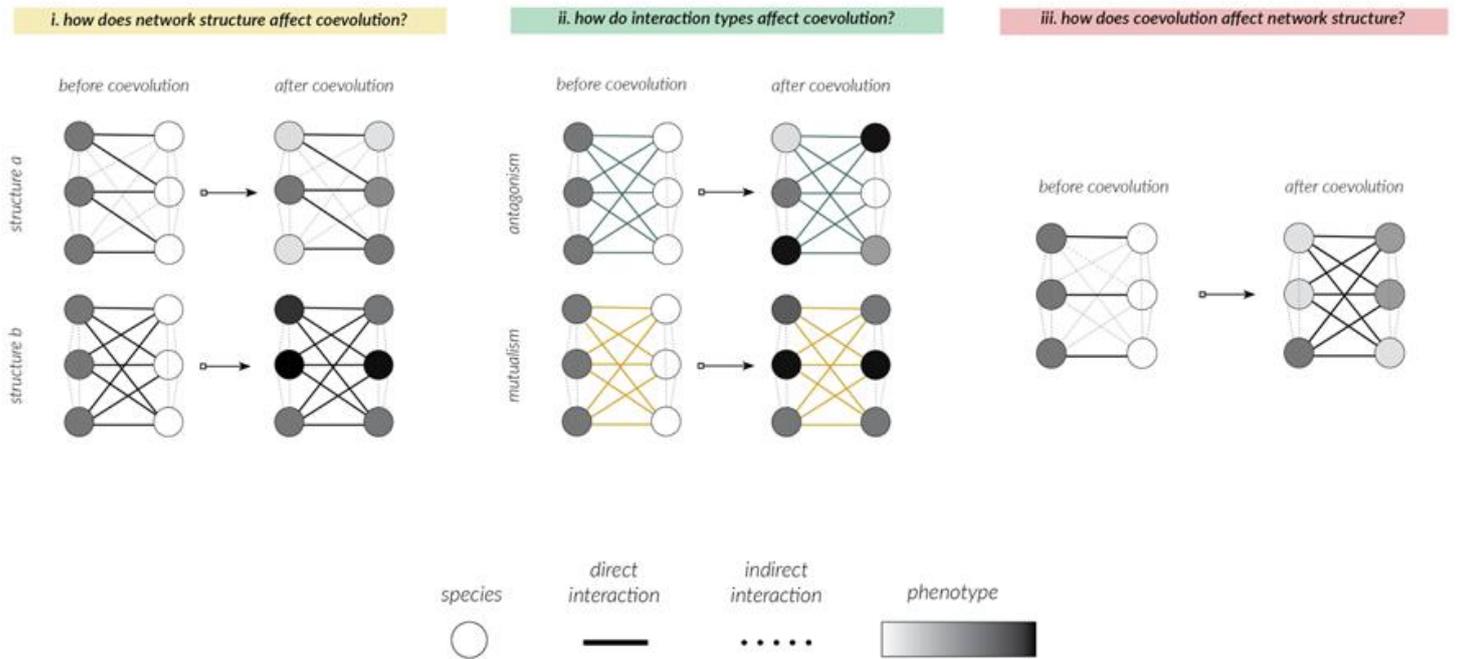




University of Zurich
 UZH

ETH zürich

PROGRAM SPRING TERM 2024



The coevolution of ecological communities. Communities contain direct (solid lines) and indirect (dashed lines) interactions. Such interactions can lead to coevolution, i.e., the reciprocal evolutionary change of species (differences in node colour). These evolutionary changes may, in turn, result in the establishment or loss of interactions © Fernando Pedraza Pérez

“All have their worth and each contributes to the worth of the others.”

— J.R.R. Tolkien, *The Silmarilli*



Dear Members

We would like to warmly welcome our new students; **Marco Barandun, Kimberley Castro, Luke Ireland, Juan Carlos Copete Maturana** and **Eléonore Perret** who recently joined our PhD program.

Congratulations to **Deborah Knapp, Nöelle Klein, Eva Cereghetti, Frederic de Schaetzen, Corina Maurer, Dechen Lham** and **Ewa Merz** who successfully defended their PhD theses.

Thank you to **Fernando Pedraza Pérez** for our cover.

Thank you to all our PI's who continue to contribute to the Ecological Theories course, the sixth version will be held in Spring 2024. Our students are very enthusiastic about this course and the opportunity it give them to meet PI's and to learn about the cutting edge research that you do.

