



UNICAMILLUS

**CALL FOR APPLICATION FOR THE ADMISSION OF EU AND EQUIPARATED STUDENTS TO THE SIX-YEAR DEGREE COURSE IN DENTISTRY AND DENTAL PROSTHETICS TAUGHT IN ITALIAN OF THE SAINT CAMILLUS INTERNATIONAL UNIVERSITY OF HEALTH SCIENCES (UNICAMILLUS)  
Rome Campus  
Academic Year 2024-2025**

**Approved by Rector's Decree no. 438 of 29<sup>th</sup> July 2024**

**Article 1 – Available places and access requirements**

For the academic year 2024-2025, the Saint Camillus International University of Health Sciences (hereinafter “**UniCamillus**”, the “**Academic Institution**” or the “**University**”) is holding a public competition for admission to the first year of the Italian-language six-year Master's degree course in Dentistry and Dental Prosthetics, to cover slots by virtue of Ministerial Decree no. 1101 of 29th July 2024 and any other vacant slots from previous admission calls. The available seats are:

<b>Six-Year Degree Course in:</b>	<b>Available seats EU and Equiparated students:</b>
Dentistry and Dental Prosthetics (in Italian)	28

The call for application is reserved for Italian and EU candidates and for the categories referred to in Article 26 of Italian Law No. 189 of 30<sup>th</sup> July 2002, and subsequent amendments.

Nationals from Norway, Iceland, Liechtenstein, the Swiss Confederation, the Republic of San Marino and the Holy See are treated in the same way as EU candidates.

Candidates who, on the date of the test, are in possession of a secondary school diploma are eligible to take part in the admission test.

Candidates who, on the date of the test, are in possession of a secondary school diploma obtained abroad after at least 12 years of schooling and accompanied by a Declaration of Value issued by the Italian diplomatic representation abroad.

In cases where the local school system provides for 11 years or 10 years of schooling, the title is valid if supplemented by one or two years of university and the passing of all the examinations required for the years attended.

Candidates who, at the beginning of the academic year to which this notice of call refers, are not in possession of a suitable qualification in accordance with the regulations in force, lose their eligibility for enrolment or, if already admitted, forfeit their enrolment and are not entitled to a refund of any amount paid to the University for any reason.

With reference to the recognition of foreign qualifications, the University will take into account the MUR guidelines "*Procedures for the entry, stay and registration of foreign/international students on higher education courses in Italy for the academic year 2023-2024*" as amended (<http://www.studiare-in-italia.it/studentistranieri>).

## **Article 2 – Application submission**

**Registration for the admission test will be open until 1 pm on 23rd September 2024.**

Registration for the admission test costs € 180.00 (one hundred and eighty/00), which must be paid by 1 pm on 23rd September 2024.

Candidates, who meet the requirements set out in Article 1, must submit their application exclusively online by connecting to the GOMP student portal, link <https://unicamillus-studenti.gomp.it/>, and carry out the enrolment procedure following the instructions provided in the "Guide for the submission of the admission application" published on the website.

Any candidate, wishing to register for the admission test before reaching the age of majority, must follow the procedure with the assistance of a person exercising parental authority.

During the registration phase, in addition to entering all the data required by the procedure, the upload of the privacy form will be allowed.

The application form for entry to the selection, once confirmed, cannot be modified or supplemented with further documentation. The candidate is responsible for the information provided in filling in the application form in all its parts. We therefore recommend that you carefully check the documentation before submitting your application. The candidate is responsible for the information provided in the application form. The presence of false, incorrect or omitted information will result in immediate exclusion from the selection process or, if already passed, cancellation from the list of those admitted to the degree course.

**IMPORTANT:** Applications received after the deadline and/or incomplete and/or with incorrect information will NOT be evaluated. By submitting the application form for the selection process, the candidate authorises Unicamillus to carry out checks with the bodies and authorities that issued or validated the declared qualifications. Candidates are reminded that anyone making false statements, producing false documents or using them is subject to the penal sanctions provided for by Article 76 of DPR 445/2000.

In the event of any difficulties in the call registration procedure, it is sufficient send an e-mail to **[relations@unicamillus.org](mailto:relations@unicamillus.org)** for assistance.

