Doc. 300.1.2

Higher Education Institution's Response

Date: Date.

- **Higher Education Institution:** University of Cyprus
- **Town:** Nicosia
- **Programme of study**
  Name (Duration, ECTS, Cycle)

  In Greek:

  ΔΙΔΑΚΤΟΡΙΚΟ ΣΤΗ ΒΙΟΠΟΙΚΙΛΟΤΗΤΑ ΚΑΙ ΟΙΚΟΛΟΓΙΑ (3-8 έτη, 240 ECTS, PhD)

  In English:

  PhD IN BIODIVERSITY AND ECOLOGY (3-8 years, 240 ECTS, Doctor of Philosophy degree)
- **Language(s) of instruction:** ENGLISH
- **Programme's status:** Currently Operating
- **Concentrations (if any):**

  In Greek: Concentrations
  In English: Concentrations

The present document has been prepared within the framework of the authority and competencies of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, according to the provisions of the "Quality Assurance and Accreditation of Higher Education and the Establishment and Operation of an Agency on Related Matters Laws" of 2015 to 2021 [L.136(I)/2015 – L.132(I)/2021].

A. Guidelines on content and structure of the report

- *The Higher Education Institution (HEI) based on the External Evaluation Committee's (EEC's) evaluation report (Doc.300.1.1 or 300.1.1/1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4) must justify whether actions have been taken in improving the quality of the programme of study in each assessment area. The answers' documentation should be brief and accurate and supported by the relevant documentation. Referral to annexes should be made only when necessary.*

- *In particular, under each assessment area and by using the 2nd column of each table, the HEI must respond on the following:*

    - *the areas of improvement and recommendations of the EEC*
    - *the conclusions and final remarks noted by the EEC*

- *The institution should respond to the EEC comments, in the designated area next each comment. The comments of the EEC should be copied from the EEC report **without any interference** in the content.*

- *In case of annexes, those should be attached and sent on separate document(s). Each document should be in *.pdf format and named as annex1, annex2, etc.*

1. Study programme and study programme's design and development
(ESG 1.1, 1.2, 1.7, 1.8, 1.9)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For Official Use ONLY
PhD students should be proactively encouraged to organise themselves and to form a community of mutually supportive peers.	The department has decided (on the 11/12/24) to encourage the PhD students (and support them logistically and economically) to organize an annual event or retreat ("PhD day"), where they will present their research to their peers and the department in an informal way. The organization of this event by the PhD students themselves is expected to help them bond and interact more with each other. We will encourage them to organize the first such event by the end of May 2025, just after the end of the semester.	Choose level of compliance:
The PhD programme needs to become more attractive, in particular by ensuring better employment/funding conditions and taking strong action to reduce the overall duration of the PhDs to standard European durations of 4 years.	We have implemented significant measures to reduce the overall duration of the PhD program: (a) The workload associated with coursework has been reduced from 80 to 65 ECTS. (b) The comprehensive examination will focus specifically on the student's PhD research topic, and students are encouraged to complete it early in their studies. (c) We will award 60 ECTS to students who already hold an MSc degree, allowing them to progress more quickly. Regarding funding conditions, we are constantly applying for international and national funding to support our students. We are also actively advocating for the re-establishment of regular PhD studentships by the University administration. Additionally, we are engaging with the government to increase funding opportunities, particularly those aimed at supporting basic research.	Choose level of compliance:

	Nevertheless, it is also important to note that while the University does not offer a formal part-time PhD track, some students take advantage of the 8-year maximum allowed PhD duration (as per University rules) to effectively attend part-time due to employment or family obligations. This factor contributes to the higher-than-average duration of the programme. For further information please refer to Annex 1.	
Reduce the additional workload of courses and/or spread them throughout the PhD. Focus the qualifying exam more on the students own PhD project so that students are able to start with PhD work immediately and are encouraged to finish within roughly 4 years	We have reduced the workload that corresponds to courses from 80 to 65 ECTS (12.5 ECTS to compulsory courses and 52.5 ECTS to elective courses). The ECTS that were removed from the courses have been added to the Comprehensive Examination (which increased from 10 to 15 ECTS) and to the Postgraduate Seminars (which increased from 0 to 2.5 ECTS per semester). Please see Annex I for the revised distribution of the ECTS workload. The elective course list, apart from taught courses, also includes self-study modules that can be focused on the PhD topic (Independent study I & II, 20 ECTS in total) as well as the possibility to cover ECTS through the attendance of workshops and conferences (see more details below). As for the qualifying exam (=Comprehensive Examination), the students have the option and will be encouraged to focus their proposal on their PhD project topic, so that they dedicate their efforts towards their PhD research since the beginning of their studies. They will also be strongly encouraged to take the comprehensive examination early on, i.e. in the first semester of their studies if they hold an MSc degree or in the third semester if they do not.	Choose level of compliance:

Consider how to structure the PhD thesis to ensure that most research work undertaken by PhD students can be counted towards the thesis. Current situation is not sustainable.	We appreciate the EEC's concerns regarding the structure of the PhD thesis and its alignment with the research work undertaken by students. To address this, we will review the current thesis structure to ensure that most of the research conducted by PhD students contributes to their thesis. We will certainly encourage current and future PhD students to incorporate all first-author research conducted during their PhD studies into their thesis.	Choose level of compliance:
Assess innovative ways on how credits can be assigned to participation in conferences, workshops, training courses and outreach activities outside the formal curriculum. This would ensure that credits are more relevant to the PhD work. Similarly, compulsory seminar attendance should be rewarded with credits, e.g., by asking students to prepare a report on one of the talks and/or participate in seminars by asking questions.	We have implemented the proposed changes by: (a) Assigning 2.5 ECTS to each semester of compulsory seminars (10 ECTS in total). To acquire the credits, the PhD students will prepare a report on one of the seminars, which will be assessed by their PhD supervisor. (b) Introducing a new course code entitled “Conferences and Workshops” with 2.5 ECTS, which will be selected by PhD students who participate actively in conferences or workshops. The assessment will be based on their presentation file or poster. For students attending training workshops, the assessment will be based on a presentation of the learned skills. (c) Allowing extra ECTS (up to 2) to be gained through additional seminar/conference attendance following the University rules (e.g., 10 seminars = 1 ECTS). These may include training seminars offered by the UCY Center of Teaching and Learning, the yearly event of the Graduate School on interdisciplinary science, etc. (d) PhD students may also acquire additional ECTS by attending BIP (blended intensive programmes) offered by the Erasmus/YUFE network. Importantly, we will ensure that the PhD students are aware of these	Choose level of compliance:

	opportunities by informing them through the induction seminar at the beginning of their studies. For further information please refer to Annex 1 & Annex 2	
Consider how to expand the training available in more specialised areas, e.g., statistics, by ensuring that all students are able to attend international, or distance learning courses	The new course "Biological data analysis" will be offered to all PhD students (as compulsory to non-MSc holders and as elective to MSc-holders) and will aim to equip them with statistical skills for biological data analysis using the R programming language. Further programming skills (python) will be offered to those PhD students that require more advanced programming for their research project through the elective course "Computational and Systems Biology". Both courses will be offered to all postgraduate students of the department. Additionally, the PhD students will be encouraged to attend relevant online courses on data analysis, statistics and programming offered by other Universities through the BioYUFE virtual campus, as well as more specialized workshops related to their research topic. For further information please refer to Annex 1 & Annex 2	Choose level of compliance:

