



## 2022-2023 Sapienza Foundation Year Programme General Courses Contents

### PHASE I: LANGUAGE CLASSES

#### 1. *Preparatory Italian Language Course*

This online-only course provides students with basic language skills corresponding to level A1 of the *Common European Framework of Reference for Languages* (CEFR) in Italian. The course is focused on basic communication needs and basic language orientation. Designed for beginning learners of the language, this course consists in a series of multimedia lessons, exercises, and self-evaluation tests to be completed within the first month of the Programme before the start of the Intensive Italian Language Course (see below) in the classroom.

#### 2. *Intensive Italian Language and Culture*

This course provides students with language skills needed to achieve levels A2-B1 of the *Common European Framework of Reference for Languages* (CEFR) in Italian, and consists of 200 hours of study in the classroom. Grammar, vocabulary and communication skills are taught and practiced in class using up-to-date publications and additional materials supplied by the teachers. At the end of the course, students are expected to be able: to understand sentences and frequently used expressions related to areas of most immediate relevance; to communicate in routine tasks requiring a direct exchange of information on familiar and routine matters; to describe aspects of their background, immediate environment and matters in areas of immediate need.

### PHASE II: CURRICULAR CLASSES

#### a. Humanities

##### 1. *Art History*

Following established chronology and iconographic apparatus, the course introduces students to the study of art history, from Greek and Roman antiquity to early-20<sup>th</sup> century avant-garde, providing basic tools for historical-artistic analysis. The first part of the course offers a general overview of the main trends and styles of the protagonists of European art from ancient Greece to the Baroque. Particular attention is given to Italian Renaissance. The second part of the course focuses on contemporary art, from Neoclassicism to the 1920s. In this section of the course, major artistic movements that emerged between the second half of the 18th century and the first half of the 20th century



are analysed, in particular: Neoclassicism, Romanticism, Realism, Impressionism, Post-Impressionism, Expressionism, Cubism, Futurism, Dadaism and Surrealism.

## **2. History of Fashion**

The course aims at providing students with knowledge and critical competences on the relationships between fashion, culture and society in Italy during the XX century. Fashion can be defined as a cultural phenomenon, as it is concerned with meanings and symbols that mediate the relationship between individuals and the social world. Fashion may be defined as the cultural construction of an embodied identity. Talking about fashion, then, we do not refer only to dress, shoes and accessories, but to social representations and communication among individuals within a specific society. Focusing on the XX century Italian society, and in particular on women's role at the origins of *Made in Italy*, the course will analyse how fashion is part of a complex system where it is inextricably intertwined with culture, social structures, politics and economics.

## **3. Italian History**

The course aims at explaining events and key issues that have characterised the 19th and 20th centuries: from the Vienna Congress to the recent challenges of a globalised world. An itinerary marked by an incessant confrontation of continuity and breaking points, conflict and stability: the "long 19th century" and the industrial revolution, nationalism, liberalism and democracy, mass society, world conflicts, the Cold War and globalisation. Retracing the steps of republican Italy from the present unto the end of the Second World War, particular attention will be paid to: possible periodisations, available sources, successive phases of the Italian political system, links between the internal framework and the international context.

## **4. Italian Literature**

The course introduces students to the peculiar themes of Italian literature following conterminous historical events: The Middle Ages, Humanism to Renaissance, Early modern literature, Baroque, the Age of Arcadia, the Enlightenment, Neoclassicism, Symbolism and Realism, Italian *Verismo*, Futurism and the Avant-Garde, Hermeticism and Realism, Neorealism, the new Avant-Garde and Postmodernism. From Dante's *Divina Commedia* to Calvino's *Le città invisibili*, from Tasso's *Gerusalemme liberata* to Carducci's *Odi*, main schools and authors are covered with constant reference to their most outstanding works and their lasting legacy onto the literary culture of Italy.



