BREVE DESCRIZIONE DEL CORSO

PREREQUISITI

basic knowledge of general physiology

OBIETTIVI FORMATIVI

The objective of the course is to provide students the basic knowledge of the environmental physiology (physiological responses to the variability of the environmental factors), and to gain a sound background in the physiological responses of animals to environmental pollutants and in their application in the ecotoxicological monitoring.

METODI DIDATTICI

Lectures (5 CFU, 40h) and exercitations (1 CFU, 12 h)

MODALITA’ D’ESAME

oral examination
- Internal environment and external environment
- Physiological responses to environmental variability.
- Conformists and regulators
- Homeostasis
- Range of tolerance and resistance
- Adaptation and acclimatization
- Temperature limits for living organisms, adaptations to extreme temperatures
- Heat exchanges between the organism and the external environment
- Determinants of body heat
- Endothermic and ectothermic organisms
- Thermal homeostasis
- Water exchanges between the organism and the external environment
- Osmoregulation in aquatic environments.
- Osmoregulation in terrestrial environments
- Gas exchange between the organism and the environment
- Respiration in aquatic and terrestrial environments
- Homeostatic control of oxygen concentration
- Organisms and environmental chemical pollutants
- Absorption, distribution, metabolism, accumulation, and excretion of chemical pollutants
- Detoxification mechanisms
- Effect of pollutants on proteins and nucleic acids
- Oxidative stress and exposure to environmental chemical pollutants
- Endocrine disruptors
- Toxicity testing