



ISTITUTO DI ISTRUZIONE SUPERIORE

“MICHELE GIUA”

ind. CHIMICO-AMBIENTALE-INFORMATICO – LICEO

SCIENTIFICO delle SCIENZE APPLICATE Via Montecassino 09134

CAGLIARI - Tel (070) 500786 – 501745

email: catf04000p@istruzione.it PEC: catf04000p@pec.istruzione.it C.U.:

UFIVOL Cod. Fisc. 80014350922

ANNO SCOLASTICO 2025/2026

Programma di
Lingua Inglese

Classe: 5E - Ist. Tecn. Art. Chimica Mat. e Biotecnologie Ambientali - Cagliari

Materia: Lingua straniera (Inglese)

Docente: Giulia Delogu

Libri di testo in adozione

- Sciencewise – English for Chemistry, Materials and Biotechnology di C.Oddone; edito: San Marco
- In time 2 – Student’s book and workbook di O’Dell, Zanella, Brelstaff, Maxwell Edito: DeaScuola, Black Cat

Programma svolto

Grammar Focus

- Passive voice: formation and use in different tenses (present simple, past simple, future with *will*, present perfect)

- Order of adjectives: standard sequence in descriptive phrases (opinion, size, age, shape, color, origin, material, purpose)

Module 6 – Biochemistry and Nutrition

- Introduction to Biochemistry as the study of chemical processes in living organisms
- Structure and function of biological macromolecules: carbohydrates, lipids, proteins
- Carbohydrates: classification (monosaccharides, oligosaccharides, polysaccharides) and their role as energy sources
- Lipids: structural functions and energy storage
- Proteins: structural levels, biological roles and importance in cellular function
- Enzymes: nature as biological catalysts, mechanism of action, and influencing factors (temperature, pH, substrate concentration)
- Enzymes: models of binding: lock and key model, induced fit model
- Enzymes: competitive inhibitors and non-competitive inhibitors
- ATP production and its role as energy carrier
- Glycolysis: breakdown of glucose into pyruvate with net ATP gain
- Principles of a balanced diet and the impact of nutrition on human health
- Food-related issues: allergies, intolerances, and metabolic disorders (e.g. lactose intolerance, celiac disease)

Module 7 – Human Health

- DNA and RNA: structure, roles in heredity and cell regulation
- Protein synthesis: stages of transcription and translation; understanding the genetic code

Technical Focus – Spectrophotometry and Microscopy

(Based on materials provided by the teacher)

- Introduction to spectrophotometers and their application in analyzing chemical substances
- Main components and operation: light source, monochromator, sample cuvette, detector
- Infrared (IR) spectrophotometers: use in identifying molecular structures through IR absorption

- UV-Vis light spectrophotometer: application in measuring the absorption of ultraviolet and visible light by substances, and its role in analyzing concentration and molecular properties
- The optical microscope: parts, functioning, and techniques for observing cells and tissues
- The history of Microscope

Civic Education

- History of the European Union: key events and treaties
- European Institutions: roles and functions of the European Parliament, Commission, and Council
- Brexit Timeline and Historical Background
- Consequences of Brexit: impact on travel, education, and employment for EU and UK citizens

Cagliari, Giugno 2026

IL DOCENTE

Giulia Delogu