2. Student – centred learning, teaching and assessment
(ESG 1.3)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For Official Use ONLY
The study program for students that already have a master degree should be very limited and focussed on skills and knowledge applicable to their research.	The department has decided (on the 11/12/2024) to award 60 ECTS of courseload to all PhD candidates holding a relevant MSc degree. Therefore, those PhD students will be required to take only 5 ECTS from courses. These 5 ECTS can be obtained by taking the "Soft Skills" course (2.5 ECTS) and presenting their research at a conference (which will be assigned 2.5 ECTS through the new course code "Conferences and Workshops", see above). Alternatively, they can opt to take any other compulsory or elective course offered to PhD students who do not hold an MSc degree, if relevant to their research. Additionally, the PhD students holding an MSc degree, will be encouraged to take the comprehensive examination in the first semester of their studies, which will help them focus on their PhD topic from the beginning and minimize any unnecessary delays.	Choose level of compliance:
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3. Teaching staff
(ESG 1.5)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For Official Use ONLY
Similar to the master programme, recruitment of additional, internationally recognised ecologists will expand the possibilities for PhD projects and will encourage more students to come	We are currently expecting the hiring of a new staff member in the field of "plant ecology and climate change" to start within 2025. The new faculty member is expected to expand the possibilities for PhD projects and encourage more students to join the programme. Furthermore, the department has planned to revise its strategic plan soon (May 2025) and this will also involve discussions on how to prioritise the allocations of new positions of the department.	Choose level of compliance:
More organisation of departmental level activities for PhD students would allow PhD students (and postdocs) to help each other, which would be a significant advantage considering the generally small size of the individual groups. Activities such as writing or coding and analysis workshops could be arranged to allow expertise to be shared between groups.	We acknowledge the importance of departmental-level activities in fostering collaboration and mutual support among PhD students and postdocs, especially given the small size of individual research groups. The department will encourage interdisciplinary group activities, such as journal clubs or coding workshops, to promote knowledge exchange and strengthen the sense of community within the department. We are committed to providing the necessary logistical and organizational support to ensure the success of these initiatives.	Choose level of compliance:
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4. Student admission, progression, recognition and certification
(ESG 1.4)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For Official Use ONLY
Many PhD students are accepted with no funding available. While this may be acceptable for some, particularly local students, supervisors should be encouraged to recruit international students only when they have funding available, to ensure that they can complete their PhD in 4 years.	We acknowledge that securing funding is a critical factor for ensuring timely completion of the PhD within the standard 4-year period. The department will encourage PhD supervisors to recruit international students only when funding is secured. For local students, we understand that funding might be less of an issue, but we still stress the importance of proper financial support to ensure all students can complete their studies on time. Nevertheless, it is important to note that most national funding schemes currently provide support for only two years, which does not guarantee continuous funding for the full 4-year duration. To address this limitation, the department is committed to advocating for longer funding periods by engaging with government authorities through official correspondence and public statements, in an effort to secure more stable financial support for all PhD students.	Choose level of compliance:
The organisation of a yearly PhD day, with poster presentations or short talks about preliminary results by multiple PhD students, is suggested to foster a sense of community and to prepare PhDs for international meetings.	As explained above, the department has decided (on the 11/12/24) to encourage the PhD students (and support them logistically and financially) to organize an annual event or retreat (“PhD day”), where they will present their research in an informal way. The organization of this event by the PhD students themselves is expected to allow information exchange, foster a sense of community, and prepare the students for presentations in international meetings. We will encourage them to organize the first such event by the end of May	Choose level of compliance:

	2025, just after the end of the semester.	
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5. Learning resources and student support
(ESG 1.6)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For Official Use ONLY
One major concern is the duration of the PhD work that is much longer than the usual (usual duration should be about 4 years for regular PhD students, 6 years for PhD students with teaching duties or work duties on the side).	As explained above, we have taken strong action to reduce the overall duration of the PhD program: (a) The workload associated with coursework has been reduced from 80 to 65 ECTS. (b) The comprehensive examination will focus specifically on the student's PhD research topic, and students are encouraged to complete it early in their studies. (c) We will award 60 ECTS to students who already hold an MSc degree, allowing them to progress more quickly. (d) We will review the current thesis structure to ensure that most of the research conducted by PhD students contributes to their thesis.	Choose level of compliance:
Students expressed concerns about lack of space and equipment, this should be largely solved with the new building	Indeed, the new building will provide the necessary lab space and equipment, as well as office spaces for PhD students, so this issue will be solved within 2025.	Choose level of compliance:
Students are not always well informed about the services that are available to them.	We currently offer an induction seminar at the beginning of the academic year to present the programme structure and familiarize the students with the university. We will also organize additional informational sessions at the beginning of each academic year to remind the students that one faculty member acts as their academic advisor/consultant, and to highlight the services and support systems in place, including academic resources, mental health services, and career development opportunities. Furthermore, the department will provide clearer, more accessible information through its website and through regular email updates.	Choose level of compliance:

	We will also encourage PhD supervisors to regularly remind students of the available services during meetings, ensuring that all students, both local and international, have the necessary information to make the most of the available resources.	
PhD students would like more interaction between them	We will increase our efforts to organize departmental activities that promote interaction and collaboration among PhD students. As explained above, the department will support them logistically and economically to organise a yearly "PhD day", as well as other interdisciplinary group activities, such as journal clubs or coding workshops. Furthermore, we expect that our moving to the new building in 2025 will bring the students closer, since the departmental facilities (office space, equipment) used by researchers will be available in one building.	Choose level of compliance:
PhD students should be stimulated to participate in the department council, particularly more senior PhD students.	We fully agree that encouraging greater participation, particularly from senior PhD students, is important for fostering a sense of ownership and contributing to the overall development of the programme. We will proactively encourage PhD students to elect their representatives who will participate in the department council. Additionally, we plan to organize regular meetings between the postgraduate studies committee and the PhD students to encourage feedback and active engagement with the decision-making processes in the department.	Choose level of compliance:
Due to tuition fees, PhD students have to work in order to cover their expenses (late graduation)	The impact of tuition fees on PhD students is a major concern of our department, particularly in relation to their need to work part-time to cover living expenses. We agree that this additional financial burden may contribute to delayed	Choose level of compliance:

	graduation for our PhD students. To address this issue, our department has repeatedly requested the University to consider waiving tuition fees for PhD students, especially those who face financial hardship. We are committed to continuing these discussions with the University to advocate for greater financial support for our students. In the meantime, we encourage PhD students to use the available teaching assistantships or any research assistantships funded by grants, which not only offer financial support but also contribute to their professional development.	
Students should be better informed about the possibilities of taking a course outside the department program e.g. from the chemistry or computer sciences program if it benefits their research.	We recognize the importance of interdisciplinary learning, and we agree that providing PhD students with greater access to relevant courses in other fields, such as chemistry or computer science, can significantly enhance their skills. We will ensure that the PhD students are informed about those possibilities during the informational sessions that will be organised at the beginning of each academic year. We will also encourage PhD supervisors to discuss these opportunities with students during their regular meetings, ensuring that they are aware of how such courses can complement their research.	Choose level of compliance:
ECTS should be given for participation in external courses and workshops if relevant for their research. A presentation of the learned skills could serve as an examination and this will increase the visibility of available skills and knowledge in the department.	We have Introduced a new course code entitled “Conferences and Workshops” with 2.5 ECTS, which will be selected by PhD students who participate actively in conferences or workshops through poster or oral presentations. The assessment will be based on their presentation file or poster or through a presentation of the learned skills as suggested.	Choose level of compliance:
The removal of studentships has made it more challenging to fund	Our department has consistently advocated for the reinstatement of	Choose level of compliance:

PhDs, reinstating these by the government would certainly make Cyprus more internationally competitive in attracting PhD students.	the Evagoras scholarships, as they are crucial for both the recruitment of high-quality students and the ability of PhD candidates to focus fully on their research without the added burden of seeking external financial support. We will continue exercising pressure to the University administration and to the government through official correspondence and public statements, urging them to reinstate these studentships.	

