



**CALL FOR APPLICATIONS FOR EU AND EU-EQUATED CITIZENS TO THE ONE-  
CYCLE DEGREE COURSE IN MEDICINE AND SURGERY IN ENGLISH WITH  
LIMITED ACCESS (Class LM-41) AT HUMANITAS UNIVERSITY  
SUMMARY OF THE CALL IN ENGLISH**

**Academic year 2021/2022  
Foreword**

**The official source of the Call for Applications for EU and EU-equated citizens is “BANDO DI CONCORSO, RISERVATO AI CITTADINI COMUNITARI ED EQUIPARATI, PER L’AMMISSIONE AL CORSO DI LAUREA MAGISTRALE A CICLO UNICO IN MEDICINA E CHIRURGIA (Classe LM-41) IN LINGUA INGLESE DI HUMANITAS UNIVERSITY” in Italian. This document represents a summary of the call.**

**This document is provided for the convenience of international students. In the event of disputes, the parties should refer only to the document in Italian.**

Admittance to the Degree Course is subject to selection through the University’s admissions test.

**SUMMARY**

- Art. 1 Number of places available**
- Art. 2 Admission requirements**
  - 2.1 Citizenship Requirements**
  - 2.2 Education Requirements**
- Art. 3 Test content**
- Art. 4 Application for the admissions test: deadlines and modalities**
- Art. 5 Applications procedure for candidates who reside in Italy**
  - 5.1 Date, location for the admissions test in Italy**
  - 5.2 Delivery of the admissions test**
- Art. 6 Application procedure for EU citizens who reside outside of Italy**

## **6.1 Delivery of the Admission Test**

## **6.2 Required hardware and software**

## **6.3 Disconnection from the admission test: conditions for retaking the test**

### **Art. 7 Candidates with special education needs**

### **Art. 8 Test Assessment and rankings**

### **Art. 9 Publication of the ranking list**

### **Art. 10 Online enrollment and reserve list**

### **Art.11 Reimbursement of the first installment**

### **Art.12 Completion of enrollment at Humanitas University**

### **Art. 13 Supervision committee and person responsible for the procedure**

### **Art. 14 – Table of deadlines**

### **Annex A: Structure of the test**

## **Art. 1 Number of places available**

For the academic year 2021/22, the number of places available for EU citizens and EU-equated citizens (as reported in art. 2) is established as 130.

The number of places available may change in accordance with a later Decree of the Ministry of University and Research (M.U.R.), pursuant to the provisions of Law n. 264, August 2, 1999. The Decree of MUR could confirm, increase, or decrease the number of places available.

## **Art. 2 Admission requirements**

Only candidates holding citizenship and education requirements reported in this paragraph are entitled to apply.

### **2.1 Citizenship Requirements**

Candidates must meet one of the following requirements:

- Citizens of Italy or of European Union member states.
- Citizens holding a European citizenship together with a citizenship of a country not belonging to the European Union.
- Citizens of UK, Norway, Iceland, Liechtenstein, Switzerland, the Republic of San Marino.
- Non-EU citizens holding a residence permit in Italy for employment or self-employment, for family reasons, political asylum, asylum for humanitarian or religious reasons.
- Non-EU citizens legally resident in Italy for at least one year in possession of a Secondary School Diploma obtained in Italy.
- Non-EU citizens, resident anywhere who hold diplomas from Italian schools abroad or foreign or international schools having bilateral agreements or special regulations for the recognition of qualifications and who satisfy the general conditions required to be admitted to study in Italy.
- Refugees.
- Diplomatic personnel accredited to International Organizations in Italy, Italian State, Vatican State

and their dependent family members.

**Candidates applying for and sitting the test without the citizenship requirements will not be considered for the ranking.**

## **2.2 Education Requirements**

To write the admissions test, candidates must either be in possession of a Secondary School Diploma or attending the last year of their secondary education (high school).

For students who attended high school outside of Italy, a diploma is considered valid if obtained after at least 12 years of education, in addition to being accompanied by the Declaration of Value issued by the Italian diplomatic authorities.

If the local school system provides for 10 or 11 years of schooling, the title is valid when integrated with one or two years of university, having passed all the required exams for those academic years.