We are excited to introduce the new course program including the Ecological Theories 6 and the building blocks of Scientific Writing courses. Our course program makes the PhD Program in Ecology truly interdisciplinary and a cooperative platform for both the University of Zürich and ETH Zürich. We continuously update our list of offered courses and seminars and are open for suggestions.

Students:

We would like to remind you to keep updated about changes to the regulations for PhDs (Appended to this document and visit the website for more information <http://www.ieu.uzh.ch/en/teaching/phd/graduate.html>).

PI's:

We can assist you to find a qualified graduate student as we are the access point to all international students that apply for a PhD in Ecology within the Life Science Zurich Graduate School. The next recruiting round is in December 2023 and July 2024.

Please let us know about your *successes* which we can celebrate!

Please contact Debra Zuppinger-Dingley (phdecology@ieu.uzh.ch) directly for any questions, feedback or suggestions.

With best regards,



Prof. Jordi Bascompte
Program director



Dr. Debra Zuppinger-Dingley
Program Manager



Cover: The coevolution of ecological communities. Communities contain direct (solid lines) and indirect (dashed lines) interactions. Such interactions can lead to coevolution, i.e. the reciprocal evolutionary change of species (differences in node colour). These evolutionary changes may, in turn, result in the establishment or loss of interactions. I use mathematical models and computer simulations to explore how coevolution is shaped by the structure and type of species interactions and how coevolution affects the structure of interaction networks

Coevolution at the community scale

Fernando Pedraza Pérez

Ecological interactions can result in reciprocal evolutionary change. Examples of coevolution exist across all types of species interactions. For instance, antagonism can lead to arms-race dynamics between hosts and parasites. In turn, mutualism can result in trait synchrony of plants and their pollinators. Such coevolutionary dynamics have resulted in the diversification of life and some of its major evolutionary transitions. Yet, most of our understanding of coevolution comes from the study of pairwise interactions. Thus, we ignore how coevolution operates in communities, where species are embedded in complex networks of interactions. In my PhD work, I leveraged models merging evolutionary and network theories to explore the coevolution of ecological communities. First, I studied how the structure of ecological networks affects the coevolution of species traits. Second, I explored how the nature of species interactions affects the coevolutionary dynamics of communities. Third, I assessed how coevolution modulates the structure of interactions networks and how this influences the robustness of communities to co-extinctions. Through my work I aim to understand how the ecology and evolution of communities are intertwined through the process of coevolution.

1. COURSE OVERVIEW

SUBJECT- SPECIFIC MATTERS

Department	Course	LH	ECTS
IEU	ECO 365 Ecological Theories 6	14	1
WSL	ECO 345 Landscape Genetics	42	3
IEU	ECO 397 Cutting Edge Research Club	28	2
IEU	BIO 402 Philosophy of Science with a Focus on Biology	42	3

METHODS

Department	Course	LH	ECTS
IEU	ECO 331 General linear and linear mixed models in R	28	2
PSC	Statistical Modelling	14	1

TRANSFERABLE SKILLS

Department	Course	LH	ECTS
IEU	ECO 303 Teaching Science at University	28	2
IEU	ECO 362 The building blocks of Scientific Writing	28	2

RESEARCH SEMINARS

Department	Seminar	LH	ECTS
EE	ECO 401 Presentation/Organization at Zurich Interaction Seminar (or equivalent)	-	1
IEU	BIO 605 Seminar for evolutionary biology and environmental studies	-	-
IEU	BIO 606 BEEES Seminar (Behaviour, Ecology, Environment and Evolution)	-	-

IEU: Department of Evolutionary Biology and Environmental Studies

EM: Institute of Terrestrial Ecosystems, EE: Experimental Ecology

14 LH (lesson hours) = 1 ECTS = 30 hours of work (including preparation, participation, homework). ECTS credits are given according to the standards of European Credit Transfer System. BIO605 & BIO606 are not bookable and are recommended to be attended by all PhD students.