6. Additional for doctoral programmes

(ALL ESG)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For Official Use ONLY
The duration of the PhD is not clearly defined or discussed in advance, with many PhDs lasting much longer than the students would like. Defining clear goals and a timeplan to complete the PhD within four years would assist with this.	As explained above, we have implemented specific measures to reduce the duration of the PhD. The reduced coursework and the more focused comprehensive examination will allow students to complete their studies earlier. With the updated time plan (see Annex I), a 4-year duration is feasible, even for PhD students who do not hold an MSc degree.	Choose level of compliance:
Remaining flexible in terms of what topics can be included in the PhD, i.e., how broad the thesis can be, and ensuring that PhD students only undertake major research activities that contribute to their PhD (i.e., if they work on an additional project, this should be included as a PhD chapter), would assist students in finishing on time.	We agree that allowing for flexibility in the scope of research topics can be beneficial, but it is also important that students maintain a clear focus on their primary PhD objectives to ensure timely completion. As explained above, we will review the current thesis structure to ensure that most of the research conducted by PhD students contributes directly to their thesis. We will also encourage supervisors to work closely with PhD students to define the scope of their research early on, ensuring that any additional projects undertaken are aligned with the PhD thesis. We will certainly encourage both current and future PhD students to incorporate all first-author research conducted during their PhD studies into their thesis, ensuring that such work is fully integrated and contributes to the overall narrative of their research.	Choose level of compliance:
Involving PhD students in the supervision of master and bachelor projects would expand their skills, whilst also allowing them to include additional data in their PhD.	We do involve PhD students in research supervision and we will continue encouraging them to get actively involved in the supervision of master and bachelor projects relevant to their PhD research.	Choose level of compliance:
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7. Eligibility (Joint programme)

(ALL ESG)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For Official Use ONLY
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B. Conclusions and final remarks

Conclusions and final remarks **by EEC**	Actions Taken by the Institution	For Official Use ONLY
The PhD programme benefits from a strong advisory structure, yet the unclear duration and scope of PhD studies present challenges. In its current form it does not seem internationally competitive and accreditation should be contingent on the development of procedures to ensure most PhDs are completed in a timely manner. This could include defining a clear timeline for completion of PhDs and allowing flexibility in research topics and possibilities for gaining ECTS.	We are grateful for the ECC's comments and suggestions, which have helped us to improve greatly our PhD programme. As explained above, we have implemented specific measures to reduce the duration of the PhD programme and define a clear timeline for completion of the PhD in a timely manner. We have also introduced possibilities for gaining ECTS from conference, workshop and seminar attendance. Additionally, we will revise the structure of the PhD thesis to allow greater flexibility in research topics, as suggested by the EEC.	Choose level of compliance:
Additionally, fostering a sense of community among PhD students through organized departmental activities and encouraging their involvement in teaching and supervision will enhance their academic experience.	Thank you for your valuable suggestions that can help fostering a sense of community among our PhD students. As explained above, the department will encourage and support the PhD students both logistically and economically to organise a yearly event ("PhD day"), as well as other informal activities throughout the year, with the aim to enhance the interactions among them. We will also encourage their involvement in teaching and supervision of undergraduate students, as well as their participation in the departmental council. By strengthening both the academic and social aspects of the PhD experience, we hope to create a more cohesive and supportive community for our students.	Choose level of compliance:
Addressing funding challenges and reinstating studentships would significantly bolster the attractiveness of the programme to international candidates.	We assure the EEC that all department faculty members strive to acquire funding for their research and to support their students by applying to national and international funding organizations. We will certainly continue and	Choose level of compliance:

ANNEX I

STRUCTURE OF THE PROGRAMME OF STUDY - 'Ph.D. in Biodiversity and Ecology'

PROGRAMME REQUIREMENTS	**OPTION I: PhD students who do not hold a relevant MSc**	**OPTION II: PhD students who hold a relevant MSc**
Compulsory courses	12.5	0
Restricted elective courses	52.5	5
Postgraduate Seminars I-IV	10	10
Comprehensive Examination	15	15
Research Proposal	0	0
Research Stages I-IV	120	120
Annual Progress Reports	0	0
PhD Thesis Write-up Stage	30	30
Transferred credits from MSc	NA	60
Total ECTS	**240**	**240**

LIST OF COMPULSORY AND ELECTIVE COURSES - 'PhD in Biodiversity and Ecology'

Compulsory courses/modules

			ECTS
1.	BIO 615	Soft Skills*	2.5
2.	BIO 616	Biological Data Analysis*	10
3.	BIO XXX	Postgraduate Seminar Series I	2.5
4.	BIO XXX	Postgraduate Seminar Series II	2.5
5.	BIO XXX	Postgraduate Seminar Series III	2.5
6.	BIO XXX	Postgraduate Seminar Series IV	2.5
7.	BIO 810	Comprehensive Examination of Ph.D. Students	15
8.	BIO 820	Ph.D. Research Stage I	30
9.	BIO 811	Ph.D. Research Proposal	0
10.	BIO 821	Ph.D. Research Stage II	30
11.	BIO 822	Ph.D. Research Stage III	30

12.	BIO 812	Annual Progress Report I	0
13.	BIO 823	Ph.D. Research Stage IV	30
14.	BIO 835	Ph.D. Thesis Write-up Stage I	30

* The courses BIO615 and BIO616 are offered as compulsory to PhD students who do not hold a relevant MSc degree (Option I) and as restricted elective to PhD students who hold a relevant MSc degree (Option II).

Restricted Elective courses

			ECTS
1.	BIO XXX	Island Biogeography and Conservation	7.5
2.	BIO XXX	Marine Ecology and Conservation	7.5
3.	BIO XXX	Alien species and Conservation	7.5
4.	BIO XXX	Conservation Genetics	7.5
5.	BIO XXX	Behavioural Ecology and Conservation	7.5
6.	BIO 868	Field Biology	7.5
7.	BIO XXX	Conservation policy and management	7.5
8.	BIO 865	Geographical Information Systems and Remote Sensing in Ecology	7.5
9.	BIO XXX	Global Change Biology	7.5
10.	BIO XXX	Conservation in practice	2.5
11.	BIO 780	Independent Study I	10
12.	BIO 790	Independent Study II	10
13.	BIO 650	Special topics in Bioinformatics	7.5
14.	BIO 760	Topics from Genomics to Proteomics	7.5
15.	BIO 621	Computational and Systems Biology	7.5
16.	BIO XXX	Conferences and workshops	2.5

INDICATIVE DISTRIBUTION OF COURSES PER SEMESTER (for PhD students who do not hold an M.Sc. degree – Option I):

Semester 1:

Course	**ECTS**
Biological Data Analysis	10
Soft Skills	2.5
Postgraduate Seminar Series I	2.5
Independent Study I	10
Elective course	7.5
Total ECTS	**32.5**

Semester 2:

Course	**ECTS**
Independent Study II	10
Postgraduate Seminar Series II	2.5
Elective course	7.5
Elective course	7.5
Total ECTS	**27.5**

Semester 3:

Course	**ECTS**
Comprehensive Examination	15
Postgraduate Seminar Series III	2.5
Elective course	7.5
Elective course	2.5
Total ECTS	**27.5**

Semester 4:

Course	**ECTS**
PhD Research Stage I	30
Postgraduate Seminar Series IV	2.5
Total ECTS	**32.5**

Semester 5:

Course	ECTS
PhD Research Stage II	30
Research Proposal	0
Total ECTS	**30**

Semester 6:

Course	ECTS
PhD Research Stage III	30
Total ECTS	**30**

Semester 7:

Course	ECTS
PhD Research Stage IV	30
Total ECTS	**30**

Semester 8:

Course	ECTS
PhD Thesis Write-Up Stage	30
Total ECTS	**30**

ANNEX II - ‘Ph.D. in Biodiversity & Ecology’ - COURSE DESCRIPTIONS

Course title	**Biological Data Analysis**				
Course code	**BIO 616**				
Course type	Compulsory for Option I (non-MSc holders), elective for Option II (MSc holders)				
Level	Postgraduate				
Year / Semester	Fall Semester				
Instructor's name	Faculty BIO				
ECTS	10	**Lectures / week**	1 (2hr lecture)	**Laboratories / week**	1 (2 hr workshop)
Course purpose and objectives	To equip students with the skills necessary to analyze biological data effectively and introduce them to the R programming language and related tools.				
Learning outcomes	- to formulate hypotheses based on biological questions. - to learn how to collect and organize data. - to perform exploratory data analysis. - to conduct standard statistical operations. - to interpret analytical results. - to understand concepts in unsupervised/unsupervised machine learning - to create publication-quality visualizations. - to report results accurately and clearly. - to evaluate experimental design and data analysis in published works. - to develop programs in R and utilize relevant packages.				
Prerequisites	NA		**Required**	NA	
Course content	Lectures cover the following material: Overview of Important Probability Distributions/Data Types and Descriptive Statistics/Scientific Method and Experimental Design/Hypothesis Testing and Statistical Significance/Sampling Methods and Randomization Techniques/Advanced Statistical Methods for Biological Data/Non-Parametric and Categorical Data Analysis/Advanced Data Visualization Techniques/Time Series Analysis in Biology/Multivariate Analysis Techniques/Reproducible Research Practices in Data Analysis/Ethical Considerations in Biological Data Analysis/Review and Advanced Topics Practicals include the following topics: Introduction to the R Computing Environment/Basic R Programming/R Markdown Overview/Collecting and Organizing Data/Importing and Exporting Data/Descriptive Statistics/Graphics and Data Visualization/Example Applications of Machine Learning Methods/Cluster Analysis/The BioConductor Package/NGS, RNA-seq Analysis Basics/Functional Enrichment Analysis/Advanced R Programming/Handling Big Data in R/Interactive Applications with R Shiny/Bioinformatics Tools and Workflows				
Teaching methodology	Lectures and practical workshops				