For all candidates, the test participation fee is not refundable under any circumstances (even in the event of non-participation in the admission test). Payment of the fee must be made when submitting the application directly on the GOMP portal by accessing the Tuition Fees > Payments section (CBILL payment slip or PagoPA). The application is considered finalised only if completed with payment of the contribution, which must be made no later than the deadline indicated in this article. The application received by the deadline, but without payment of the fee or with payment received after the deadline, will not be evaluated under any circumstances and the candidate will therefore be excluded from the list of those admitted to the test.

PLEASE NOTE: At the end of the application procedure, the system will issue a submission code that the candidate must keep as it will be necessary to verify their test result when published (see Article 6 of this call).

All communications, notices and information relating to this Call will be made public on the official website which constitutes the only official communication tool for all interested parties. The candidates who intend to participate in the Call have, therefore, the responsibility to constantly monitor the website in order to be informed about all the updates that the University reserves the right to publish. The University declines any responsibility for failure to read the published notices and to fulfill all procedural obligations.

### **Article 3 – Support for candidates with disabilities or specific disorders**

Candidates with disabilities or with specific learning disabilities (SLD), in relation to the specific difficulties attested by medical certification, can make explicit request for aids and/or additional time compared to those established for the other candidates, as well as further measures to guarantee equal opportunities in carrying out the entry test. “Candidates with disabilities” shall mean blind candidates, suffering from absolute blindness or with a visual residual not exceeding one tenth in both eyes; deaf candidates, suffering from deafness from birth or before learning the spoken language; candidates with a civil disability percentage equal to or greater than 66%; candidates in possession of the handicap certification as from Italian Law no. 104/92 as amended by Italian Law no. 17/99. These conditions must result from an appropriate medical certification issued by a competent public health authority. The certifications will be accepted only if issued in Italian or English language.

“Candidates with SLD” shall mean candidates with a diagnosis of dyslexia, dysgraphia, dyscalculia, dysorthography, resulting from appropriate clinical certification, issued by no more than three years by the National Health Service, or by specialists or structures accredited by the regional health service. The additional time allocated to candidates with SLD will be 30% more than the time set for admission tests, in accordance with Italian Ministerial Decree no. 5669/2011.

The request and the related medical documentation must be received exclusively by a certified email to [dsa.unicamillus@pec.it](mailto:dsa.unicamillus@pec.it) no later than the deadline for registration to the admission test indicated in art. 2 of this call (by 1.00 pm of 23<sup>th</sup> September 2024). The University reserves the right to carry out the appropriate checks on the veracity and adequacy of the documentation.

#### **Article 4 – Topics of the admission test and selection criteria**

The admission test will be held in Italian and consists of a multiple-choice written test that presents five answer options, among which the candidate must identify only one, discarding incorrect, arbitrary or less probable conclusions. It consists of 60 questions delivered in Italian on the basis of the programs indicated in Annex A and divided as follows:

- 15 logical reasoning and reading comprehension questions;
- 35 scientific questions (10 in Biology, 10 in Chemistry, 10 in Physics and 5 in Mathematics);
- 10 questions on various humanitarian topics related to the specific mission of UniCamillus, as better described on the University's website.

The selection test will last 60 minutes.

A maximum score of 90 (ninety) points is awarded for the assessment of the selection test according to the following criteria:

- 1.5 points for each correct answer;
- minus 0.25 points for each incorrect answer;
- 0 points for each answer not given.

#### **Article 5 – Conduct of UniCamillus tests**

The written test will be held remotely, i.e. in a home-based manner from a candidate's workstation and via a remote surveillance platform on **26<sup>th</sup> September 2024**.

The University reserves the right to organise additional sessions and to change the dates, times, locations of the entrance test, dates of publication of results and test conduction methods, should it be necessary for organisational reasons and/or by ministerial provision, notifying all competitors by means of public notices on the University website.

In the event of a postponement, provided that it has been decided earlier than the deadline for applications for the admission test, the University reserves the right to postpone the deadlines for submitting applications and, if deemed appropriate, to amend the other dates set out in this Notice of Call accordingly.

#### **General indications for participation in the test**

From the third day before the start of the test sessions, all candidates will receive, from [convocazioni@ilmiotest.it](mailto:convocazioni@ilmiotest.it) to the email address used when registering their personal data, the instructions for taking the test and the instructions to be followed to meet the technical requirements.