2. COURSE DESCRIPTION: SUBJECT-SPECIFIC MATTERS

ECO 365	Ecological Theories 6
Course tutors	Dr Katalin Csillery, Prof. Dr Jakob Pernthaler, Dr Francesco Pomati , Prof. Dr Gabriela Schaepman-Strub, Prof. Dr Bernhard Schmid, Prof. Dr Christoph Vorburger
Date / Time	13 - 15.02.2024, 09:00-17:00
Place	University of Zurich.
Content	<p>This Ecological Theory course provides PhD students with the opportunity to interact with leaders in the field of ecology working in Zurich. The course supports the development of students in the interdisciplinary field of ecology and immerses them into active research areas. Students are given an overview of the development, and principles underpinning major ecological theories.</p> <p>The sessions introduce students to the interface between conceptual and experimental research and methods of testing for ecological theory. The topics are focused on active research lines conducted here in Zürich. Each morning and afternoon session focuses on different fields and approaches in ecology research. The session includes a lecture and breakout groups to provide the opportunity to convert this into practical application.</p>
ECTS credits	Active participation in the course is needed to obtain 1 ECTS credit.
Registration	Module booking phdecology@ieu.uzh.ch , include your Surname, Name, student number, email address, PhD program and your institution. Priority will be given to students registered in the PhD Program in Ecology, however other PhD students may attend if there are available places. Registration by 10 February 2024, cancellation deadline by 31 January 2024.

Course tutors	Dr Katakina Csillery
Date / Time	Online course, 10.01 - 01.05.24
Place	Online.
Content	<p>This course on Landscape Genetics provides a unique opportunity for interdisciplinary training and provides an overview of the field of landscape genetics. The course caters to students in basic and applied ecology, conservation and population genetics, landscape ecology, evolutionary biology and conservation biology. A key objective of landscape genetics is to study how landscape modification and habitat fragmentation affect organism dispersal and gene flow across the landscape. Landscape genetics requires highly interdisciplinary specialized skills making intensive use of technical population genetic skills and spatial analysis tools (spatial statistics, GIS tools and remote sensing). Even when students receive disciplinary training in these areas, educational programs often lack the necessary linkage and synthesis among disciplines. This linkage can only be accomplished after experts from each discipline work together to develop guiding principles for this new research area. Landscape Genetics will be concurrently offered at multiple universities across the globe, giving students the opportunity to learn from international experts and work with peers from outside institutions. For students who are not members of the participating institutions, we are offering a web-based online course to reach a broader audience. Each course meeting will start with a live web-cast lecture (no special software required) by an expert on the topic that introduces foundations and methods and highlights points for discussion in local seminar groups. After breaking out into local course group discussion (including a discussion group for online course students), a web-based discussion across campuses will wrap up the weekly topic. Students who are unable to make it to live-cast of lectures can view taped lectures. In addition, students can choose to participate in an optional lab section using R and/or interdisciplinary group term projects with web-based collaboration across institutions. The final two options are provided to help students develop analytical skills in Landscape Genetics. Students who participate in group projects will have the option of applying to attend a project synthesis meeting in Idaho in mid to late May.</p>
ECTS credits	3 ECTS Please see here the requirements to obtain ECTS for this course
Registration	<p>Having taken an introductory course in statistics, genetics and ecology, and basic knowledge of R are necessary for fully benefiting from this course. Send an email to the course coordinator, Dr Katalin Csillery who will confirm your email address to the DGS organizers, and give you access to the lectures and course materials free of charge.</p>

ECO 397 Cutting Edge Research Club

Date / Time 14.03., 23.05. 11.07.2024, 9:00 – 10:00 (Every two months, dates in Fall 2024 to be announced)

Place TBC.

Content Global change and biodiversity research is essential for improved conservation planning, policy, and management. We will reflect on recent published peer-reviewed journal articles fundamental to global change and biodiversity research.
The aim of this club is to delve into cutting-edge research papers to develop new insights and understanding of the research to flesh out the student's knowledge in many areas of global change and biodiversity research. Students will critically examine how collaboration may increase the interdisciplinarity and transdisciplinarity needed to bridge the gaps between research disciplines within global change and biodiversity research.

ECTS credits Each student, individually or in pairs, presents two seminars including a summary and prepared discussion questions. The summary should include brief descriptions of:

- background of the presenter's research and its relevance to global change and biodiversity,
- aims of the research in the paper,
- methods used in the paper,
- key results in the paper,
- a discussion of most important conclusions and implications for the research in the paper.

Attendance of 12 meetings is required for 2 credit points (equal to 60 study hours).
Active participation throughout the course.

Registration Module booking phdecology@ieu.uzh.ch, include your Surname, Name, student number, email address, PhD program and your institution. Priority will be given to students registered in the PhD Program in Ecology, and the University Priority Program in Global Change and Biology however other PhD students may attend if there are available places. Registration open.

BIO 402 Philosophy of Science with a Focus on Biology

Course tutor Dr. Anna Deplazes Zemp

Date / Time 19.02.2024 - 27.05.2024, 14:00 - 16:00

Place TBA

Content The lecture starts with a reflection on the discipline of biology. We address questions such as: What is the aim and achievement of this discipline? What kind of question does it address? What methods does it use to address them? How do biological explanations work? What are the basic assumptions on which biological research builds? How is it different from other sciences such as physics? We will look at the particular role of the theory of evolution in biological explanations and analyse key concepts in biology such as 'life' or 'gene'. At the end of the lecture, we will also address the connection between biology and ethics in the contexts of the difference between facts and values, evolutionary ethics and the transition from science to technology.