Bibliography	Suggested reading The R Book (3rd Edition). Elinor Jones, Simon Harden, Michael J. Crawley, 2022. ISBN: 978-1-119-63432-4 Biostatistics: A Foundation for Analysis in the Health Sciences, (11th Edition). Chad L. Cross, Wayne W. Daniel, 2018. ISBN: 978-1-119-49657-1 Fundamentals of Data Visualization. Claus O. Wilke, 2019. ISBN: 9781492031086 A practical handbook and online resources. Research papers - variable
Assessment	Assignments: 30% Practical exercises: 30% Final project: 40% The course is graded arithmetically 0-10.
Language	English

Course title	**Soft Skills**				
Course code	**BIO 615**				
Course type	Compulsory for Option I (non-MSc holders), elective for Option II (MSc holders)				
Level	Postgraduate				
Year / Semester	Fall Semester				
Instructor's name	Faculty BIO/Special Teaching Staff BIO				
ECTS	2.5	**Lectures / week**	1 (2hr lecture)	**Laboratories / week**	
Course purpose and objectives	To provide the students transferable soft skills necessary for their studies, their research thesis and the job market.				
Learning outcomes	- to acquire Health & Safety laboratory skills - to identify and comprehend traditional and current issues in bioethics - to search and manage bibliographic sources - to communicate effectively (email, face-to-face, CV) - to summarize primary literature (reading comprehension, data interpretation) - to prepare a presentation/poster (science communication, collaboration) - to write a thesis/research proposal (time management, ethics)				
Prerequisites		**Required**			

Course content	The course offers training on different transferable soft skills that will allow the students to smoothly undertake their researcher role. Students will acquire Health and Safety training necessary for work in laboratory environments. In addition, they will acquire skills necessary for their studies, such as bibliography search and citation management, effective basic communication (written, oral), scientific communication (how to prepare CV, oral or poster presentations, thesis and proposal writing) and science ethics (research originality and plagiarism). They will also learn to manage their time and collaborate with peers. For the bioethics component, guest speakers from the Cyprus National Bioethics Committee will deliver relevant lectures.
Teaching methodology	Lectures and practical tutorials
Bibliography	Online information, papers
Assessment	Test, paper summaries, presentation (50%) Final exam (poster or proposal) (50%) The course is graded arithmetically 0-10.
Language	English

Course Title	**Postgraduate Seminar Series I, II, III, IV**				
Course Code	**BIO XXX, BIO XXX, BIO XXX, BIO XXX**				
Course Type	Compulsory				
Level	Postgraduate				
Year / Semester	1st & 2nd year/ Winter and Spring semester				
Teacher's Name	Local or International Speakers invited by Departmental Faculty Members Course Coordinator and Speaker: Niki Chartosia & Anna Charalambous, Special Teaching Staff				
ECTS	2.5	**Lectures / week**	1 hour / week	**Laboratories / week**	0
Course Purpose and Objectives	The students are expected to attend a series of lectures, at which invited speakers from Cyprus or abroad present research work or related topics in the field of Biological Sciences.				
Learning Outcomes	These weekly, seminars are designed to give our graduate students the opportunity to familiarize themselves with the research work of distinguished scientists in the field of Biological Sciences.				
Prerequisites	N/A		**Required**	N/A	

Course Content	Varies, depending on the speakers' fields for expertise, which vary each semester
Teaching Methodology	The seminars are given in English and usually last 45 minutes with an additional 15 minutes allocated to questions and scientific discussion.
Bibliography	-
Assessment	Pass/Fail based on student attendance, which is mandatory for all seminar sessions. For PhD students it will also be required to prepare a report on one of the seminars per semester, which will be assessed by their PhD supervisor.
Language	English

Course Title	**Comprehensive Examination of Ph.D. Students**				
Course Code	**BIO 810**				
Course Type	Compulsory				
Level	Postgraduate				
Year / Semester	1st year/ Spring and winter semester				
Teacher's Name	Any Departmental Faculty Member who is also the student's Research Supervisor				
ECTS	15	**Lectures / week**	-	**Laboratories / week**	-
Course Purpose and Objectives	Assessment of Ph.D. students' ability to design and present a scientific project in a concise manner and in realistic terms within the time-frame required for a Ph.D. study.				
Learning Outcomes	The student learns how to design a realistic scientific project, to set-up and organize research within a reasonable time-frame, and to handle literature in an informative way that sets the background for novel research.				
Prerequisites	Registration approval from Research Supervisor		**Required**	N/A	
Course Content	The processes of conducting and evaluating the Comprehensive Examination follow the internal regulations of the Department which are posted on the departmental website, as well as the Postgraduate Studies Regulations of the University of Cyprus. Research Supervisor approval via email is required prior to course registration. Additional information regarding course registration is provided in the Course Contract. Current Students: Please find below important information about this course o Course Contract				
Teaching Methodology	N/A				
Bibliography	Literature on the selected subject.				

Assessment	Evaluation of written project and presentation by a three-member committee assigned by the Department.
Language	English

Course Title	**Ph.D. Research Proposal**				
Course Code	**BIO 811**				
Course Type	Compulsory				
Level	Postgraduate				
Year / Semester	1st year/ Spring semester				
Teacher's Name	Any Departmental Faculty Member who is also the student's Thesis Supervisor				
ECTS	0	**Lectures / week**	-	**Laboratories / week**	-
Course Purpose and Objectives	Ph.D. candidates are required to complete 120 ECTS in Research Stage courses which, is equivalent to 4 semesters. Therefore, BIO 820-823 Research Stage I-IV are compulsory for graduation. BIO 824-828 Research Stage I-IV are available for students who do not complete their thesis research in two academic years and must continue their research in one or more additional semesters.				
Learning Outcomes	The student learns how to design a realistic scientific project, to set-up and organize research within a reasonable time-frame, and to handle literature in an informative way that sets the background for novel research.				
Prerequisites	-		**Required**	N/A	
Course Content	-				
Teaching Methodology	The teaching method and allocated time is determined by the supervisor of each student depending on the type and subject of the thesis project.				
Bibliography	-				
Assessment	-				
Language	English				

Course Title	**Ph.D. Research Stages I - IV**				
Course Code	**BIO 820-823**				
Course Type	Compulsory				
Level	Postgraduate				
Year / Semester	1st year/ Spring semester				
Teacher's Name	Any Departmental Faculty Member who is also the student's Thesis Supervisor				
ECTS	30	**Lectures / week**	-	**Laboratories / week**	-
Course Purpose and Objectives	Ph.D. candidates are required to complete 120 ECTS in Research Stage courses which, is equivalent to 4 semesters. Therefore, BIO 820-823 Research Stage I-IV are compulsory for graduation.				