If no message is received from [convocazioni@ilmiotest.it](mailto:convocazioni@ilmiotest.it), you should check that the message is not stored in your junk mailbox. Should it not be present in junk mail either, a report should be made to [convocazioni@ilmiotest.it](mailto:convocazioni@ilmiotest.it) requesting a new email to be sent.

Candidates are required to check the level of quality and continuity of the IT connection at the location where they will take the test and, in any case, that of the surroundings in which the location is located.

Any malfunction of the IT connection occurring during the performance of the test and affecting its performance wholly or partially shall be the sole and exclusive responsibility of the candidate.

The candidate is therefore personally responsible for the quality and continuity of the connection with his/her workstation and the isolated room.

The committee may at any time order the exclusion of a candidate if any malfunction of the connection signal makes it impossible to control the private environment in which the test is being held.

Candidates are obliged to observe any other instructions of a technical nature that may be imparted by the company running the test, in both the preparation phase and test-taking phases, paying particular attention to connection times to ensure punctuality and contextual conformity of the proceedings for each scheduled session.

By activating the video link, the candidate consents to the recording of images and to the recording of any other personal data enabling the reconstruction and tracking of what happened during the competition examination.

#### Technical requirements for taking the test

To take the test, the candidate must have:

- a PC (operating system Windows 8, or later, or LINUX) or MAC (MAC-OS 10.14, or later) equipped with webcam and microphone and compulsory use of GOOGLE CHROME (min. version 81.0) as browser;
- Internet connectivity with a minimum upload and download speed of 1.5 Mbps;
- a smartphone or tablet (Android min v.4.1 - IOs min v.8) equipped with a cam and on which an APP can be downloaded.

The use of Wi-Fi is also recommended. A subsequent email will ask you to download an APP to your smartphone/tablet (34 MB) from Google Play or the App Store (depending on whether you are using an Android or iOS smartphone).

PLEASE NOTE: The Tablet can be used **only** to replace the Smartphone, not the PC (or Mac).

It should be noted that should a candidate carry out the checks with a workstation that has inferior technical specifications than the minimum requirements set out in this Notice of Call, the possible passing of this stage **does not guarantee** that the candidate shall be able to take the competition test without the prescribed equipment.

### Performing the test

From the third day prior to the test, candidates will receive an email sent from [convocazioni@ilmiotest.it](mailto:convocazioni@ilmiotest.it) containing the instructions on how to carry out the requirements check; specifically, candidates must:

- install the Google Chrome Proctor Exam plugin required to ensure video surveillance during the test;
- install the Proctor Exam App on the smartphone (or tablet) that will be used during the test.

Candidates must follow the procedure to test the correct setup and operation of:

- PC/Mac audio and microphone
- PC/Mac webcam
- smartphone/tablet webcam
- Internet connection

At the end of the requirements check, applicants will receive a second email from [convocazioni@ilmiotest.it](mailto:convocazioni@ilmiotest.it) with the link to access the exam and information about the relevant date and time.

The indicated time must be strictly adhered to in order not to slow down the identification operations preceding the examination.

*Please note: the candidate is invited to keep the data contained in the latter e-mail, as it also provides information and credentials to view your test, which will be made available after the publication of the results on the University's site.*

### Conduct of the test

On the day of the test, prior to its start, the procedure involves setting up and connecting the instruments already checked during the "requirements check", followed by the video shots of the location and surroundings in which the test will take place.

Next, candidates will be required to plug the smartphone into a power socket and position it behind them so that it always frames the surroundings.

During the identification procedure, candidates shall:

- show the identification document via the PC's webcam and take a photo of it;
- take a picture of their face inside a template;
- send both photos that are captured by the platform.

After identification, candidates will be able to access the link to the test and will have time to read the operating instructions while waiting until the start of the test. The waiting time depends on the progress of the identification of all the convened candidates.

Any candidate who, for any reason, logs on after the end of the identification stages or without a valid identity document will not be admitted to the test.

A candidate who is absent from the test after the closing of the identification procedures will be considered a dropout.

As soon as the Examination Committee authorises the start of the test, the “Start test” button will appear on the left-hand side of the screen.