**Candidates not holding valid qualification, according to the requirements of the law, will lose the right to enroll.** If the candidate is already enrolled, the candidate's enrolment will be cancelled.

For the validation of foreign qualifications, Humanitas University will follow Ministry guidelines for the academic year 2020-21 (latest update June 16<sup>th</sup> 2020) available in English at:

<http://www.studiare-in-italia.it/studentistranieri/>

## **Art. 3 Test content**

The admissions test is conducted entirely in English. Candidates are required to answer sixty (60) multiple choice questions. There will be 4 response options, of which only one is correct. The test will be either **computer-based** or **home-based** as per the articles which will follow.

Each exam session will have a unique test, all of which are the same level of difficulty.

Based on the programs listed in Annex A at the end of this document, the questions are divided as follows:

### **Scientific Thinking** (30 questions)

- Procedural Thinking (10 questions)
- Mathematical Thinking (10 questions)
- Visual Thinking (10 questions)

### **Academic Literacy** (30 questions)

## **Art. 4 Application for the admissions test: deadlines and modalities**

The application for the admissions test must be completed exclusively online through the University website [www.hunimed.eu](http://www.hunimed.eu). Registration will be open from **November 16<sup>th</sup> 2020** until **February 3<sup>rd</sup> 2021**.

Due to the epidemiological emergency caused by Covid-19 and in accordance with national and regional provisions, Humanitas University has ordered that:

- All EU citizens who currently reside in Italy must carry out the test at selected test centres, where all the necessary health and security procedures will be guaranteed.
- If the candidate resides outside of Italy, he/she will take the admissions test online.

In case of developments of the epidemiological situation, **Humanitas University reserves the right to modify the test procedures up until the 11<sup>th</sup> of January 2021.**

### **Art. 5 Applications procedure for candidates who reside in Italy**

*The following information applies **only** to EU and EU equated citizens (see Art 2) who **reside in Italy**, as detailed in Art 3. For EU and EU equated citizens whose residence is **outside of Italy**, please see Art 5 for a full outline of the application procedure.*

#### **Online application procedure:**

- 1. MyPORTAL Online registration at <https://humanitas.esse3.cineca.it>:** the candidate must register online to receive a username and a password; the username and password will be necessary to access the personal page on Humanitas University MyPORTAL.
- 2. Application for the Admissions Test:** the candidate must apply for the admissions test through MyPORTAL according to the timeline reported above. After the login, candidates must click “Admission test” from the right-hand menu bar and select “Medicine and Surgery Degree Course” first and “EU Admissions Test” on the following page. Candidates must complete all the required steps until they receive a confirmation e-mail with a link to the website where it is possible to pay the test fee and select a test center and time.
- 3. Payment of the test fee and choice of the test center/exam date:** the link redirects candidates to the Selexi homepage. Candidates must use MyPORTAL username and password to login the portal. After indicating the home address, it is mandatory to complete the payment of the test fee to be able to select the test center location and time.

The number of seats available in all test centers are limited and subject to availability.

**The test centre address will be shared with the candidate via e-mail** at the end of the registration time window, from February 04<sup>th</sup> to February 07<sup>th</sup> 2021. Should the candidate not receive the above-mentioned e-mail, please contact the Helpdesk Staff at [convocazioni@ilmiotest.it](mailto:convocazioni@ilmiotest.it).

**Fee:** The test fee is €165,00. Payment must be completed by credit card **no later than February 3<sup>rd</sup> 2021**, which is the last day of registration. Please note that the payment of the test fee alone does not mean registration has been completed. **The registration fee of € 165,00 is non-refundable in any case.**

The application for the admissions test must be completed according to the instructions described

above, on penalty of exclusion.

### 5.1 Date, location for the admissions test in Italy

*The following information applies **only** to EU and EU equated citizens (see Art 2) who **reside in Italy**, as detailed in Art 3. For EU and EU equated citizens whose residence is **outside of Italy**, please see Art 5 for a full outline of the application procedure.*

**Testing Dates:** Candidates who currently reside in Italy will take the test either on **Friday, February 12<sup>th</sup> 2021**, or on **Saturday, February 13<sup>th</sup> 2021**.