	BIO 824-828 Research Stage I-IV are available for students who do not complete their thesis research in two academic years and must continue their research in one or more additional semesters.		
Learning Outcomes	The student learns how to design a realistic scientific project, to set-up and organize research within a reasonable time-frame, and to handle literature in an informative way that sets the background for novel research.		
Prerequisites	-	**Required**	N/A
Course Content	-		
Teaching Methodology	The teaching method and allocated time is determined by the supervisor of each student depending on the type and subject of the thesis project.		
Bibliography	-		
Assessment	-		
Language	English		

Course Title	**Ph.D. Thesis Write-up Stage I**				
Course Code	**BIO 835**				
Course Type	Compulsory				
Level	Postgraduate				
Year / Semester	1st year/ Spring semester				
Teacher's Name	-				
ECTS	30	**Lectures / week**	-	**Laboratories / week**	-
Course Purpose and Objectives	-				
Learning Outcomes	-				
Prerequisites	-		**Required**	N/A	
Course Content	-				
Teaching Methodology	Compulsory According to Departmental regulations, BIO 835 Ph.D. Thesis Write-up Stage I is compulsory, while the remaining thesis write-up courses are available for students who may need additional semesters to write up their thesis. Additional Information for Ph.D. Candidates who are defending their thesis this semester. NOTE: The same information applies to courses from BIO835 through BIO842 Flowchart of Procedures and Submissions Checklist o Submission of the Composition of the Examining Committee o Students Who Are Co-Supervised (Have Two Research Supervisors) Must Also Fill Out the "Special Submission Form for Students With Two Research Co-Supervisors" o Permission Form for Ph.D. Thesis Defense				

	o Presentation Announcement Template o Presentation Announcement Template – For Ph.D. candidates who will defend their thesis online o Presentation Announcement Submission Platform o Classroom Reservation Request o Thesis Submission Platform o Confirmation Form for Thesis Corrections o List of Publications o Award of a Doctoral Degree to a Candidate Doctor (English)
Bibliography	-
Assessment	-
Language	English

Course Title:	**Conservation in Practice**				
Course Code:	BIO XXX				
Course Type:	Restricted Elective				
Level of Course:	Postgraduate				
Year / Semester	Any year / Fall Semester				
Teacher's Name:	Various faculty members and guest speakers				
ECTS:	2.5	**Lectures / week:**	1	**Laboratories / week**	One or more fieldtrips
Course Purpose and Objectives:	This course aims to equip students with transferable skills that are vital for careers in biodiversity conservation. Specifically, the course will: a) Provide students with a deep understanding of the practical application of conservation theories. b) Facilitate engagement with a diverse range of stakeholders involved in biodiversity conservation. c) Enhance students' ability to critically evaluate and apply conservation strategies in real-world contexts. d) Develop practical skills for the implementation of conservation projects, including research design and fieldwork. e) Foster the ability to synthesize information and communicate conservation issues effectively to various audiences.				
Learning Outcomes:	By the end of this course, students will be able to: • Demonstrate a comprehensive understanding of how conservation theories are applied in real-world contexts to protect species, habitats, and ecosystems. • Effectively interact with and understand the roles of various stakeholders, including governmental departments, NGOs, and local communities, in biodiversity conservation. • Assess and critique conservation approaches, policies, and practices based on practical examples and case studies. • Acquire hands-on experience in the implementation of conservation projects through fieldwork and interaction with conservation professionals.				

	• Plan and propose research projects that address practical conservation challenges, incorporating critical evaluation and innovative approaches.		
Prerequisites:	N/A	**Required:**	N/A
Course Content:	Throughout the course, students will participate in debates, discussions, and interactive sessions with environmental officers from governmental departments and practitioners from local NGOs. Guest speakers will provide first-hand insights into the challenges and successes of conservation efforts on the island. The course will include field trips to key protected areas in Cyprus, such as the Akamas Peninsula or Cedar Valley, where students will engage directly with conservation officers and practitioners on-site.		
Teaching Methodology:	Lectures, group discussions, student projects and presentations.		
Bibliography:	Sutherland, W., 2022. *Transforming conservation: A practical guide to evidence and decision making* (p. 430). Open Book Publishers.		
Assessment:	Oral presentation (40%) and written assignment (60%).		
Language:	English		

Course Title:	**Island Biogeography and Conservation**				
Course Code:	BIO XXX				
Course Type:	Restricted Elective				
Level of Course:	Postgraduate				
Year / Semester	Any year / Fall Semester				
Teacher's Name:	Spyros Sfenthourakis, Professor				
ECTS:	7.5	**Lectures / week:**	3	**Laboratories / week**	N.A.
Course Purpose and Objectives:	To give student basic knowledge on the theory of island biogeography and to bring them in contact with the main biogeographic principles, concepts, and theories. To familiarize them with basic methods of biogeographic pattern analysis and give them the tools that will make them able to examine important biological questions as pertinent to insular systems. To show how island biogeography informs conservation theory and practice and how it can be used to improve conservation of species and habitats.				
Learning Outcomes:	Upon successful completion of the course, students will learn: • What kind of phenomena are examined by biogeography • What are the main categories of geographical and habitat islands • Why insular systems play an important role in ecology and conservation biology • What are the main principles of island biogeography theory • How we examine the relationship of species richness and island area • How fragmented habitats relate to islands • How to analyze data on species distribution within and among archipelagos • How is biogeography related to biodiversity conservation and the protection of the natural environment				

	• How to apply methods and concepts of island biogeography to species and habitats' conservation efforts		
Prerequisites:	N/A	**Required:**	N/A
Course Content:	Introduction. The science of biogeography. Basic principles and a brief review of the history of biogeography. Basic concepts and major processes determining spatial distribution of organisms with emphasis on islands. Island categories, island formation, and the life-time of oceanic islands. The basic principles of ecological biogeography. Theories and methods of island biogeography. The importance of the MacArthur-Wilson's island biogeography paradigm. The significance, interpretation, and many forms of the species-area curve. The General Dynamic Model for oceanic islands. Assembly rules of island communities. Species cooccurrence, community nestedness, and methods for analyzing them. Phylogeography in insular systems. Main principles and concepts of conservation biology. Island biogeography and conservation practice. The design of protected areas.		
Teaching Methodology:	Lectures and discussion of seminal scientific papers. Assignments of homework (scientific papers' analysis and presentation) to students. Presentations of assignments by students.		
Bibliography:	Whittaker R.J., Fernández-Palacios J.M. & Matthews T.J. 2023. *Island Biogeography. Geo-environmental Dynamics, Ecology, Evolution, Human Impact, and Conservation*. Oxford University Press (ISBN: 9780198868576) Lomolino M.V., Riddle B.R. & Whittaker R.J. 2016. *Biogeography. Biological diversity across space and time*. Edition 5. Sinauer Associates (ISBN: 9781605354729) Ladle R.J. & Whittaker R.J. (eds) 2010. *Conservation Biogeography*. Wiley-Blackwell (ISBN: 9781444390025)		
Assessment:	Mid-term exam: 30% Assignments: 30% Final exam: 40%		
Language:	English		

Course Title	**Marine Ecology and Conservation**
Course Code	**BIO XXX**
Course Type	Restricted Elective
Level	Postgraduate
Year / Semester	Any year/ Spring Semester
Teacher's Name	Niki Chartosia, Special Teaching Staff

ECTS	7.5	**Lectures / week**	3	**Laboratories / week**	
Course Purpose and Objectives	To introduce students to biological oceanography, to learn about structures and patterns of ocean productivity, the various processes taking place in the marine environment, the different marine systems from coral reefs to polar systems with a special focus on the Mediterranean system and especially the Levantine Basin. Further, the major disturbances of the oceans will be discussed (e.g., climate change). Finally, emphasis will be given in marine conservation and topics like measures of protection, the science of conservation and habitat restoration will be discussed.				
Learning Outcomes	Students should: i) understand biological interactions and the dynamics within marine ecosystems, ii) develop the ability to understand and identify key ecological processes and patterns that drive productivity and system functions in diverse marine environments, iii) compare different marine systems to identify unique characteristics and common threats across global marine environments and iv) identify and analyse the major anthropogenic impacts on marine ecosystems, focusing on large-scale disturbances. Finally, they should be able to explore and identify effective conservation measures, understanding the scientific and practical aspects of marine conservation including habitat restoration and the establishment of Marine Protected Areas (MPAs).				
Prerequisites	N/A		**Required**	N/A	
Course Content	• Introduction to the marine environment • History of life in the oceans • Marine productivity • Biological interactions • Global marine systems (emphasis on the Mediterranean system) • Anthropogenic impacts on marine ecosystems • Marine conservation aspects				
Teaching Methodology	Lectures, in-class exercises, oral presentations of research articles, group discussions, field trip				
Bibliography	Kaiser MJ., Attrill MJ., Jennings S., Thomas D. (Eds), 2020. *Marine Ecology: Processes, Systems, and Impacts*, pp. 608, Oxford University Press. Probert K., 2017. *Marine Conservation*, pp. 498, Cambridge University Press				
Assessment	Assignments, oral presentations, independent project, final exam.				
Language	English				

Course Title	**Alien species and Conservation**
Course Code	**BIO XXX**
Course Type	Restricted Elective
Level	Postgraduate
Year / Semester	Any year/ Fall Semester
Teacher's Name	Niki Chartosia, Special Teaching Staff