Only then, by clicking on the appropriate button, will the candidate begin the test.

At the end of the test, the candidate must click on the “Close test” button and log off.

Once returned to the start page, the candidate must click on the “Finish Exam” blue button at the top right.

The use and consultation of other applications, browsers or web pages is not permitted. Therefore, it is necessary to close all web pages and any open programs. Platform pages, on the other hand, must always remain open.

In the event of technical problems, the candidate can use the live chat at any time.

During the test, candidates may only use their PC/Mac without additional screens, keyboards and mice.

The use of two blank sheets of paper and a pen to carry out any calculations is permitted, subject to verification by the remote proctor during identification.

#### Grounds for exclusion from the test

Candidates are required to comply with the following provisions on pain of exclusion from the test:

1. the room must be adequately lit;
2. the use of earphones or other technological devices such as smartphones, smartwatches, calculators or glasses with a camera or video camera is not permitted;

3. the use or consultation of other applications, browsers or web pages is not permitted;
4. the use of books, notes or handouts is not permitted;
5. no person other than the candidate may be present in the room;
6. interaction with other persons is not permitted;
7. it is not permitted to leave the room for any reason, not even for toilet breaks;
8. the use of earplugs is not permitted.

## **Article 6 – Publication of the admission test results**

Test results will be available **by 3<sup>rd</sup> October 2024** on the institutional website.

Candidates will be able to check their results through the submission code issued by the GOMP system at the time of registration for the test (as per Article no. 2 of this call).

The right to enrol in the six-year degree course in Dentistry and Dental Prosthetics is acquired by candidates, depending on the places available, based on their admission test result.

Candidates, whose final score is less than 20 points, will be considered “not eligible”, regardless of their results. Under no circumstances will they be able to proceed with enrolment in the degree course, not even if the sliding procedure is activated (as per Article 7).

Those who have obtained a score of 20 points or more will be deemed “eligible”. Eligible candidates will be able to accrue the right to admission only in the event that the sliding procedure is activated (as per Article 7).

Those who have obtained a passing score, with reference to the number of available places, will be deemed to have been “admitted”.

In the event of a tie in the score, the one with the highest score in solving the humanitarian questions will prevail. In the event of a further tie in the score, the candidate with the youngest age will prevail.

## **Article 7 – Enrolment and sliding procedure**

Candidates who have obtained a useful position on the basis of the result obtained, must finalise the online enrolment procedure, **from 7<sup>th</sup> October 2024 until 1 pm on 11<sup>st</sup> October 2024**, by following the instructions published on [www.unicamillus.org/admissions](http://www.unicamillus.org/admissions), which provides for the acquisition by the University of the following documentation:

- a) enrolment application submitted to the Rector and acceptance of the UniCamillus Code of Ethics;
- b) Student Contract (completed by the candidate or, if a minor, by a legal guardian);
- c) digital photo;



- d) valid identity document and tax code and, if foreigners legally residing in Italy, valid residence permit;
- e) certification of the secondary school-leaving certificate or a true copy thereof or, provisionally, self-certification in accordance with Presidential Decree no. 445/2000 regarding possession of the secondary school-leaving certificate;
- f) *privacy* information disclosure;
- g) statement of withdrawal from studies issued by the university of origin (*if any*);
- h) payment for administrative costs of the secretarial fees in the amount of € 8,000.00 (eight thousand) corresponding to 50% of the annual contribution as envisaged by the "Tuition Fees and Contributions Regulations for EU and non-EU Students Academic Year 2024-2025".
- i) revenue stamp for EUR 16.00 (sixteen/00);
- j) receipt for the tax imposed by the Regione Lazio.

The payments indicated in letters h), i) and j) must be made exclusively through the payment systems available on the GOMP student portal. Other payment systems are not allowed.

The registration procedure must be carried out following the instructions in the "Guide to registration" which will be made available on the institutional site at the time of publication of the results. Any requests for assistance or any reports of technical problems that may be encountered during the registration process must be sent exclusively to e-mail to [office@unicamillus.org](mailto:office@unicamillus.org). Such requests shall only be met if they are received within the time limits set out in this Article for the completion of the procedure. Requests received after these deadlines or sent to different institutional e-mail addresses of the University will not be considered.