There will be 3 available test sessions, of which the candidate will choose 1:

1. Friday, February 12<sup>th</sup> at 09:00 CET
2. Friday, February 12<sup>th</sup> at 14:00 CET
3. Saturday, February 13<sup>th</sup> at 09:00 CET

**Testing Location:** Candidates may schedule their examination at one of the selected locations in Italy:

Country	City
Italy	Bari
Italy	Bologna
Italy	Cagliari
Italy	Catania
Italy	Firenze
Italy	Genova
Italy	Milano
Italy	Napoli
Italy	Palermo
Italy	Reggio Calabria
Italy	Roma
Italy	Torino
Italy	Trento
Italy	Verona

Each of the three sessions will be available at all test centers on a first-come, first-served basis. Selection of the time and place for the test is done during the registration process, outlined in Art 4.

### 5.2 Delivery of the admissions test

*The following information applies **only** to EU and EU equated citizens (see Art 2) who **reside in Italy**, as detailed in Art 3. For EU and EU equated citizens whose residence is **outside of Italy**,*

*please see Art 5 for a full outline of the application procedure.*

The time allowed to complete the test is 120 minutes and it is divided in two parts:

- Part 1: 60 minutes for the scientific thinking questions;
- Part 2: 60 minutes for academic literacy questions.

### **Procedures on Test Day**

- Candidates must arrive **one hour prior to their scheduled test time** for identification and registration with a valid identity document – identity card, driving license or passport – on penalty of exclusion.
- Candidates who arrive after the test start time will not be allowed to sit the test.
- Candidates will receive a personal PIN code and, after registering at the test center, they will be assigned a computer place to sit the test.
- The Commission will instruct candidates to log into the system using their personal PIN code. Candidates will then be requested to read the test instructions on how to carry out the test correctly.
- Once the candidate submits part 1 of the test or the time expires, **the candidate will not be able to access that part of the test again.**
- Candidates may choose to leave the test room at any time but will be unable to return to continue the test. Only the questions completed prior to leaving the room will be corrected. Candidates who need to leave the room in exceptional cases will be accompanied by the test invigilators.
- Invigilators will provide candidates with paper and a pen to make calculations.
- When the time available to complete the test expires, the candidate will automatically be logged out by the system. Candidates must wait for instructions on how to leave the room and must return all materials used for making notes.
- During the test, candidates will not be allowed to talk to anyone apart from the staff and Supervision Committee. Candidates will also not be allowed to keep personal belongings with them such as bags, books or notes, dictionaries, mobile phones, pads, smart watches, calculators or any electronic device; candidates will be given indications for storing these items in a specific place. Anyone found in possession of the above-mentioned items during the test will be disqualified.

The Supervision Committee will ensure that rules are respected and will act accordingly if any violation occurs.

### **Art. 6 Application procedure for EU citizens who reside outside of Italy**

*The following information applies to EU and EU equated citizens (see Art 2) who **reside outside of Italy**, as described in Art 3 of this document. For EU citizens who reside in Italy, please see Art 4 of this document.*

**Testing Date:** Thursday, February 11<sup>th</sup> 2021.

Two sessions will be available:

1. Thursday, February 11<sup>th</sup> 2021 at 10:00 CET
2. Thursday, February 11<sup>th</sup> 2021 at 15:00 CET.

**Testing Location:** The test will be written online. All necessary procedures and protocols are outlined in Art 5.1.

**Online application procedure:**

1. **MyPORTAL Online registration at <https://humanitas.esse3.cineca.it>:** the candidate must register online to receive a username and a password; the username and password will be necessary to access the personal page on Humanitas University MyPORTAL.
2. **Application for the Admissions Test:** the candidate must apply for the admissions test through MyPORTAL according to the timeline reported above. After the login, candidates must click “Admission test” from the right-hand menu bar and select “Medicine and Surgery Degree Course” first and “EU Admissions Test” on the following page. Candidates must complete all the required steps until they receive a confirmation e-mail with a link to the website where it is possible to pay the test fee and select the exam session.
3. **Payment of the test fee and choice of the exam session:** the link redirects candidates to the Selexi homepage. Candidates must use MyPORTAL username and password to login the portal. After indicating the home address, it is mandatory to complete the payment of the test fee to be able to select the exam session.

