BO202: Evolution & the Tree of Life Information

Learning Outcomes

At the end of this module you should be able to

1. Describe natural selection and how it drives evolution

2. Explain what is meant by evolutionary constraint and evolutionary innovation giving examples.

3. Discuss the scientific evidence for evolution including the fossil record, anatomical and molecular homologies, antibiotic resistance and pathogenicity.

4. Consider the origins of the biological components of life, and describe the genetic mechanisms through which different types of evolutionary novelties can arise, including how such mechanisms generate variation in organisms.

5. Define systematics and explain the different approaches to studying the evolutionary relationships amongst organisms.

6. Interpret and describe different types of phylogenetic trees.

7. Discuss how the first prokaryotic and eukaryotic cells emerged

8. Outline and describe the major groups of microbes

9. Describe the basis of cellular and evolutionary diversity in eukaryotic organisms, using examples from the fungal kingdom

10. Discuss the evidence for the origin of animals.

11. Outline and discuss the major groups of animals

12. Describe the key evolutionary innovations that emerged in the plant lineage since it separated from other lineages.

Exam Detail

The module will be examined at the end of Semester 1. The breakdown of marks are as follows: 70% based on written paper, 30% based on continual assessment

Written paper. The Exam paper (2 hours) will have two sections. Students will have to answer all questions in section 1 (1/3 of marks) and 2 questions from section 2 (1/3 of marks for each question).

Section 1 = A number of short questions, all of which have to be answered.

Section 2 = Answer 2 out of 5 questions.

The questions will be developed based on the learning outcomes from the module and will be designed to examine a students understanding of the material, especially of concepts explored during the module.

Continual assessment: There will be two pieces of continual assessment to be completed by students. At the beginning of the module students will be given a short assignment (generating a graphical and written abstract), which has to be submitted by end of week 4. At the end of week 6 they will complete an online MCQ. Each piece of CA is worth 15% of the overall module mark.

Text Book: Campbell Biology