Please note: For the completion of the registration procedure it is necessary to have authentication and digital signature tools. The instruments envisaged are:

- Authentication and digital signature via **SPID** or **CIE** (strongly recommended and reserved for all adult students with an Italian identification document);

*or, in alternative to SPID or CIE*

- Authentication and digital signature via **OTP** (an alternative to SPID, particularly reserved for adult students who do not have an Italian identification document). The OTP authentication procedure can be easily performed, before enrolment, directly on the GOMP student portal.

In the case of a minor student, the registration procedure must be carried out by a parent or by a person exercising parental responsibility. In this case, it will be the care of the parent or the person exercising parental responsibility to have one of the above mentioned tools of authentication and digital signature.

Any unfilled places due to withdraws or non-registration, will be managed according to the following “sliding procedure”:

- publication on [www.unicamillus.org/admissions](http://www.unicamillus.org/admissions) of a special “sliding procedure” vacancy filling notice for non-registration or dropouts;
- those admitted following a “sliding procedure” must proceed to enrolment in accordance with the modalities set out in this article and to payment of the amount set out in point h), i) and j) by 3 pm on the second working day following the publication of the relevant notice;
- the “sliding procedure” will be repeated until the available places indicated in this Article are filled.

The University reserves the right to change modalities and timing of enrolment, should it be deemed necessary for organisational reasons or for law and regulations’ related reasons, notifying all candidates through public notices on the University’s website.

Publication of all notices on the University's website acts as official notification to the interested parties. Any personal notices sent to the email addresses entered by candidates on the system during the exam registration phase are only intended to assist them in following the competition process and in no way substitute the notices published on the University's website, which is the only official communication channel of the University. Therefore, it remains the responsibility of the candidate to verify their position by complying with the terms and conditions for registration.

Italian and foreign students with qualifications obtained abroad must deliver to the student office, by the beginning of the Academic Year, under penalty of exclusion, the official translation into Italian of their qualifications, complete with legalisation where necessary and a Declaration of Value issued by the Italian Embassy or Italian Consulate General with territorial jurisdiction in the country in which the qualification was obtained. As an alternative to the Declaration of Value and the official translation into Italian, the qualification may be presented accompanied by the sworn translation in Italian or English, accompanied by the certificates issued by CIMEA. For the issue of such certificates, the student can access the link <https://www.unicamillus.org/cimea-agreement/> and carry out the procedure provided

Please refer to the provisions of Law no. 33 of 12/04/2022 and the subsequent Ministerial Decree no. 930 of 29/07/2022 and Ministerial Decree no. 933 of 02/08/2022, to which reference is made in full. The maximum enrolment limit is no more than two simultaneous study courses, as multiple enrolments are not permitted in any case.

For any discussion relating to the student's career, including administrative matters, from the date when the student reaches the legal age of majority, the University will communicate with the student only. Therefore, any communications of any kind from third parties, including parents, will be disregarded and not replied to.

Candidates, who do not meet the above deadlines, will be considered as dropouts and will lose their right to enrol. In that case, any costs already incurred, even during registration, will not be refunded by the University under any circumstances.

Candidates enrolled according to the aforementioned methods, who have not correctly answered at least six out of ten questions from the Chemistry, Biology and Physics sections of the admission test, are admitted with Additional Academic Requirements (AARs – OFA in Italian), limited to the discipline in question, and are required to follow a specific training course aimed at remedying the educational gap detected, before taking the relevant examination envisaged in the Study Plan, and, in any case, within the first year of the study course. Fulfilment of AARs will be verified by the course lecturers.

If the enrolment has been finalised remotely or outside the University premises, the student, within the term of 14 (fourteen) days, starting from the date of making the envisaged payment, may exercise the right to withdraw by clearly notifying UniCamillus of the wish to withdraw, by registered letter with confirmation of receipt. If the right of second thoughts cancellation is exercised, UniCamillus shall proceed to refund the student for the costs incurred for enrolment within the following 14 (fourteen) days – retaining for secretarial and enrolment services an amount equal to 5% of the amount paid – using the same means of payment used by the User for payment, unless a different means of payment is expressly indicated.

The exercise of the right of second thoughts cancellation is equivalent to the submission of an application to withdraw from the course of studies as referred to in Article 9 of this Call.