ECTS	7.5	**Lectures / week**	3	**Laboratories / week**	NA
Course Purpose and Objectives	Students will learn to evaluate one of the major threats to biodiversity loss, i.e., invasive alien species, establishing the main lines of action to manage them and conserve local biodiversity.				
Learning Outcomes	Students will get familiarised with biodiversity terms, the importance of maintaining biodiversity, biodiversity hot-spots and the changes that present an unprecedented challenge to global and local biodiversity. Emphasis will be given in alien species. Major characteristics of these species, ways of introduction and expansion will be further discussed. Examples of alien species will be given from all systems (terrestrial and marine). Further, the most effective ways to prevent their introduction and spread will be discussed using specific examples of successful stories. Finally, European and local legislation regarding alien species will be discussed.				
Prerequisites	N/A		**Required**	N/A	
Course Content	• Biodiversity (meaning, types, importance) • Biodiversity hotspots • Biodiversity loss • Introduction in Alien Species • Threats of alien species • Measures for prevention of alien species • The main European directives in the field of biodiversity conservation				
Teaching Methodology	Lectures, in-class exercises, oral presentations of research articles, group discussions				
Bibliography	Cox GW., 2004. *Alien Species and Evolution: The Evolutionary Ecology of Exotic Plants, Animals, Microbes, and Interacting Native Species*, pp. 400, Island Press. Pullaiah T., Ielmini MR. (eds), 2021. *Invasive Alien Species: Observations and Issues from Around the World*, 4 volumes, pp. 1488, Wiley-Blackwell, DOI:10.1002/9781119607045 (*special emphasis in Vol. 3: Issues and Invasions in Europe, pp. 326).				
Assessment	Assignments, oral presentations, independent project, final exam.				
Language	English				

Course Title:	**Conservation Genetics**				
Course Code:	BIO XXX				
Course Type:	Restricted Elective				
Level of Course:	Postgraduate				
Year / Semester	Any year / Fall Semester				
Teacher's Name:	Anna Papadopoulou, Associate Professor				
ECTS:	7.5	**Lectures / week:**	3	**Laboratories / week**	1
Course Purpose and Objectives:	The purpose of this course is to equip students with a comprehensive understanding of genetic principles and their application in the conservation of				

	biodiversity. By integrating theoretical knowledge with practical skills, the course aims to prepare students to address genetic challenges in wildlife conservation and management.		
Learning Outcomes:	By the end of this course, students will be able to: • Interpret genetic data to estimate variability and understand evolutionary processes affecting natural populations. • Assess the genetic impacts of small population sizes, including bottlenecks, drift, and inbreeding, and propose management strategies. • Distinguish between natural and anthropogenic hybridization and evaluate their implications for conservation. • Formulate genetic management plans for wild and captive populations. • Use taxonomic and systematic principles to define and manage species, subspecies, and conservation units. • Conduct data analysis using population genetic software to inform conservation decisions. • Explore the transition from Conservation Genetics to Genomics and apply advanced genomic techniques in conservation research.		
Prerequisites:	N/A	**Required:**	N/A
Course Content:	Molecular markers used in Conservation Genetics. Estimating genetic variability in natural populations. Basic principles of population genetics. Evolutionary impacts of mutation and migration, and their interactions with selection in large populations. Genetic conserquences of small population sizes. Genetics and Extinction: loss of genetic diversity, bottleneck, drift, inbreeding. Inbreeding depression. Outbreeding depression. Natural and anthropogenic hybridization. Genetic management of wild and captive populations. Genetic issues in introduced and invasive species. Systematics and taxonomy in wildlife conservation: definitions of species, subspecies and management units. From Conservation Genetics to Conservation Genomics. Practical applications: exercises with different datasets and population genetic software.		
Teaching Methodology:	Lectures, group discussions, student presentations, hands-on exercises and computer practicals.		
Bibliography:	*Introduction to conservation genetics*. R Franckham, GD Ballou, DA Briscoe. Cambridge UP 2010 *Population Genomics: Concepts, Approaches and Applications*. Om P. Rajora (Editor). Springer Nature Switzerland AG. (2019) First edition.		
Assessment:	Mid-term oral presentation: 20% Final oral presentation: 20% Written assignments: 20% Final exam: 40%		
Language:	English		

Course Title	**Behavioural Ecology and Conservation**				
Course Code	**BIO XXX**				
Course Type	Restricted Elective				
Level	Postgraduate				
Year / Semester	Any year/ Fall Semester				
Teacher's Name	Alexander Kirschel, Associate Professor				
ECTS	7.5	**Lectures / week**	2	**Laboratories / week**	Several field trips
Course Purpose and Objectives	To introduce students to Behavioural Ecology and how environmental change and anthropogenic disturbance affects the behaviour of animals and their conservation.				
Learning Outcomes	To learn about the behaviour of animals in a variety of habitats, how the environment and disturbances influence behaviour and how an understanding of animal behaviour can contribute to their conservation and management.				
Prerequisites	N/A		**Required**	N/A	
Course Content	An introduction to behavioural ecology focusing on how animal behaviour is shaped by the environment and climate. The course comprises some lectures and field trips to observe behaviour in the wild. Students will read and present on the latest research published in the field of conservation behaviour. Specific topics will include direct effects of disturbance on behaviour, such as flight initiation distance in vertebrates and invertebrates in rural and urban environments, and traffic noise on the timing and phonology of acoustic communication signals. Field trips will include learning some survey techniques and implementing approaches to monitor behaviour in the field in relation to environment change and anthropogenic disturbance. The course involves an independent research project on a conservation behaviour-related study.				
Teaching Methodology	Lectures, oral presentations and discussion of research articles, field trips.				
Bibliography	Recommended reading: Berger-Tal, O. and Saltz. D. 2016. Conservation Behavior. Applying Behavioral Ecology to Wildlife Conservation and Management. Cambridge: Cambridge University Press.				
Assessment	Oral presentations, class and field trip participation, independent project report.				
Language	English				

Course Title	**Field Biology**
Course Code	**BIO 868**
Course Type	Restricted Elective
Level	Postgraduate
Year / Semester	Any year/ Spring Semester
Teacher's Name	Alexander Kirschel, Associate Professor

ECTS	7.5	**Lectures / week**	Intensive course. Series of meetings over two weeks, followed by 7-10 days in the field, followed by two further lectures and a presentations day.	**Laboratories / week**	Approx. 10 hours per day for 9 days on field expedition
Course Purpose and Objectives	Students will undertake a fieldwork project, during which they will apply the methods and techniques they have learnt in their classes, in order to execute a short but complete research project. They will apply sampling techniques, either individually or in small groups; they will analyse their findings; and they will present their results to the other students during a special one-day workshop. They will also write up their findings in a report.				
Learning Outcomes	- Learn how to perform fieldwork in Ecology and Biodiversity - Learn fieldwork techniques relevant to students' research projects - Learn how to analyse data - Learn about differences between field sites in Cyprus - Learn how to prepare a scientific report				
Prerequisites	N/A		**Required**	N/A	
Course Content	Introductory Lectures Initial Presentations Field trips Statistics and report writing lectures Final presentations				
Teaching Methodology	Lectures, Presentations, Field project implementation Field trips with demonstrations Fieldwork guidance Statistics and report writing * The course involves an intensive two weeks of daily lectures and presentations followed by 7-10 days in the field. There are subsequently lectures on data analysis and report writing and then a day of presentation.				
Bibliography	--				
Assessment	Fieldwork 40% Presentations 20% Report 40%				
Language	English				

Course Title:	**Conservation Policy and Management**
Course Code:	BIO XXX
Course Type:	Restricted Elective
Level of Course:	Postgraduate
Year / Semester	Any year / Spring Semester