Learning Outcome

On successful completion of the lecture, the students should: - Know central concepts and theories in the philosophy of science. - Understand the particular lens through which biology studies the world and be aware of background assumptions and limitations. - Understand the role of evolutionary theory for research and explanations in biology. - Understand the connection between biology and ethics.

ECTS credits Form, duration and timing of the assessment(s): (if several, define how the final grade is composed). Written answers to different tasks, final examination is needed to obtain 3 ECTS credit.

Registration Module booking online. The allocation of places: priorities defined by the students will be taken into account.

COURSE DESCRIPTION: METHODS

ECO 331	General Linear and Linear Mixed Models in R
Course tutor	Prof Dr. Pascal Niklaus
Date / Time	Mon 03.6.2024, Thurs 06.06., Mon 10.06., Thurs 13.06., Mon 24.06., Thurs 27.06., 9.00-17.00.
Place	TBA
Content	<p>In this course, the participants will learn to analyse experimental and observational data with general linear and linear mixed models. The course will be held as workshop, with lecture-type parts introducing important concepts and exercises in which the participants will work on data sets provided or their own data. A key goal will be that the participants learn to recognize the essential structure of data sets and to implement them adequately in statistical models with fixed and random effects. Specifically, the course will deal with issues of experimental design, analysis of variance, hypothesis testing, variance components, models with multiple error terms as well as balanced and unbalanced data.</p> <p>(Note: it is important to understand that this course is not about generalized linear mixed models [GLMM, non-normal data], although it is possible to deal with such data in the projects)</p> <p>Day 1: Introduction Day 2: Important concepts Day 3: presentation of projects by participants Day 4: assisted work on own data Day 5: assisted work on own data Day 6: Presentation of results</p>
ECTS credits	Active participation in the course is needed to obtain 2 ECTS credit points.
What you need to know	The course participants must be familiar with R and bring their own laptop with a working recent installation of the R software (http://www.r-project.org) including the libraries nlme, lme4, and lmerTest.
Registration	<p>Please provide a short statement about where you are in your studies, about the data you will use during the course and what basic stats courses you have attended. As this is an advanced course, participants will be selected based on sufficient knowledge and own data. Module booking phdecology@ieu.uzh.ch, include your Surname, Name, student number, email address, PhD program and your institution. Registration by: 01 June 2024. Cancellations for Course until 10 May 2024.</p>

ECO 331 **Statistical Modelling**

Course tutor	Dr. Barbara Templ
Date / Time	Mon 03.6.2024, Thurs 06.06., Mon 10.06., Thurs 13.06., Mon 24.06., Thurs 27.06., 9.00-17.00.
Place	ETH Zentrum, CLA J 1
Content	<p>This comprehensive course is designed to equip participants with a deep understanding of linear regression and related advanced techniques using the statistical software R. Over three intensive days, we will cover essential concepts, hands-on exercises, and practical applications, ensuring that participants leave with the knowledge and skills needed to confidently apply these methods in real-world scenarios.</p> <p>Day 1: Introduction to Linear Regression and OLS Estimation - participants will delve into the fundamentals of linear regression, gaining insights into its principles and application. We will explore Ordinary Least Squares (OLS) estimation as a cornerstone technique for parameter estimation. Additionally, we will examine various goodness-of-fit measures and hypothesis testing to assess model accuracy.</p> <p>Day 2: Model Diagnostics, Robust Regression, and Variable Selection - participants will learn how to identify and address potential issues in their models. Robust regression techniques will be introduced to handle outliers and non-normally distributed data. Furthermore, we will explore variable selection methods to refine and optimize models.</p> <p>Day 3: Outline on advanced regression topics: Nonlinear Regression, Splines, and General Additive Models These techniques are essentially used to uncover non-linearities and improve the linear model through the insights gained from the non-linear techniques. Participants will showcase their newfound knowledge and insights in presentations.</p>
ECTS credits	To obtain 1 ECTS, participants are required to attend all course days and hand in an assignment to be carried out at home.
What you need to know	Basic knowledge of the R language would be ideal, but is not essential. Participants without prior knowledge in R will be sent some preparatory material in advance. Please request it.
Registration	<p>Students are required to bring their own computers, with the latest version of R downloaded from https://cran.r-project.org/. As an editor for R, we recommend installing the free desktop version of https://www.rstudio.com as well. PSC course registration is located within the ETH Zurich course registration system:</p> <p>https://ethz.ch/staffnet/en/service/courses-continuing-education.html</p>