The University does not refund payments made except in the mandatory cases expressly governed by this notice of call and the Student Contract.

### **Article 8 – Compulsory vaccinations**

Students admitted to enrolment shall declare their commitment to the following undertakings within 30 days of enrolment itself:

- the tuberculin test performed according to the Mantoux method, in accordance with the guidelines for the control of tubercular disease (provision 17.12.1998 of the State-Regions Conference) and Presidential Decree No. 465 of 07.11.2001 regulating anti-tubercular vaccination;
- vaccination against viral hepatitis B, pursuant to Italian Law 165 of 27 May 1991.

Students also declare their commitment to undergo any other vaccination available, as from time to time imposed by law or deemed appropriate by the University for the safety of the students themselves and of all those with whom they may come into contact as a result of the academic activities in which they are required to participate.

### **Article 9 – Withdrawal, transfer or discontinuation of studies**

Students who wish to withdraw from studies must submit an “application to withdraw from studies” using the online procedure by accessing the student portal (GOMP) with their credentials and going to the section “Careers > Applications > Application to withdraw from studies”.

Withdrawal from studies is deemed to be completed with the issue of the relevant release document. This document will only be issued to students who, at the time of application, have complied with the payment of the envisaged fees and contributions.

In the event of withdrawal or transfer, amounts already paid up to the time of submission of the relevant application will not be refunded under any circumstances by the University under any circumstances, not even if the student does not attend the Seminars offered by the University.

Outgoing transfer *consent* and the issuance of the relevant documentation may only be granted to students who, on the date of application, have paid all relevant academic contributions, fees and stamps.

In any case, a student who abandons studies after the start of classes is required to pay all the fees and contributions stipulated in the Fees and Contributions Regulations for the academic year in which he or she has enrolled, readily available on the University website at the following link <https://www.unicamillus.org/it/regulations/>.

### **Article 11 – Warnings**

Pursuant to prevailing legislation, the University reserves the right to verify the truthfulness of the declarations made by the candidate at any stage of the enrolment process. The candidate must therefore provide all the necessary elements to allow for the appropriate verifications. If false or misleading declarations are found in the documentation submitted by the candidate, without prejudice to the sanctions provided for by the Criminal Code and the special laws on the subject and the exposure of the declarant to action for damages by the interested parties, any enrolment will be cancelled, any benefits granted will be recovered and any university fees and contributions paid will be withheld and not refunded under any circumstances.

The University reserves the right to change the location of placements both in the region and outside the region and the mode of delivery of the courses, should it be deemed useful for organisational reasons and/or health safety requirements, by publishing notices on the University's website, which is the University's only official communication channel.

For legal and interpretative purposes, only the call approved by Rector's Decree no. 438 of 29<sup>th</sup> July 2024 shall apply; it is filed and drawn up in Italian and available at the teaching secretary's office, with a true copy available on request.

For all matters not provided for in this call, please refer to the University's Statute, the Teaching Regulations for the course, and the Tuition Fees and Contribution Regulations for the Academic Year 2024-2025, which can be readily consulted on the University's website at the following link <https://www.unicamillus.org/it/regulations/> that the student, by participating in this call, fully accepts.

### **Article 11 – Procedure Conformity Commission**

A specific provision shall appoint a Commission to ensure the smooth and proper conduct of the competition procedures.

Vittorino Testa, Student Services Directorate – UniCamillus University, is in charge of the procedure.

## Annex A

### Schedules of questions for the admission tests to Six-year degree courses in Dentistry and Dental Prosthetics

#### Logic, problem-solving and reading comprehension

Assessment of the ability to use language correctly and to logically complete an argument in a manner consistent with the premises, which are stated in symbolic or verbal form through multiple-choice questions also formulated with short propositions, discarding erroneous, arbitrary or unlikely answers.

Analysis of cases or problems, also of an abstract nature, whose solution requires the adoption of different forms of logical reasoning.

#### Biology

The Chemistry of living things.

The biological importance of weak interactions.

Organic molecules present in organisms and their functions. The role of enzymes.

The cell as the basis of life.

Cellular theory. The dimensions of cells. Prokaryotic and eukaryotic cells in animals and plants. Viruses.

The cell membrane: structure and functions – transport across the membrane.

Cellular structures and their specific functions.

Cell cycle and cell reproduction: mitosis and meiosis – chromosome kit and chromosome maps.

Bioenergetics.

The energy currency of cells: ATP.

Oxidation-reduction reactions in living beings.

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 – inheritance models.

Molecular genetics: structure and DNA 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-chromosome-related inherited diseases.

Biotechnology: recombinant DNA technology and its applications.

Heredity and 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 systems and apparatuses in humans and their interactions.

Homeostasis.

## **Chemistry**

The constitution of matter: states of aggregation of matter; heterogeneous 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, ionisation potential, electronic affinity, metallic character. Relationships between electronic structure, position in the periodic system and properties of the elements.

The chemical bond: ionic bond, covalent bond and metallic bond. Binding energy. Bond polarity. 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, the mole concept and its application, elementary stoichiometric calculations, balancing simple reactions, the different types of chemical reactions.

Solutions: solvent properties of water, solubility, the main ways of expressing the concentration of solutions.

Equilibrium in aqueous solution.

Elements of chemical kinetics and catalysis.

Oxidation and reduction: oxidation number, the concept of oxidant and reductant. Balancing simple reactions.

Acids and bases: the concept of acid and base. Acidity, neutrality and basicity of aqueous solutions. pH.

Hydrolysis. Buffer solutions.

Fundamentals of organic chemistry: links between carbon atoms, crude and structural formulas, the concept of isomerism. Aliphatic and aromatic hydrocarbons. Functional groups: alcohols, ethers, amines, aldehydes, ketones, carboxylic acids, esters and amides. Elements of nomenclature.

## **Physics**

Measurements: direct and indirect measurements, fundamental and derived quantities, physical dimensions of quantities, knowledge of the decimal metric system and of the Systems of Units of Measure CGS, Technical or Practical (ST) and International (SI), of the units of measure (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 relationships between the connected kinematic quantities).

Dynamics: vectors and operations on vectors. Forces and moments of force with respect to a point. Moment of a pair of Forces. Vectorial composition of forces. Definitions of mass and weight. Gravitational acceleration. Density and specific gravity. Law of universal gravitation, 1st, 2nd and 3rd principles of dynamics. Work, kinetic energy, potential energies. Principle of conservation of energy. Impulse 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. Stevin'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 principles 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, series and parallel electrical resistances. Work, Power, Joule effect. Generators. Electromagnetic induction and alternating currents. Effects of electric currents (thermal, chemical and magnetic).

## **Mathematics**

Number 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 and rational exponents and their properties. Roots and their properties. Logarithms (in base 10 and base e) and their properties. Elements of combinatorial calculus. Algebraic expressions, polynomials. Remarkable products, nth power of a binomial, factor decomposition of polynomials. Algebraic fractions. First and second-degree algebraic equations and inequalities. Systems of equations.

Functions: fundamental notions about functions and their graphic representations (domain, codomain, sign, maximum and minimum, growth and decline, etc.). Elementary functions: whole and fractured algebraic, exponential, logarithmic, goniometric. Compound 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 loci. Measures angles in degrees and radians. Sine, cosine and tangent of an angle and their notable values. Goniometric formulas. Resolution of triangles. Cartesian reference system in the plane. Distance between two points and midpoint of a segment. The straight line equation. 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. Pythagoras' Theorem. Euclid's Theorems (first and second).

Probability and statistics: frequency distributions according to character type and main graphical representations. The notion of random experiment and event. Probability and frequency.

## **Humanistic culture and specific humanitarian mission of the University**

The University's specific humanitarian mission: topics of relevance to the shortage of health workers in many developing countries, diseases prevalent in these countries, bodies charged with addressing humanitarian issues, eminent figures who have made a contribution in these fields and

related topics. Specialist knowledge of such topics is not required: basic knowledge from reading newspapers and other normal media that commonly give news on such topics will suffice. In other words, these questions will be aimed at revealing the candidates' degree of interest in the aforementioned topics, which, if such interests exist, will certainly have been the subject of personal reading and in-depth study, albeit of an informative and non-specialist nature. Similarly, there may be general knowledge questions intended to highlight a high level of social and humanistic awareness considered necessary for the elevated profile of health professionals trained by UniCamillus.