At the end of the registration time window, from February 04<sup>th</sup> to February 07<sup>th</sup> 2021, the candidate will receive a confirmation email with instructions for accessing the test (see art 6.1).

**Should candidate not receive the above-mentioned e-mail, please contact the Helpdesk Staff at [convocazioni@ilmiotest.it](mailto:convocazioni@ilmiotest.it).**

**Fee:** The test fee is €165,00. Payment must be completed by credit card **no later than February 3<sup>rd</sup> 2021**, which is the last day of registration. Please note that the payment of the test fee alone does not mean registration has been completed. **The registration fee of € 165,00 is non-refundable in any case.**

The application for the Admissions Test must be completed according to the instructions described above, on penalty of exclusion.

## **6.1 Delivery of the Admission Test**

*The following information applies to EU and EU equated citizens (see Art 2) who **reside outside of Italy**, as described in Art 3 of this document. For EU citizens who reside in Italy, please see Art 4 of this document.*



The registration confirmation e-mail, which is sent to all candidates at the end of registration, contains indications on how to complete the computer set up for the test.

Candidates are required to:

1. Install the Proctor Exam Google Chrome plugin, necessary to guarantee appropriate invigilation during the exam.
2. Complete a system check, which verifies that the video, audio, and internet connection is adequate for access to the exam.

When completing the above-mentioned steps – **to be completed at least 48 hours prior the test day** - candidates will receive a second e-mail containing the link to access the exam and instructions on how to complete their identification, which will be available in the hour before the test session scheduled time, and the environmental check to allow invigilation. Any official photo ID can be used for identification (passport, national ID card, driving license). The link to access the exam will be activated at the test session scheduled time.

During the test, invigilators will monitor candidate behavior via webcam.

The time allowed to complete the test is 120 minutes and the test is divided in two parts:

- Part 1: 60 minutes for the scientific thinking questions;
- Part 2: 60 minutes for academic literacy questions.

During the test, candidates should be aware of the following rules:

- Candidates who do not complete the identification before the test session scheduled time will not be allowed to sit the test.
- Once the candidate submits part 1 of the test or the time expires, the candidate will not be able to access that part of the test again.
- Candidates must be visible on their webcams at all times. Going to the bathroom during the test is forbidden.
- Candidates are allowed to use blank paper and a pen to make calculations – invigilators will require candidates to show them before the beginning of the test.
- Candidates may not wear headphones. Speaking to anyone during the test is prohibited.
- Candidates are strictly forbidden from using phones, additional devices, books or notes during the test.
- Candidates must be in a bright room and clearly visible for the entire duration of the test.
- Nobody else may be present in the room during the test.
- Candidates consent to being video recorded during the test.

Candidates **will be monitored at all times** while taking the test. In addition, **recordings will be reviewed after the test** to evaluate candidates behavior and validate the final score. Those who do not comply with the above rules will be **disqualified**. The Supervision Committee will ensure that all rules are respected and will act accordingly if any violation should occur.

## 6.2 Required hardware and software

*The following information applies to EU and EU equated citizens (see Art 2) who **reside outside of Italy**, as described in Art 3 of this document. For EU citizens who reside in Italy, please see Art 4 of*



*this document.*

In order to take the admission test online, candidates **must** have the following hardware and software requirements available:

**Hardware:**

- A computer or laptop with webcam, microphone and speakers.
- A smartphone or tablet.

Please note that **both** a computer/laptop **and** a smartphone/tablet are necessary to take the test.

**Software and Internet connection:**

- Operating system: Windows 8 or later
- MAC-OS 10.12 or later
- Browser: it is mandatory to use **Google Chrome** (Version 81.0 or later);
- Internet connection: minimum upload and download speed of 1 Mbps. It is highly recommended that candidates use a wired internet connection for the test.
- Smartphone or tablet (Android min v.4.1 – IOS min. v.8) equipped with a video camera.

Candidates will also be requested to download an APP on their smartphone/tablet (34MB) from Google Play or App Store.

### **6.3 Disconnection from the admission test: conditions for retaking the test**

*The following information applies to EU and EU equated citizens (see Art 2) who **reside outside of Italy**, as described in Art 3 of this document. For EU citizens who reside in Italy, please see Art 4 of this document.*

In case of disconnections of the exam on-line platform, candidates may be granted the opportunity to retake the test, after a preliminary investigation by the relevant Commission.