Transferable Skills

ECO 362	The building blocks of Scientific Writing
Course tutor	Prof Emma J. Sayer, Dr. Debra Zuppinger-Dingley
Date / Time	8 -12.04.2024, 09:00–17:00
Place	TBA
Content	<p>In this course, the participants will learn how to write and structure scientific texts in English to create a strong narrative and a readable paper. The course will be held as a series of interactive workshops, with lecture-type parts introducing important concepts, exercises in which the participants will analyse published papers, and writing sessions in which participants can work on their own texts.</p> <p>A key goal of the course is that participants learn to create a strong text structure, which is more important than ‘perfect’ English for getting published in a good journal!</p> <p>Specifically, participants will learn how to: 1) think about the purpose of each section of a paper; 2) structure the text across the paper, within sections, paragraphs and sentences to achieve flow and narrative; 3) synthesize information and demonstrate scientific advance; 4) analyze published papers to improve their own writing,</p> <p>Day 1, Think differently about scientific papers</p> <p>Day 2, Telling a story about research</p> <p>Day 3: Structuring text to highlight key messages</p> <p>Day 4: Synthesizing information</p> <p>Day 5: Title, abstract and keywords (search engine optimization)</p>
What students need to know	The course participants must have started writing the first data chapter of their thesis and have text to work on during the course. Laptops required.
ECTS credits	Active participation in the course is needed to obtain 2 ECTS credit points.
Registration	Module booking phdecology@ieu.uzh.ch , include your Surname, Name, student number, email address, PhD program and your institution. Priority will be given to students registered in the PhD Program in Ecology, however other PhD students may attend if there are available places. Booking until 20 March 2024, cancellations until 7 March 2024.

ECO 303**Teaching Science at University**

Course tutor	Sara Petchey
Date / Time	Online course runs from Tues 01 February 2024 for six weeks. In person lectures Tues 01.02.24 9.00-12.00 and Tues 16.05.24, 9.00-12.00
Place	TBA
Content	<p>Your first teaching experience should be effective, enjoyable, and personally beneficial. This course gives you the basic knowledge, tools, and practice to have such an experience. You will learn to make your scientific expertise accessible to your students and build a repertoire of evidence-based strategies for teaching abstract science topics to your students and making them active and successful learners. We will show you how to communicate science to novices as well as advanced students in science.</p> <p>The course blends in-person and online learning which allows you to learn as a cohort of peers while maintaining the flexibility to learn at convenient times. We start with an in-person, half-day course followed by a 5-week online course involving videos and a weekly assignment (average of 3 hours of work per week). We meet in-person again for a half day at the end of the course.</p> <p>Based on up-to-date findings from research into teaching and learning science you will be able to:</p> <ul style="list-style-type: none">- implement evidence-based strategies into your own teaching,- use students everyday-conceptions for the development of courses,- prepare analogies and models to teach in your field,- implement problem-based teaching,- set up for experiments and teach the nature of science.
ECTS credits	Active participation in the course is needed to obtain 2 ECTS credit points.
Registration	Module booking phdecology@jeu.uzh.ch , include your Surname, Name, student number, email address, PhD program and your institution. Priority will be given to students registered in the PhD Program in Ecology, however other PhD students may attend if there are available places. Booking until 01 February 2024, cancellations until 01 January 2024.

RESEARCH SEMINARS

ECO 401	Zurich Interaction Seminar Current research in ecology and evolutionary biology
Organization	The current semester ZIS organisers please go here
Duration and time	Every second week, on Monday 17:15. For details and an overview of the running program see: http://www.tb.ethz.ch/education/zis.html
Place	For the current situation please see: http://www.tb.ethz.ch/education/zis.html .
Content	PhD students will receive a credit point for active participation (including a talk) at the Zurich Interaction Seminar or an equivalent series. A credit points will also be given to students who organize a seminar series or a conference themselves.
ECTS credits	1
Registration	ETH students register at myStudies for the course number 551-0740-00L . UZ students: ZIS is officially registered in the PhD program in Ecology under the name of ECO401 .

