

[Informace ve studijní informačním systému STAG](#)

## Garant kurzu:

- [doc. RNDr. František Sedláček, CSc.](#)

## Vyučující kurzu:

- [doc. RNDr. František Sedláček, CSc.](#)

## Syllabus:

### Obsah přednášek:

1. Origin and evolution of animals: Cells and tissues of multicellular animals, basic anatomy, epithelial layers, body cavities.
2. Animal evolution: "Radiata", basal diversification of Bilateria, Deuterostomia, Platyzoa; Lophotrochozoa, Ecdysozoa; Arthropoda; Chordata: Urochordata, Cephalochordata, aquatic vertebrates; Tetrapoda.
3. Ecological part: adaptations: movement, food, defence; Vertebrate adaptations: movement, food, defence.
4. Animal ecophysiology: cold-warm-blooded animals, respiration, osmoregulation, water balance climatic limits, adaptations, migration; reproduction, reproductive organs, strategies, progeny investment, mate choice.
5. Intra- and interspecific relationships, parasitism, symbiosis, mimicry.
6. Regional biogeography: historical geography, biomes, zoogeographical regions, conservation; Regional biogeography and ecology - Europe: historical geography, biomes, fauna, introduced species, conservation, Central Europe: fauna (origin, ecology, distribution and its changes), important places, protected areas, conservation (causes of threats, conservation actions, habitat protection, environmental organisations and activities).
7. Gametogenesis, fertilisation, embryogenesis, cell differentiation, development of organs in the arthropods and vertebrates; Postembryonic development, types of larvae, metamorphosis, reproduction, hormonal control of reproduction and growth.
8. Evolution of genome, cytogenetics, relationships between genes, evolution and ontogeny (Hox genes, etc.).
9. Food intake and digestion; energetic metabolism and its regulation, thermoregulation, ecophysiological adaptations, dormancy.
10. Locomotion, skeleton and muscles; respiration, circulation, excretion, osmoregulation;
11. Evolution of nervous system and sensory organs, communication, pheromones, vertebrate immunity.
12. Model species of the animals for experimental research - what they really say about animal kingdom.

## Doporučená literatura:

- Anderson D.T., 1998: Invertebrate zoology. Oxford University Press.
  
- Jameson E. W., 1981: Patterns of Vertebrate Biology. Springer - Verlag.
  
- Pough F. H., Heiser J. B., McFarland W. N., 1996: Vertebrate Life. Prentice Hall.
  
- Rupert E. E., Barnes R. D. 1994: Invertebrate Zoology. (6. ed. ) Saunders Coll. Publ., Fort Worth, Philadelphia.