**In order to do so, the candidate should write an email to [admissions@hunimed.eu](mailto:admissions@hunimed.eu) by 8.00 p.m. CET on Friday, February 12<sup>th</sup>, 2021.** The email should include documentation and evidence for the disruption. The Commission will decide on this matter after reviewing the Proctor Exam videorecording and candidates will be informed of the decision via e-mail by Monday, February 15<sup>th</sup>, 2021.

In case a candidate does not finish the test due to disconnection from the exam platform, not attributable to the test provider, he/she **will be assigned the test score acquired at the time of disconnection**. Possible examples of disconnection include but are not limited to: interruption of the Wi-Fi connection; power outage; technical problems related to candidates' laptop/computer. In case of video disconnection from the virtual classroom, the Commission will assess whether the candidate can continue the test or whether the test is invalidated.

Authorized candidates will retake the admissions test on **February 18<sup>th</sup>, 2021 at 14:00 CET** with the same modality as described in this document. The test will be of the same level of difficulty. **Candidates who retake the test will only be evaluated on the retake score.** If candidate's request

to retake the test is not accepted, he/she will be assigned the test score acquired at the time of disconnection.

### **Privacy**

All candidates' personal data will be exclusively used to provide the admissions test and to elaborate test scores and ranking list.

For further details candidates can read the privacy policy on the MyPORTAL area of the [www.hunimed.eu](http://www.hunimed.eu) website.

## **Art. 7 Candidates with special education needs**

Candidates with any kind of disability are invited to make a formal request for the support they need in order to complete the test. Candidates with learning disabilities may request the special terms foreseen in the Ministerial Decree DM 5669/2011 to guarantee equal opportunities during the test, including additional time for completing the test.

Among those candidates with disabilities the following should be considered: candidates who are blind, suffering from complete blindness or with vision not exceeding one tenth in both eyes; candidates who are deaf, from birth or before learning to speak; candidates with percentage of civil disability equal to or higher than 66%, candidates with handicap certificate of disability according to Law 104/92 as amended by Law 17/99. Disabilities must be certified by appropriate medical certificate issued by the competent health authorities. Certificates will be accepted in Italian or in English.

Among the candidates with learning disabilities the following should be considered: candidates affected by dyslexia, dysgraphia, dyscalculia or dysorthographia, certified by appropriate medical certificates, issued no earlier than 3 years prior by the National Health Service, by specialists or by accredited medical institutions, if approved by the Regions. The additional time for completing the test for candidates with learning disabilities will be in the measure of 30% compared to the standard time for the test, pursuant to Ministerial Decree DM 5669/2011.

These requests must be specified when applying for the Admissions Test on MyPORTAL and the medical certificates must be attached in electronic format. **Certificates sent by e-mail will not be accepted.**

During the online procedure, after clicking on admissions test, candidates with special needs are required to request accommodations by selecting the relevant box and attach the medical report on the upload tab.

## **Art. 8 Test Assessment and rankings**

Italian citizens, EU citizens and EU equated citizens are admitted to the Degree Course in descending order based on their score.

The scores are assigned as follows:

- 3 points for each correct answer
- 1 point for each incorrect answer
- 0 points for each non-given answer. The highest achievable score is 180 points.

Candidates who do not obtain at least 20 points in each of the test parts will not be considered for enrollment.

**Should two or more candidates obtain the same score**, the following criteria will be applied:

1. The higher ranking position will be assigned to the candidate who has obtained a minor score difference, in absolute value, between the Scientific Thinking section and the Academic Literacy section;
2. In case of further equal scores the higher ranking position will be assigned to the candidate who has obtained the highest score in the Scientific Thinking section;
3. In case of further equal scores the higher ranking position will be assigned to the candidate who has obtained the highest score respectively in the Scientific Thinking subsections of Procedural Thinking, Visual Thinking, Mathematical Thinking;
4. In case of further equal scores priority will be given to the younger candidate.