**SEBES
BIO 605**

Seminar for Evolutionary Biology and Environmental Studies

Organization	Department of Evolutionary Biology and Environmental Studies, University of Zurich, Winterthurerstrasse 190, CH-8057 Zurich
Duration and time	Every Thursday from 16:15–17:00
Place	University of Zurich Irchel, room TBA
Content	- For an overview of the running program visit: http://www.ieu.uzh.ch/seminars.html - Attending the SEBES is strongly recommended for all students of the PhD Program in Ecology. For information about speaker invitations contact Maja Weilenmann.
ECTS credits	None
Information	M. Weilenmann (maja.weilenmann@ieu.uzh.ch)
Registration	No booking is required

**BEEES
BIO 606**

Behaviour, Ecology, Environment and Evolution Seminar

Organization	Department of Evolutionary Biology and Environmental Studies, University of Zurich, Winterthurerstrasse 190, CH-8057 Zurich
Duration and time	Every Tuesday from 12:15–13:00
Place	University of Zurich Irchel, room TBA
Content	For an overview of the running program visit: http://www.ieu.uzh.ch/seminars.html Attending the BEEES is recommended for all students of the PhD Program in Ecology. For information about speaker invitations contact Maja Weilenmann.
ECTS credits	None
Information	M. Weilenmann (maja.weilenmann@ieu.uzh.ch)
Registration	No booking is required

3. USEFUL LINKS

Useful links	A selection of links that offer additional information about your PhD and cross institutional courses that are offered at University of Zurich and ETHZ:
PhD program in Ecology	http://www.ieu.uzh.ch/en/teaching/phd/graduate.html
Other courses LSZGS	The LSZGS offers a variety of inter-disciplinary or soft skill courses. Students may attend these courses for free. For more information and for registration visit the website: http://www.lifescience-graduateschool.ch/index.php?id=96
ZGSM	Courses of the Zurich Graduate School in Mathematics can be attended for free (excluding courses where additional payments to all participants apply). For more information, visit: https://www.zgsm.ch/index.php?id=current_course_progr0
PhD Programs	Courses of all LSZGS PhD programs, such the partner programs Plant Science Centre and Evolutionary Biology. Students are free to take courses of other programs; however, the number of participants might be limited, and availability based on priority given to own members. Plant Science Centre: https://www.plantsciences.uzh.ch/en/teaching/coursecatalogue.html
UZH/ETHZ	Students can take courses offered by their respective host institution where they are matriculated, for example the Graduate Campus UZH offers transferable skills for PhD candidates: https://www.grc.uzh.ch/en/skills or the courses offered by ETHZ https://ethz.ch/students/en/doctorate/transferable-skills.html
External courses	Courses from external institutions can be attended in agreement with the thesis committee and the program coordinator.

4. REGULATIONS OF THE PHD PROGRAM IN ECOLOGY

4.1 GENERAL INFORMATION

Mission Statement

The aim of the PhD Program in Ecology is to enhance the research competence of PhD students in the interdisciplinary field of ecology, and to support the education of transferable skills for a future career within or outside an academic institution.

Organization

The program is governed by the program director and the associated research groups and is organized by the program coordinator. The associated research groups are experts in the field from the University of Zürich (UZH), the Swiss Federal Institute of Technology Zürich (ETH) and the affiliated organizations Eawag, Agroscope and WSL.

Certificate

PhD students of UZH and ETH participate during 4 years in the program. In addition to the UZH or ETH diploma the student will receive a certificate stating the successful participation in the PhD Program in Ecology. At UZH the certificate is needed to register for the thesis defense.

Further information

All documents, including the semester course program are available on the homepage: <http://www.phd-ecology.uzh.ch/>

4.2 ACCEPTANCE

Application

Candidates apply directly through the homepage of the Life Science Zurich Graduate School (LSZGS: <http://www.lszgs.ch/>) for admission to the PhD Program in Ecology (track 1). The official LSZGS interviews are organized in February and September, calendar week 6 and 36. Applications outside the official interviews (track 2) are possible if a student is employed in a PhD position. Please contact the coordinator of the PhD Program in Ecology phdecology@ieu.uzh.ch.

Acceptance interview

Acceptance to the program is granted based on an interview. The interview includes a presentation by the candidate, followed by questions on the candidates scientific competences. At least three official representatives of the PhD Program in Ecology are present. A protocol of the interview will be signed by all members of the acceptance committee. The following requirements will be tested:

- training in Ecology / Environmental Sciences (equivalent to 10 ECTS) and in Mathematics (incl. Statistics) / Physics (together equal to 6 ECTS);
- evidence of excellent communication skills in English during the interview

Acceptance form: http://www.phd-program.org/Documents_Ecology.zip

Fast track

Fast track candidates of the Specialized MSc Environmental Sciences can enter the PhD Program in Ecology directly through a combined acceptance interview.

