



**Syllabus for the Proof of Admission to Studies of Degree
Syllabus of Biology (School of Sciences)**

A. Ecology and sustainability

- The half atmosphere as engine economic and social: importance of the assessment of impact environmental and of the management sustainable of resources and waste. The relationship between the health environmental, human and of others beings alive: one health (a alone health).
- The sustainability of the activities everyday: use of indicators of sustainability, styles of life compatible and coherent with a model of development sustainable. Concept of fingerprint ecological.
- Initiatives Locals and global for promote a model of development sustainable.
- The dynamics of ecosystems: energy flows, matter cycles (carbon, nitrogen, phosphorus and sulfur), interdependence and relations trophic. Resolution of issues.
- Climate change: its relationship with the carbon cycle, causes and consequences on health, economy, ecology and society. Strategies and tools for face it: mitigation and adaptation.
- The loss of biodiversity: causes and consequences environmental and social.
- The problem of waste. Xenobiotic compounds: plastics and their effects on nature and on the health of humans and other living beings. prevention and management adequate of the waste.

B. History of the Earth and life

- The time geological: magnitude, scale and methods of dating. Issues of dating absolute and relative.
- The history of the Earth: main events geological.
- Methods and beginning for the study of the record geological: reconstruction of the history geological of a area. Beginning geological.
- The history of the life in the Earth: main changes in the big groups of beings alive and justification from the perspective evolutionary.
- The main groups taxonomic: characteristics fundamental. Importance of the conservation of the biodiversity.

C. The dynamic and composition terrestrial

- Structure, dynamic and functions of the atmosphere.
- Structure, dynamic and functions of the hydrosphere.



- Structure, composition and dynamic of the geosphere. Methods of study direct and indirect.
- The processes geological internal, the relief and his relationship with the tectonics of plates. Types of edges, reliefs, seismic and volcanic activity and resulting rocks in each one of them.
- The processes geological external: agents causal and consequences about the relief. Shapes main of modeling of the relief and geomorphology.
- The edaphogenesis: factors and processes trainers of the floor. The edaphodiversity and importance of his conservation.
- The risks natural: relationship with the processes geological and the activities human. Strategies of prediction, prevention and correction.
- Classification and ID of the rocks: according to his origin and composition. He cycle lithological.
- Classification chemical-structural and ID of minerals and rocks.
- The importance of the minerals and the rocks: uses everyday. His exploitation and user responsible.
- The importance of the conservation of the heritage geological.

D. Physiology and histology animal

- The function of nutrition: importance biological and structures involved in different groups taxonomic.
- The function of relationship: physiology and operation of the systems of coordination (highly strung and endocrine), of the receivers sensory, and of the organs effectors.
- The function of reproduction: importance biological, guys and structures involved in different groups taxonomic.

E. Physiology and histology vegetable

- The function of nutrition: the photosynthesis, his balance general and importance for the life in the Earth.
- The sap gross and the sap prepared: composition, training and mechanisms of transport.
- The function of relationship: guys of answers of the vegetables to stimuli and influence of the phytohormones (auxins, cytokinins, ethylene, etc.).
- The function of reproduction: sexual and asexual reproduction, evolutionary relevance, biological cycles, types of asexual reproduction, processes involved in the reproduction sexual (pollination, fertilization, dispersion of the seed and the fruit) and his relationship with the ecosystem.
- The adaptations of the vegetables to the half: relationship between them and the ecosystem in which they develop.



F. The microorganisms and forms acellular

- The eubacteria and the archaebacteria: differences.
- The metabolism bacterial: examples of importance ecological (symbiosis and cycles biogeochemicals).
- The microorganisms as agents causal of diseases infectious: zoonosis and epidemics.
- The crop of microorganisms: techniques of sterilization and crop.
- Mechanisms of transfer genetics horizontal in bacteria: the problem of the endurance to antibiotics.
- The forms acellular (virus, viroids and prions): characteristics, mechanisms of infection and importance biological.