### **Art. 9 Publication of the ranking list**

After the test has been corrected, the ranking list will be published by Humanitas University on **February 22<sup>nd</sup>, 2021** on the website [www.hunimed.eu](http://www.hunimed.eu), maintaining anonymity. Candidates will be able to see their position in the ranking list through the pre-matriculation number generated during the Admissions Test application procedure. Moreover, using the *username* and *password* obtained during the registration on the portal, candidates can see their score by accessing their personal page.

### **Art. 10 Online enrollment and reserve list**

Enrollment - to be completed exclusively online - will be possible between **February 22<sup>nd</sup>, 2021 and February 26<sup>th</sup>, 2021**. In this time range:

- Candidates with a ranking position from n. 1 to n. 30, who are eligible for a scholarship funded by the University, will automatically be considered as **pre-enrolled** until the Scholarship Winners are announced. <sup>1</sup>
- Candidates with a ranking position from n. 31 to position n. 130 are entitled to enroll.
- Candidates with a ranking position from n. 131 to position n. 160 are entitled to a conditional enrollment. Conditional enrollments will be confirmed, following the ranking order, based on the places available due to withdrawals of some students placed from position n. 1 to position n. 100. Confirmations will be sent by e-mail on March 2<sup>nd</sup> 2021.

---

<sup>1</sup> Further information regarding the Conditions of Enrollment can be found in the Scholarship Rules and Regulation 2021-2022.

**Before February 26<sup>th</sup>, 2021**, both admitted candidates (from position 31 to position 130 of the ranking) and conditionally admitted candidates (from position 131 to position 160 of the ranking) **must complete the payment of the first instalment, which amounts to 4.156,00 €, on penalty of exclusion.**

Free places, for candidates from position 161 in the ranking, will be assigned according to the following procedure:

- Publication on the website [www.hunimed.eu](http://www.hunimed.eu) of the number of places not covered due to withdrawals. Based on the test ranking and according to the number of available places, the University will begin the admission of candidates who ranked from position 161 onwards (reserve list).
- Eligible candidates must enroll and pay the first instalment (4.156,00 €) by the deadline reported into the admission e-mail they will receive from the University.
- The procedure will be repeated until there are no more places available.

Even candidates in the reserve list might be invited to complete a conditional enrollment. The deadline will be specified in the conditional admission e-mail they will receive from the University.

**Candidates who do not comply with the above-mentioned deadlines will lose the right to enroll at Humanitas University.**

### **Art.11 Reimbursement of the first installment**

First installment (of an amount of € 4.000,00) will be reimbursed only to conditionally admitted candidates (from position n. 101 to position n. 130) if enrollment cannot be confirmed. This condition will occur if available places will be taken by other candidates with a higher position in the ranking. Those candidates will be reimbursed within 60 days of being notified.

**In no other cases or conditions will the first installment be reimbursed.**

The regional tax (amounting to € 140,00) will be reimbursed only to candidates transferring from an Italian University, having passed the Humanitas University admissions test and already paid the regional tax to the incoming university for year 2021/2022.

### **Art.12 Completion of enrollment at Humanitas University**

Candidates who have been invited to enroll must finalize the on-line enrolment procedure by:

1. Uploading on the following documents to the online portal (MyPORTAL):
  - Photocopy of Passport.
  - Photocopy of tax code (Codice Fiscale).
  - Passport photo.
2. Providing a self-declaration of high school qualification achieved.

3. Fully accepting the privacy policy and economic conditions specified in the call and in the University Fee Regulation.

Students completing the online enrolment procedure, having paid the first instalment, achieve the full enrolment status at Humanitas University.

For students holding a foreign secondary school qualification, a copy of that certificate translated into Italian and legalized by the Italian Consulate/Cultural Institutes, together with the Dichiarazione di Valore (Declaration of Value) released by the Consulate. These documents can be handed in at Humanitas University Student Office from Monday to Friday, from 9.00 to 12.00 and from 14.00 to 17.00. An appointment is not necessary.

Once enrolled at Humanitas University, students with previous university courses can submit their curriculum and request the recognition of their prior activities. Recognition is subject to evaluation according to the Humanitas University procedure.

### **Art. 13 Supervision committee and person responsible for the procedure**

To assure the fairness of the Admissions Test procedure, Humanitas University will appoint a committee, to be formed of at least three members. University and external personnel will help the commission in the candidate identification and test supervision.