Admission

Candidates are required to have a Master's degree or equivalent when they start their PhD. All candidates have to apply for admission and matriculation at the University of Zurich or ETH Zurich and fulfil the requirements of the respective host institution. A detailed description of the application and admission procedures can be found on the following web pages:

UZH: <https://www.mnf.uzh.ch/en/studium/informationen-f%C3%BCr-phd-studierende/Anmeldung.html>

ETH: <https://ethz.ch/de/doktorat.html>

PhD students who successfully passed the acceptance interview have to submit their registration form to the program coordinator: phdecology@ieu.uzh.ch

4.3 THESIS COMMITTEE

Formation of thesis committee

The thesis committee ensures that PhD students receive the best possible supervision during the PhD and a mentoring for the academic or non-academic career beyond the PhD. It supports the PhD student with expertise and advice throughout the thesis work. In case of emerging problems that cannot be sorted out directly by a meeting between the student and the supervisor, the thesis committee members and/or the program coordinator should act as go-betweens. The members of the thesis committee are selected jointly by the thesis supervisor and the student at the start of the PhD, but not later than 6 months after the official date of employment. The thesis committee consists of 3-4 persons:

- The direct thesis supervisor (must be a member of the PhD Program in Ecology)
- The official thesis supervisor (must be a member of the Science Faculty (MNF) of the UZH or of D-BIOL / D-USYS of the ETHZ, or have Promotionsrecht).
This function is not required if the direct supervisor satisfies these criteria
- At least one additional member of the MNF UZH / D-BIOL ETH / D-USYS ETH (or a person with Promotionsrecht)
- At least one external member who has the right to supervise PhD students at his/her home institution

The committee selects a chairman for the thesis committee meeting, who must not be the PhD student's supervisor. The chairman checks that all committee members received the student reports and that both—the PhD student and the supervisor—have the opportunity to talk to the committee in absence of the other party.

Thesis committee meeting

At least once a year the PhD student organizes a meeting with the thesis committee. The PhD student distributes the relevant documents before the meeting to all members. The results of the meeting will be protocolled and signed by the committee members. After the thesis committee meeting, the PhD student submits the thesis meeting report to the coordinator of the PhD Program in Ecology.

Thesis Meeting Report:

<https://www.ieu.uzh.ch/en/teaching/phd/graduate/links.html>

The following time-plan should be followed:

- The first meeting takes place 3–6 months after the official start to discuss the research plan and to sign the doctoral agreement.

Research plan

Prior to the first meeting, the PhD student has to submit to all committee members and to the program coordinator a research proposal of ~2000 words (excluding references) describing his/her proposed project. The research proposal should be written in the form of a grant application and include:

- title or working title of the dissertation;
- a description of the research project, including the background of the research field, preliminary results, planned experiments, potential pitfalls and solutions;
- a timeline of the thesis, including mile-stones and a roadmap.

In case of unsatisfactory performance, the PhD student can repeat the proposal defense within three months. Should the PhD student fail a second time, he/she will be expelled from the program. The accepted proposal should be signed by the thesis committee at the end of the first meeting and the original submitted together with the Doctoral Agreement to the coordinator of the PhD Program in Ecology.

Doctoral agreement

The doctoral agreement outlines the expectations from the student and the thesis committee at the start of the PhD. The form should be filled out and signed at the first thesis committee meeting and should be submitted together with the research plan to the coordinator of the PhD Program in Ecology. The information should be updated in the subsequent meetings and any changes have to be communicated to the coordinator of the PhD Program in Ecology.

The following points should be addressed in the doctoral agreement:

- Members of the thesis committee
- Curriculum, including planned internal and external lectures, seminars and courses
- Contribution to teaching (see below)

Doctoral agreement:

<http://www.ieu.uzh.ch/en/teaching/phd/graduate/links.html>

- Second meeting after 18 months and third meeting after 30 months to present results and evidence of progress. For all subsequent meetings, the PhD student has to submit to the committee members and to the program coordinator a progress report (up to 1000 words) two weeks before the meeting. The progress report can be substituted by a manuscript, provided that the PhD student's contribution is significant and clearly identifiable.
- Final meeting 6 months before registration for the exam.

