Marine ecology and sustainable use of marine resources

Faculty

Ana Hilário, PhD – CESAM Portugal
Ana Paula Mucha, PhD – CIIMAR, UP, Portugal

Learning Outcomes:

Marine ecosystems play a key role in global patterns. Indispensable to life itself, the marine environment is also a great contributor to economic prosperity and social well-being. Marine ecology is a discipline that draws on all the major fields within the biological sciences as well as oceanography, physics, geology, and chemistry, focusing on specific organisms as well as on particular environments or physical settings. To achieve a balance between exploitation and protection of the marine environment, one must add to the understanding of marine ecology an understanding of how humans interact with marine ecosystems and how these interactions can and should be managed through policy and governance.

At the end of the course the student should: 1) be able to recognise the principal coastal and oceanic marine ecosystems at global, regional and local scales; 2) have acquired knowledge of the key biological, physical and chemical processes operating in marine ecosystems; 3) have an appreciation for the impact of habitat perturbation on marine organisms, and subsequent ecosystem-level consequences and feedbacks; 4) be able to identify challenges and opportunities in developing policy and governance tools.

Syllabus:

1. Marine ecosystems functioning I. Coastal ecosystems
2. Marine ecosystems functioning II. The deep-sea
3. Methods in marine ecology and underwater exploration
4. Human Impacts on Marine Ecosystems
5. Sustainable use of marine resources
6. Ecology, law and policy in marine conservation

Course Structure:

In this course a series of lectures will be combined with critical analysis of key papers and treaties, student led seminars and field use of tools for the acquisition of biological and environmental data. Faculty members will be invited to present and debate cutting edge research on marine ecology and current themes on marine policy and governance. The key elements of the evaluation are continuous assessment, student seminars and a report. The teaching methodologies presented above promote a deep knowledge of marine ecology and its methods (lectures and fieldwork) but also independent and critical thinking (critical analyses and debates). Therefore, as well as acquiring knowledge on current topics of marine ecology and policy, the student will also develop skills to use this knowledge in advising on sustainable use of marine resources and policy decisions.

Main Resources: