COURSE OUTLINE

# GENERAL

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| SCHOOL | HEALTH SCIENCES | | | | |
| ACADEMIC UNIT | DEPARTMENT OF BIOLOGICAL APPLICATIONS AND TECHNOLOGY | | | | |
| LEVEL OF STUDIES | UNDERGRADUATE COURSE | | | | |
| COURSE CODE | ΒΕΕ821 | SEMESTER | | 8th | |
| COURSE TITLE | CONSERVATION BIOLOGY IN PRACTICE | | | | |
| INDEPENDENT TEACHING ACTIVITIES | | | WEEKLY TEACHING HOURS | | CREDITS |
|  | | | 4 | | 4 |
| COURSE TYPE | SPECIFIC BACKGROUND | | | | |
| PREREQUISITE COURSES: | BIODIVERISTY & CLIMATE CHANGE [ΒΕΥ505] | | | | |
| LANGUAGE OF INSTRUCTION and EXAMINATIONS: | GREEK | | | | |
| IS THE COURSE OFFERED TO ERASMUS STUDENTS | ENGLISH | | | | |
| COURSE WEBSITE (URL) |  | | | | |

# LEARNING OUTCOMES

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| Learning outcomes |
| The course is offered to students under the scope to develop their special knowledge base on solving major environmental problems in the field of biodiversity conservation, climate change mitigation, and sustainability promotion. It presents the scientific arsenal of the tools, technologies and methods available to address the ecological crisis on a case-by-case basis, while presenting the modern institutional and political environmental context at global, European and national level.  The student is expected to:   * Know the main categories of threats and anthropogenic pressures on biodiversity and their impacts using concrete examples. * Know the tools, technologies and methods available to conserve species and ecosystems on a case-by-case basis. * Be familiar with the international, European and national policy and related institutional framework on biodiversity conservation and sustainable development. * Develop critical thinking, evaluate, organize, and synthesize existing scientific information. * Be able to produce scientifically evidence-based texts and suggest solutions for specific environmental problems. * Be able to communicate and support his / her position to the public using ICT, based on scientific arguments. * Be able to work in a team. |
| General Competences |
| * Search, analysis and synthesis of data and information, with the use of the necessary technology * Working independently * Teamwork * Applying knowledge in practice * Working in an interdisciplinary environment * Respect for the natural environment * Decision-making * Production of free, creative and inductive thinking * Communicative skills for public outreach and/ or debate skills |

# SYLLABUS

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| A. THEORY  **Conservation biology**: Historical background and principles of conservation biology, a new interdisciplinary field that provides tools and proposes scientific solutions to the ecological crisis.  **Anthropogenic loss of biodiversity and ecosystem services:** The phenomenon of extinction. Biodiversity loss and ecosystem services, prioritization of threats: loss, degradation and fragmentation of habitats, land use change, species overexploitation, alien and invasive species, climate change, pollution and waste.  **Preserving biodiversity: a review**. Protected areas: Design and selection of protected areas. Management: the biological, social and economic dimension. Species Conservation and Management: IUCN Red Lists and levels of species vulnerability, species action plans, in situ and ex situ conservation, alien species management, game management. Habitat and species restoration: Ecological restoration, habitat reconnection, species re-introduction.  **The Nature 2000 network**: The network in Europe and Greece, national and European institutional framework, protected area management bodies, network management and governance in practice, the role of NGOs and society.  **Conservation biology and policy**. The importance of linking science with policy. European policy and European directives on biodiversity conservation and climate change mitigation. European biodiversity strategy and action plan. National Biodiversity Strategy and Action Plan. Sources of funding the implementation of the above policies.  **Sustainable Development**: Global Aichi Targets for biodiversity conservation, United Nations Sustainable Development Goals. The national effort.  The above topics will not be presented through normal lecturing, but using alternative interactive teaching, integrating them in case studies of conservation and management, solving environmental problems through science. The selected conservation cases may differ from year to year, following cutting-edge research and international trends, with emphasis on current developments and challenges in Greece.  B. Tutorial  Tutorial content will be dynamic, following theory. It will include presentations and open discussions by both students and invited speakers.  Indicative case studies (Theory and Tutorial):   * Conservation management of protected areas: The case of Pamvotis lake ecosystem: anthropogenic interventions, solutions, and prospects. * The European Green Deal and renewable energy sources (RES). The frame of minimizing environmental impacts of RES through the international and Greek experience. * Roadless areas as a measure of environmental policy in the context of global Sustainable Development Goals (SDGs). * Special Ecological Assessment Study: The case of the endemic and critically endangered grasshopper species of Epirus Chorthippus lacustris. * Action plans for endangered species: Balkan chamois (R. rupicapra balcanica), apollo butterfly Parnassius apollo. * Egyptian vulture (N. percnopterus) conservation in the Balkans: situation, threats, conservation measures, prospects (LIFE program). * Brown bear conservation (*U. arctos*) in Greece: situation, threats, conservation measures, prospects (LIFE programs). * Greece's LIFE IP 4Natura program: a coordinated national effort to conserve species, habitats and ecosystem services in the Nature 2000 network. * Caves of Greece: an unknown world of rich endemic fauna. * Citizen science: activating society for the benefit of science and the environment. * Research proposal writing: presentation of structure and content of research proposals in the field of biodiversity conservation and ecology * Paper writing: presentation of structure, content and guidelines for the development of writing skills for international publications.   **C. EDUCATIONAL EXCURSION**  One or more educational excursions to National Parks of Greece are planned for experiential nature observation, assessment of environmental problems, suggesting solutions, including meetings with experts, staff of Management Agencies of the National Parks, representatives of production agencies and non-governmental organizations. |