Teacher's Name:	Visiting Faculty or Special Scientist				
ECTS:	7.5	**Lectures / week:**	3	**Laboratories / week**	1
Course Purpose and Objectives:	This course aims to provide a comprehensive overview of the legislative, regulatory, and policy frameworks that underpin biodiversity conservation at multiple governance levels, with a focus on Cyprus and the European Union. Through a combination of lectures, case studies, and discussions, students will explore the key international agreements, EU directives, and national laws that shape conservation efforts in the region. A significant component of the course will focus on the management of protected areas, with particular emphasis on the Natura 2000 network.				
Learning Outcomes:	By the end of this course, students will be able to: • Demonstrate a thorough understanding of the key international, EU, and national policies and legislation related to biodiversity conservation. • Apply knowledge of the management and monitoring of protected areas, particularly within the Natura 2000 network, to real-world conservation challenges. • Assess the effectiveness of conservation strategies and policies in achieving biodiversity protection goals. • Integrate knowledge from various sources to propose informed conservation strategies that align with legal and policy frameworks. • Articulate conservation policy issues and management strategies clearly to a range of audiences, including policymakers and the public.				
Prerequisites:	N/A	**Required:**	N/A		
Course Content:	Introduction to Conservation Policy and Management International Agreements, Convention on Biological Diversity IUCN Red List of Threatened Species EU Conservation Directives and Strategies National Conservation Legislation in Cyprus, Implementation of EU directives in Cyprus Stakeholder roles in conservation policy Protected Areas Management Natura 2000 network Challenges in conservation management Case Studies in Conservation Policy and Management				
Teaching Methodology:	Lectures, group discussions, student projects and presentations.				
Bibliography:	Sutherland, W.J., 2008. *The conservation handbook: research, management and policy*. John Wiley & Sons. Kothari, A., Lockwood, M., Worboys, G.L. (eds) (2006) *Managing protected areas: a global guide*. Routledge				
Assessment:	Oral presentation, written assignment and final exam.				
Language:	English				

Course Title	**Geographical Information Systems and Remote Sensing in Ecology**
Course Code	**BIO 865**

Course Type	Restricted Elective				
Level	Postgraduate				
Year / Semester	Any year/ Spring Semester				
Teacher's Name	Visiting Faculty or Special Scientist				
ECTS	7.5	**Lectures / week**	3	**Laboratories / week**	1
Course Purpose and Objectives	To introduce students to Geographic Information Systems (GIS) and remote sensing, with an emphasis on their applications in ecology and conservation.				
Learning Outcomes	To learn the fundamentals of Geographic Information Systems (GIS) including how to obtain maps and other geographic data from a variety of sources, extract and process data from environmental layers, perform spatial analysis, and produce maps and figures.				
Prerequisites	N/A		**Required**	N/A	
Course Content	An introduction to Geographic Information Systems (GIS) and remote sensing, with an emphasis on their applications in ecology. The course comprises a series of lectures and in-class computer-based practical sessions using ArcGIS Pro. Students will learn the basic principles and applications of GIS, including how to obtain, manage, and analyze geographic data acquired from remote sensing and other sources, such as topographic, vegetational and climatic data, and prepare results for presentation of research findings. The course involves an independent research project applying these spatial methods to an ecological study.				
Teaching Methodology	Lectures, in-class exercises, oral presentations of research articles, group discussions.				
Bibliography	Recommended reading: - Chang, Kang-tsung. 2018. Introduction to Geographic Information Systems. 9th edition. New York: McGraw Hill. - Heywood, Ian, Sarah Cornelius, and Steve Carver. 2012. An Introduction to Geographical Information Systems. 4th edition. Harlow, England; Toronto: Pearson. - Law, Michael, and Amy Collins. 2021. Getting to Know ArcGIS Pro 2.8. 4th edition. Redlands, California: Esri Press. - Gorr, Wilpen L., and Kristen S. Kurland. 2021. GIS Tutorial for ArcGIS Pro 2.8. 4th edition. Redlands, California: Esri Press.				
Assessment	Assignments, oral presentations, independent project, final exam.				
Language	English				

Course Title:	**Global Change Biology**
Course Code:	BIO XXX
Course Type:	Restricted Elective
Level of Course:	Postgraduate
Year / Semester	Any year / Spring semester
Teacher's Name:	New faculty member to be hired soon with focus on "Plant Ecology and Climate Change"

ECTS:	7.5	**Lectures / week:**	3	**Laboratories / week**	1
Course Purpose and Objectives:	The purpose of this course is to provide students with a deep understanding of the biological responses to global environmental changes and the implications for biodiversity conservation. The course aims to prepare students to critically analyze and address the complex challenges posed by global change pressures.				
Learning Outcomes:	By the end of this course, students will be able to: • Interpret the historical and current impacts of global environmental changes on biodiversity. • Explain how organisms and ecosystems respond to global change stressors, including movement, phenotypic plasticity, adaptation, and extinction. • Describe the various ways humans are altering Earth's atmosphere, land, and water. • Understand how global change is fundamentally altering the way species interact with their environments. • Evaluate the effects of global changes on biological interactions, community structure, and ecosystem functions. • Understand, summarize, and critically evaluate primary scientific literature on global change biology, including how scientists use gradients, experiments, and models to investigate global change. • Articulate the pros and cons of potential solutions to global change issues and defend their position on potential solutions.				
Prerequisites:	N/A	**Required:**	N/A		
Course Content:	Introduction to Global Change Biology and key concepts. Brief History of Life on Earth. The Anthropocene. Historical and Contemporary Climate Change. Climate Change in the Mediterranean. Other environmental stressors: habitat loss and fragmentation, pollution etc. Species responses to global change stressors: move, adjust, adapt, die. Community-level responses to global change stressors. Ecosystem-level responses to global change stressors. Conservation in an Era of Global Change. Aligning the Interests of Biodiversity and Human Society.				
Teaching Methodology:	Lectures, group discussions, student presentations.				
Bibliography:	*Rosenblum, E.B. 2021. Global Change Biology: The Study of Life on a Rapidly Changing Planet. Oxford University Press. Oxford, UK.*				
Assessment:	Midterm exam: 30% Assignments: 30% Final exam: 40%				
Language:	English				

Course title	**Computational and Systems Biology**
Course code	**BIO 621**
Course type	Restricted elective
Level	Postgraduate: MSc and PhD

Year / Semester	Spring Semester				
Instructor's name	Faculty BIO				
ECTS	7.5	**Lectures / week**	1 (2hr lecture)	**Laboratories / week**	1 (2 hr workshop)
Course purpose and objectives	To equip students with the skills necessary to analyze biological data effectively and introduce them to the R programming language and related tools.				
Learning outcomes	Upon completion of this course students are expected to - be able to work on the command line of Linux systems - know how to install Python and its libraries - know the basic variable types and data structures supported by Python - recognize basic flow control structures, iteration and the use of functions - be able to implement programs for the analysis of biological data (e.g., gene/genome and protein sequences, protein structures, gene expression data) - apply techniques of statistical analysis of tables of numerical data - visualize data/results - develop/apply computational tools to solve simple computational biology/systems biology problems				
Prerequisites		**Required**			
Course content	Introduction to Unix,Linux: The Command Line and Filesystem/ Working with Files and Directories/Permissions and Executables/ Installing (Bioinformatics) Software/The Standard Streams/Working with text files/Patterns (Regular Expressions) Programming in Python: The Python interpreter and environment/Elementary Data Types/Collections and Looping: Lists and for/File Input and Output/Conditional Control Flow/ Python Functions/Command Line Interfacing/Dictionaries/Tuples/ Regular Expressions/Variables and Scope/Objects and Classes/ Application Programming Interfaces/Python Modules and Packages/ Algorithms and Data Structures for Computational and Systems Biology				
Teaching methodology	Lectures, laboratory exercises, group work using real data and presentation of results.				
Bibliography	Recommended Reading - Python for the Life Sciences, A Gentle Introduction to Python for Life Scientists, by Alexander Lancaster και Gordon Webster (eBook ISBN 978-1-4842-4523-1). Code repository: https://amberbiology.github.io/py4lifesci/. - A Primer for Computational Biology, by Shawn T. O'Neil (https://open.oregonstate.education/computationalbiology/). Additional Reading/Material - Python for Biologists, A programming course for complete beginners, by Martin Jones (revision 189; http://userpages.fu-berlin.de/digga/p4b.pdf). Code repository: https://pythonforbiologists.com/exercise-files.html. - Python for Everybody: Exploring Data in Python3, by Charles Severance https://www.py4e.com/book.php.				