4.4 CURRICULUM

Structure

PhD students attend program courses for a minimum of 12 ECTS credit points during their PhD; these are subdivided into four categories (see table below). The internal courses are communicated to all members of the program before semester start and they are listed in the UZH online semester plan

“Vorlesungsverzeichnis”:

<https://studentservices.uzh.ch/uzh/anonym/vvz/index.html#>

PhD students in the program have to first register for mobility at UZH and ETHZ to book courses directly. Registration at UZH:

<https://www.uzh.ch/en/studies/application/chmobilityin.html>

Registration at ETHZ: <https://ethz.ch/en/studies/non-degree-courses/special-students/special-students-university-of-zurich.html>

Registered PhD students from all Swiss universities can book courses and the earned ECTS will be automatically accredited to the “Leistungsausweis” at their home university.

Scientific Integrity Course:

The Scientific Integrity course is compulsory for all Life Science Zurich Graduate PhD students. The course must be completed in the first year of their PhD. This regulation is in effect from 1 February 2016.

Internal courses, seminars and lectures of the four categories can be complemented with courses from the LSZGS graduate school, partner PhD programs and the UZH or ETH. In agreement with the program coordinator and the thesis committee PhD students can also attend external courses. PhD students must collect a certificate for courses that are not booked through the institutional systems of UZH (Modulbuchung: see above) or ETH (myStudies) and get them accredited to their student account by the respective faculty (UZH) or department (ETH). In case of doubt the thesis committee will decide about the accountability

and allocation of ECTS credits. One ECTS corresponds to a total work load of 30 hours (incl. preparation and homework). Oral/poster contributions can be each accredited with one ECTS and need to be certified by the PhD supervisor.

Categories	ECTS
Subject-specific matters (incl. special lectures)	3
Methods	3
Transferable skills	3
Research seminars (incl. oral/poster contributions)	2
Free choice	1
Total	(min. 12)

Additional courses the program accepts:

– Graduate School courses

The LSZGS offers a variety of interdisciplinary and soft-skill courses. Students may attend these courses for free. For more information and for registration visit the website. Courses of the Zurich Graduate School in Mathematics can be attended for free (excluding courses where additional payments to all participants apply).

– Courses of all LSZGS PhD programs, such as the partner programs Plant Science Centre and Evolutionary Biology. Students are free to take courses of other programs; however, the number of participants might be limited, and availability based on priority given to own members.

– Courses offered by UZH/ETH

Students can take courses offered by their respective host institution where they are matriculated, for example the Graduate Campus UZH offers transferable skills for PhD candidates or the courses offered by ETH.

– Courses from external institutions

In agreement with the thesis committee and the program coordinator.

Teaching hours

The PhD student and the supervisor list the planned teaching hours in the doctoral agreement. PhD students at MNF UZH have to report planned and absolved teaching hours to the “Fachbereich Biologie / Geowissenschaften”. Teaching hours include the support of lectures on the Bachelor/Master level, exam supervision and correction, and others. Teaching at the Science Education Center (within the disciplines of life science, mathematics, physics, chemistry, geography and biology) can be accredited as teaching hours. Total hours is between 100-420 hours.

Teaching hours form: <http://www.biologie.uzh.ch/Studium/Dokorat.html>

Certificate

In addition to the UZH/ETH Diploma, the PhD student receives a certificate from the PhD Program in Ecology stating the successful participation in the program. The certificate will be signed by the program director, coordinator and the supervisor and is needed to register for the thesis defense.

4.5 THESIS DEFENSE

Registration

The PhD student has to submit and defend a thesis describing his/her original research carried out during the course of the PhD studies. The thesis defense complies with the rules of the host institution:

https://www.lifescience-graduateschool.uzh.ch/en/PI/requirements_end_PhD.html

The thesis committee decides whether the PhD student has passed or not. In exceptional cases, the committee can recommend the students for distinction to the UZH/ETH. This recommendation has to be accompanied by two letters of reference from external reviewers. Distinction is intended for top ~5% of PhD students. The final degree is conferred by either the UZH or the ETH, depending on the academic affiliation of the research group.

The date and title of the defense must be communicated to the program manager no later than one week in advance.

Data backup

Together with the registration for the doctoral examination the PhD student has to hand over the thesis and the complete data used to produce the thesis, including meta information and where necessary analysis scripts, on a data storage medium to the thesis supervisor.

4.6 PRESENTATIONS AND PUBLICATIONS



For any oral/poster presentation it is recommended to use this logo. <http://www.ieu.uzh.ch/en/teaching/phd/graduate/links.html>

Confidentiality

The exchange of scientific data and unpublished results is fundamental for the PhD Program in Ecology. Such information is strictly confidential and should not be shared prior to publication by any of its members. The protection of intellectual property as outlined by the associated institutions needs to be assured.