## **b. Sciences**

### **1. Biology**

The course introduces students to the main subjects of Biology: The cell — Cell theory, prokaryotic and eukaryotic cells, animal and plant cells, specialised cell structures; The molecules of life — The properties of water, the specific properties of biomolecules and their functions; Nucleic acids — Structure and functions. DNA replication. DNA mutations and DNA repair mechanisms. DNA transcription: regulation of gene expression and mRNA processing. Protein synthesis: genetic code and translation process; Cell division — Mitosis and cell cycle. Meiosis; Proteins — Amino acids and peptide bond, the structure of proteins (primary, secondary, tertiary and quaternary structures). Fibrous proteins (collagen), globular proteins (haemoglobin), enzymes; Sugars — Structure and functions. Carbohydrate metabolism: cellular respiration and photosynthesis; Lipids — Structure and functions; Biological membranes; Viruses — Structural features and replication strategies.

### **2. Chemistry**

An introduction to Chemistry starting with the Periodic Table of Elements and its evolution. General Chemistry: Homogeneous and heterogenous mixtures, subatomic particles and their properties, the atomic structure, Heisenberg's uncertainty principle, elements and their properties, atomic radius, first ionization energy and electron affinity, molecular geometry, gases and their properties, thermodynamics, enthalpy and entropy, changes of state, solutions and their properties, molarity and molality, acids and bases, chemical kinetics. Organic Chemistry: Structures and formulas, compounds, hydrocarbons, alkanes, alkenes, alkynes acyclic and cyclic, aromatics, alkanes, reactivity, halogenation, stereochemistry, optical activity, racemates, *meso*-compounds, alkyl halides, alkenes, alkynes, benzene, alcohols, ethers, aldehydes and ketones, acetals and ketals, amines, carboxylic acids, esters, carbohydrates, nucleic acids, aminoacids, polypeptides and proteins, lipids.

### **3. Physics**

The basic contents of classical Physics are introduced with this course: Electrostatics, electric charges, conductors and insulators, contact and induction, electric fields, point charge, different charge distributions, electric potential, absolute potential, conductors in electric fields, the battery, dielectric materials, direct currents, electric circuits, ammeters and voltmeters, magnetism, Earth's magnetic field, compass, magnetic forces, the ampere, electromagnetism, induction, autoinduction, electrical and magnetic energy, alternating currents (AC), AC generators and transformers, periodic motion and waves, harmonic motion and the simple pendulum, sound and electromagnetic waves.



#### **4. Mathematics**

The course aims at providing students with the crucial contents of Mathematics: equations and inequalities, absolute value and irrational, functions, exponentials, logarithms, geometric transformations and function graphs, powers with real exponent, exponential functions, equations and inequalities, logarithmic functions, equations and inequalities, Cartesian plans, coordinates of a point, length and middle point of a segment, equations of a straight line, circumference and its equation; complex numbers, goniometric functions, angle, sinus and cosine, tangents, secants and cosecants, cotangents, goniometric functions, geometric transformations, associated angles, addition and subtraction, duplication, bisections, goniometric equations and inequalities, trigonometry, theorem applications, trigonometric applications, cluster analysis, permutations, factorial functions, combinations, arrangements, events and classic probability.

### **PHASE III: PREPARATORY CLASSES**

#### **a. Clinic Sciences**

The course focuses on contents and modalities of entrance exams in Clinic Sciences, either Italian- or English-medium (IMAT). Classes include theoretical direction and collective exercises based on recent and potential exam questionnaires under supervision of a trained teacher. Indicated for perspective students of: Medicine, Nursing, Pharmacy, Psychology, etc.

#### **b. Applied Sciences**

The course focuses on contents and modalities of entrance exams in Applied Sciences. Classes include theoretical direction and collective exercises based on recent and potential exam questionnaires under supervision of a trained teacher. Indicated for perspective students of: Architecture Economics, Engineering (all specialities), Management, etc.

#### **c. Human Sciences**

The course focuses on contents and modalities of entrance exams in Human Sciences. Classes include theoretical direction and collective exercises based on recent and potential exam questionnaires under supervision of a trained teacher. Indicated for perspective students of: Archaeology, Art History, Classic Studies, Law, Linguistics, Philosophy, Political Sciences, etc.



**Remarks:** Courses are primarily taught in Italian; teachers can use English in case that classroom circumstances should so require. Besides contents, all courses are aimed at providing students with the specialised Italian lexicon of each subject; students are encouraged to practice their Italian whenever possible.

Detailed programmes and time schedules will be made known at the beginning of each course.

Attendance is mandatory for at least 75% of the classes.

Students will be evaluated at the end of each course and their final score will be assigned accordingly.