternating currents. Effects of electric currents (thermal, chemical and magnetic).

4) MATHEMATICS: Numerical sets and algebra: natural, integer, rational, real numbers. Sorting and comparison; order of magnitude and scientific notation. Operations and their properties. Proportions and percentages. Powers with integer exponent, rational) and their properties. Radicals and their properties. Logarithms (base 10 and base e) and their properties. Basics of combinatorics. Algebraic expressions, polynomials. Notable products, nth power of a binomial, factorization of polynomials. Algebraic fractions. First and second degree algebraic equations and inequalities. Systems of equations. Functions: basic notions on functions and their graphic representations (domain, range, sign, maximum and minimum, increase and decrease, etc.). Elementary functions: integer and fraction algebraic, exponential, logarithmic, goniometric. Compound functions and inverse functions. Goniometric equations and inequalities. Geometry: polygons and their properties. Circumference and circle. Measurements of lengths, surfaces and volumes. Isometries, similarities and equivalences in the plane. Geometric places. Angles measurement in degrees and radians. Sine, cosine, tangent of an angle and their notable values. Protractor formulas. Resolution of triangles. Cartesian reference system in the plane. Distance of two points and midpoint of a segment. Equation of the line. Conditions of parallelism and perpendicularity. Distance of a point from a line. Equation of the circumference, parabola, hyperbola, ellipse and their representation in the Cartesian plane. Pythagorean theorem. Euclid's theorems (first and second). Probability and statistics: frequency distributions according to the type of character and main graphical representations. Concept of random experiment and event. Probability and frequency.