	- Caltech Introduction to Programming for the Biological Sciences Bootcamp, by Justin Bois (http://justinbois.github.io/bootcamp/). Code repository: https://github.com/justinbois/bootcamp/. Research papers - variable
Assessment	Assignments: 15% Seminar (Group project and Presentation): 15% Final Exam: 20% Final Project: 50% The course is graded arithmetically 0-10.
Language	English

Course Code:	**BIO 760**
Course Title:	**Topics from Genomics to Proteomics**
Number of ECTS:	7.5
Level of Course:	2nd Cycle (Master's Degree)
Year of Study (if applicable):	1
Semester/Trimester when the Course Unit is Delivered:	Fall Semester
Name of Lecturer(s):	Kirmizis Antonis, Professor
Lectures/Week:	2 (1.5 hours per lecture)
Laboratories/week:	--
Tutorials/Week:	1 (1 hours per lecture)
Course Purpose and Objectives:	To introduce students to 'omics' approaches and their applications in research to address specific scientific questions within life sciences and biomedicine. In addition, students will learn how to evaluate relevant literature, present data from primary scientific papers and summarize in a perspective article the findings of a recent omics study.
Learning Outcomes:	- to define the purpose of omics approaches - to explain features of the genome, transcriptome ,epigenome and proteome - to write a concise summary describing the work of a recent research article - to describe assays and technologies used in omics-related research - to survey the literature relating to a specific topic in omics - to prepare a scientific talk and present current research findings - to moderate discussion on a topic of interest - to read and discuss current literature - to critically evaluate scientific papers - to interpret experimental results
Prerequisites:	Not Applicable
Co-requisites:	Not Applicable
Course Content:	This course will begin with a description of the Genome Projects of model organisms focusing on the lessons learned by utilizing novel technology to understand the structure, function and evolution of genetic information. This will be followed with an introduction of the post-genomic era and the challenge

	of deciphering gene function through the use of next generation sequencing for genome and epigenome studies, high throughput gene expression analysis, mass-spectrometry for protein function, modifications and interactions. Particular emphasis will be placed on the efforts to annotate the epigenome. During the course, the students will take turns presenting current research papers related to omics and moderating discussion of the selected topic.
Teaching Methodology:	Lectures, discussions and student presentations Discussions of research papers Presentations of scientific articles
Bibliography:	Current research papers and review articles - ad hoc
Assessment:	Participation in paper discussions - 1 scientific presentation - 1 final examination The course is graded arithmetically 0-10.
Language of Instruction:	English

Course Code:	**BIO 650**
Course Title:	**Special Topics in Bioinformatics**
Number of ECTS:	7.5
Level of Course:	Postgraduate
Year of Study (if applicable):	1
Semester/Trimester when the Course Unit is Delivered:	Spring Semester
Name of Lecturer(s):	Promponas Vasilis, Associate Professor
Lectures/Week:	2 (1.5 hours per lecture)
Laboratories/week:	--
Tutorials/Week:	1 (1 hours per lecture)
Course Purpose and Objectives:	This course provides an in-depth discussion of bioinformatics methods and algorithms routinely used in fields such as Molecular Biology, Genetics and Genomics. The main objective of the course is that postgraduate students become aware of the principles on which commonly used bioinformatics tools are based, instead of using applications in a 'black box' fashion. This approach is of utmost importance, both for the rational usage and for the correct assessment of the results obtained by such methods. This is achieved through a series of lectures and discussion sessions. Students will give oral presentations of selected research papers where usage of Bioinformatics methods has provided significant input to wet-laboratory biological research.
Learning Outcomes:	Students should be able to: - Recognize the importance of different bioinformatics approaches in modern Molecular Biology, Genetics and Genomics - Apprehend fundamental bioinformatics methods (e.g. sequence comparison, comparative genomics, network analysis) - Identify the bioinformatics methods used in different original research papers. - Understand the data types associated with different types of analyses.

	- Assess the reproducibility of bioinformatics methods reported in the literature based on the reported protocols and data identifiers. - Perform effective literature and reverse citation search to quickly collect information about a scientific field of interest. - Reproduce results from select original publications based on similar data and methods.
Prerequisites:	Not Applicable
Co-requisites:	Not Applicable
Course Content:	Lectures cover six broad areas: Overview of Computational Biology and Bioinformatics. Fundamentals of sequence comparison. Comparative genomics. Gene/protein annotation (function prediction). Biological networks. Structural bioinformatics. During the course, students are handed classic papers of the field (including authoritative reviews) as well as selected recent original research articles followed by discussion groups. Papers discussing controversial issues are the basis of individual assignments resulting in oral presentations and discussion groups. A group project (2-3 students per group), using freely available or simulated real-world data and freely available tools is presented at the end of the semester (written report and oral presentation) followed by discussion.
Teaching Methodology:	Lectures, discussions and student presentations Discussions of research papers Presentations of scientific articles Collaborative work (Group assignment)
Bibliography:	Lecture material. Classic papers in bioinformatics. Select papers of interest. Suggested reading 1. Understanding Bioinformatics Author: Marketa Zvelebil and Jeremy O. Baum Garland Science ISBN-13:978 0 8153 4024 9, 2009 2. Bioinformatics: Sequence and Genome Analysis (2nd ed) Author: David W. Mount CSHL Press, 2004 ISBN 0 87969 597 8 3. Bioinformatics and functional genomics Author: Jonathan Pevsner Wiley-Liss, 2003 ISBN 0 47121 004 8
Assessment:	Homework (10%), Seminar [group project] (20%), Midterm exam (20%), Final exam (50%). Optional component: mini research project (up to 40%).
Language of Instruction:	English

Course Title	**Independent Study I and II**

Course Code	**BIO 780 and BIO 790**				
Course Type	Restricted Elective				
Level	Postgraduate				
Year / Semester	Any year/semester				
Teacher's Name	Any Departmental Faculty Member				
ECTS	10	**Lectures / week**	3	**Laboratories / week**	1
Course Purpose and Objectives	Bibliographical in-depth research essay on front-line research topics that are relevant to the content of the postgraduate curriculum. The student is expected to make use of original and review publications in international journals and prepare a written report of 25-30 pages. In order to sign up for the course, students must first obtain the written approval of their academic and research advisors and the supervising faculty.				
Learning Outcomes	Learn how to address a subject in a scientifically robust way, from literature search to writing a review.				
Prerequisites	Written approval of the student's academic and research advisors and the supervising faculty.	**Required**	N/A		
Course Content	Depends on the field of expertise of the faculty who will supervise each student. **Current Students: Please find below important information about this course** o Course Contract o Course Registration Approval Form				
Teaching Methodology					
Bibliography	Literature on assigned/selected subject.				
Assessment	Evaluation of the written review by the instructor.				
Language	English				

Course title	**Conferences and workshops**				
Course code	**BIO XXX**				
Course type	Elective				
Level	Postgraduate (PhD)				
Year / Semester	Fall Semester/Spring Semester/Summer Semester				
Instructor's name	Faculty BIO				
ECTS	2.5	**Lectures / week**	N/A	**Laboratories / week**	

Course purpose and objectives	To provide the students exposure to conference environments, networking opportunities, research presentation experience and research skills necessary for their career.		
Learning outcomes	- to prepare a talk/poster and deliver the presentation in a conference setting - to acquire exposure to current trends in research topics of interest (conference) and/or research training experience (workshop) - to communicate and interact with other researchers - to network and acquire collaboration opportunities		
Prerequisites		**Required**	
Course content	The students that plan to attend a national or international conference or training workshop may register to the course. The course offers training on different transferable skills such as effective research presentation, scientific interaction, acquisition of new research skills, and networking with other researchers. This enhances the students' scientific communication skills and provides collaboration opportunities that increase their career prospects.		
Teaching methodology	Conference/Workshop attendance		
Bibliography	N/A		
Assessment	For conference participation, the talk or poster is assessed by the student's supervisor. For training workshop attendance, the PhD student is assessed by delivering an open presentation on the topic of the training.		
Language	English		

	enhance our efforts to address the funding challenges and reinstate the previously existing PhD studentships.	
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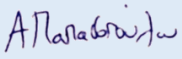
C.

D. Higher Education Institution academic representatives

Name	*Position*	*Signature*
Chrysoula Pitsouli	Associate Professor, Postgraduate Affairs Committee Chair	
Anna Papadopoulou	Associate Professor	
Antonis Kirmizis	Professor	
Niki Chartosia	Special Teaching Staff	
Click to enter Name	Click to enter Position	
Click to enter Name	Click to enter Position	

Date: 10th January 2025

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