# TEACHING and LEARNING METHODS - EVALUATION

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| DELIVERY*.* | Face-to-face. Use of e-course.  Alternative teaching: Part of the content to be presented by the students, under the tutor’s guidance. |
| USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY | Use of ICT in **teaching**: power point with integrated audiovisual material and international links (Theory/Tutorials). Using e-course platform for uploading scientific papers and online collection of answers and projects from students.  Use if ICT communication with students   * Communication through e-course platform * Teaching: uploading lectures (pdfs), aim of the lecture, questions, and links/ references for further reading in each lecture * Case studies: uploading of scientific papers, environmental studies, action plans and relevant scientific documentation triggering open discussion in class. * Project: uploading aim of the project, guidelines, references, and international links |
| TEACHING METHODS | |  |  | | --- | --- | | Activity | Semester workload | | Lectures | 20 | | Tutorial | 20 | | Educational excursion | 10 | | Independent study | 10 | | Project | 50 | | Total | 110 | |
| STUDENT PERFORMANCE EVALUATION | **Informing student:** Informing on the process and criteria used in student evaluation in the first lecture of the course.  **Evaluation language:** Greek. English (Erasmus)  **Projects: 100%**  Evaluation criteria  A. Written report - 60%   * Covering the main issue of the subject within word limit - 25% * Writing [ structure- wording – concise text) -15% * Number and relevance of bibliographic sources used– 10% * Delivering date (before deadline)– 5% * Adequate integration of citations -5%   B. Public presentation – 40%   * Covering the main issue of the subject within time limit 20% * Structure and aesthetic quality of the presentation– 10% * Knowledge and communication skills of the presenter– 10%   **Course and tutor evaluation:** Course evaluation (lectures, lab, project, professor) via online questionnaire. |

# ATTACHED BIBLIOGRAPHY

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| 1. Primack, R.M (2012). A primer of conservation biology. Sunderland, Mass. : Sinauer Associates.363 pages. ISBN: 9780878936236 0878936238. 2. Miller, T.G., Spoolman S.E. (2019). «Environmental Sience”. 544 pages.  Cengage Learning & National Geographic Learning ISBN-10: 9781337569613 3. Blondel, J., Aronson, J., Ferris, R. (2005). Biology and wildlife of the Mediterranean Region. Oxford University Press, Oxford. 326 pages. ISBN: 0198500351 9780198500353 4. Gaston, K.J., Spicer, J.I. (2012). «Biodiversity: an introduction». Malden, Mass. Blackwell Publ ISBN: 9781405118576 1405118571 |