The person in charge of the procedure is Dr. Massimiliano Laganà (Managing Director of Humanitas University), email [info@hunimed.eu](mailto:info@hunimed.eu). For further information, candidates can contact the Student Office by phone at +39 02 8224 3777.

### **Art. 14 – Table of deadlines**

Beginning of Admissions Test applications	16/11/2020
Deadline of Admissions Test applications	03/02/2021
Admissions test	11, 12, 13/02/2021
Publication of ranking list	18/02/2021
Beginning of enrollments	22/02/2021
Deadline for enrollments and payment of first installment	26/02/2021
Enrollment from the reserve list	02/03/2021

## **Annex A**

### **Scientific Thinking**

**Mathematical Thinking** measures these abilities:

1. interpret graphs given an example
2. predict changes in variables in simple formulae

3. use formulae by substituting values and calculating the result
4. solve problems with symbols in place of variables, including simultaneous equations
5. put numbers in the correct order, including decimals and negative numbers)
6. work with orders of magnitudes and conversions

### **SYLLABUS OF EXPECTED MATHEMATICAL KNOWLEDGE**

#### Basics of set theory:

- empty set, union, intersection, difference
- complementary set
- subset

#### Arithmetic:

- natural numbers
- operations (addition, subtraction, multiplication, division) and their properties
- priority of operations
- multiples and sub-multiples
- prime numbers and decomposition into prime factors
- greatest common divisor and least common multiple of two natural numbers
- integer numbers
- absolute value
- rational numbers as fractions
- conversion of fractions into finite or periodic decimal numbers
- use of ‘.’ and ‘,’ in the English convention
- meaning of hundred, thousand, million, billion, and trillion, as well as tenth, hundredth, etc.
- rounding a number
- percentages and proportions
- definition of a power with integer exponent
- properties of powers
- scientific notation
- square and cubic roots
- order of numbers, properties and powers

#### Algebra:

- variables, monomials, and polynomials
- special products
- substituting values into variables
- identities and equations
- addition and multiplication rules for equations
- linear and quadratic equations in one variable
- verifying solutions
- simultaneous linear equations with two or three variables
- addition and multiplication rules for inequations

- linear and quadratic inequations in one variable

Basics of geometry:

- formulae for the perimeter and area of squares, rectangles, triangles, parallelograms, circles

Analytic geometry:

- representation of numbers on a straight line
- coordinates of a point
- straight lines: vertical, horizontal, oblique
- equation of a straight line
- slope and intercept
- finding intersections between straight lines or between a straight line and the axes

Graphs:

- reading a graph
- finding quantities represented on the x- and y-axis, together with their units of measurement
- identifying the trend of a graph
- finding maxima and minima graphically
- comparing two graphs using the same x- or y-scale

Quantities:

- time (seconds, minutes, hours)
- dates (days, weeks, months, years)
- money (€, \$)
- length (meters and its multiples/submultiples)
- mass (grams and its multiples/submultiples)
- area
- volume (m<sup>3</sup> and litres, and their multiples and submultiples)
- conversion of a unit of measurement into its multiples or submultiple

**Procedural Thinking** measures these abilities:

1. follow a procedure/protocol/algorithm correctly (for example by using a flow chart)
2. predict the outcome of a perturbation in an interconnected system
3. apply the concept of collecting elements from different sets
4. compare a set of data with a scientific theory that can be confirmed or disproved by data
5. select relevant data and discard/ignore useless data
6. choose the most effective concept map to summarise a text

**Visual Thinking** measures these abilities:



1. demonstrate three-dimensional thinking ability
2. find complementary shapes
3. recognise mirror images
4. identify different visual patterns, including based on a description or an example
5. demonstrate careful observations, including localising objects in relation to other objects
6. describe a picture or a set of elements

### **Academic Literacy – Critical**

- Critical Thinking e.g. drawing reasoned conclusions and implications from data, statements, principles, judgements, beliefs or opinions.
  
- Local expeditious reading, e.g. scanning and searching for specific details.
- Global expeditious reading, e.g. skimming for gist, searching for key ideas.
- Global careful reading, e.g. comprehending main ideas, connecting ideas from different texts and understanding how different texts relate to each other.
- Word- and sentence-level processes, e.g. word recognition, meaning of a preposition.

