



## **MSc Program in Biology, Specialization in Ecology**

### **Instructions for students and supervisors for module: BIO 357 Research Internship, Ecology (4-12CPs)**

#### **The final page is the form used for submission of grades**

Owen Petchey, BIO 357 coordinator (last update June 2014)

#### **Description**

The aim of this module is to provide students with experience working on a research project, in research groups or other settings, with ecological topics. Details of each internship are negotiated on a case-by-case basis, among the student, the supervisor of the internship, the module coordinator.

The duration of the internship is from 4 to 12 weeks, with 1 CP per week.

#### *Learning outcomes*

Depending on the specifics of the project students will at the end of this module possess some of the following competences:

- analyse existing data with adequate statistical methods (mandatory)
- acquire deepened knowledge about literature, questions and methods within a specific ecological project (mandatory)
- conduct a small own sub-project within a larger existing project
- conduct experiments and/or field studies fairly independently
- write a report in the style of a scientific publication (mandatory)

#### **Assessment**

The final report will be assessed according to the rubric below, by the supervisor and the module coordinator. *Important:* Please make sure sufficient time and effort are dedicated to the written report! It is easy to fail (grade < 4.0) by submitting a poor report.

#### **Special rules apply to External Research Internships (also see [here](#))**

- The academic work performed must be confirmed in writing by the student's supervisor for the internship.
- The confirmation should provide information on the scope and content of the work and also describe what the student has learned during the internship.
- As a matter of principle, credits are only awarded if proof is submitted of the student's assessment. Students will generally write a scientific report for evaluation by a lecturer from the Division of Biology, who will issue a grade where appropriate.
- One credit can be awarded for each week of a research internship. No more than 6 credits will be awarded, however, even if the internship lasts longer than six weeks.
- It is beneficial if the internship is offered by an organization that has close ties with a university and if the student's supervisor for the internship has a recognized university degree.
- Students must have external research internship approved by the academic support office beforehand, otherwise no credits can be awarded for them. (See next page for how to get approval.)



**Approval is required if the internship is to be conducted externally, i.e., not in a research group at the University of Zurich. This approval must be gained before the internship begins.**

To get approval:

1. Please have your external supervisor send an email to the module coordinator (currently Owen Petchey) with the following text: "I understand that I will be responsible of \*insert name of student\* during their Research Internship. I have read and understand the document (BIO 357 InfoSheet). I am aware that the final report will be graded by a faculty member at the University of Zurich."
2. Please have the external supervisor send the module coordinator their CV, with information included about previous experience supervising student projects.
3. Please send the module coordinator a ~50 word summary of the proposed research project (this can come from you or the external supervisor).
4. Please send the module coordinator that dates of the internship and the date the final report will be submitted.

Once this information is received, the module coordinator will let you know about approval, or whether some discussion is needed. (The module coordinator and Studienkoordination will communicate directly about approval.)



### Assessment rubric – Write up of project

Score each as 2 (complete), 1 (Partial), 0 (Not at all).

#### *Introducing, defining and justifying the research question.*

Complete: Formulates a focused research question, justifies its importance, and sets it in a broader context.

Partial: Formulates an incomplete or unfocused research question, or lacks justification, or lacks context.

Not at all: Does not identify a question, presents no justification, and no context.

#### *Hypotheses and predictions*

Complete: Presents null and working hypotheses that directly address the research question, and makes predictions that can differentiate between the hypotheses.

Partial: Presents somewhat relevant hypotheses, or makes predictions that somewhat address the research question.

Not at all: Does not present relevant hypotheses and does not present relevant predictions

#### *Methods and material*

Complete: Experimental design and data collected are clearly (via graphs and statistical tests) able to test among hypotheses.

Partial: Experimental design and data collected may not be sufficient to test among hypotheses.

Not at all: Experimental design and data collected will not be sufficient to test among hypotheses.

#### *Results*

Complete: Data is clearly presented in a manner that is directly relevant to the research question, hypotheses and prediction.

Partial: Data is clearly presented or is presented in a manner somewhat relevant to the research question, hypotheses and prediction.

Not at all: Data is unclearly presented in a manner that is irrelevant.

#### *Statistical Analyses*

Complete: Appropriate and justified statistical analyses are performed (i.e., assumptions met), and the analyses differentiate between the hypotheses.

Partial: Statistical analyses are inappropriate or not able differentiate between the hypotheses.

Not at all: : Statistical analyses are inappropriate and are unable differentiate between the hypotheses.

#### *Conclusion(s)*

Complete: Conclusions directly address the research question and are justified by the results and analyses.

Partial: Conclusions somewhat address the research question or are somewhat justified by the results and analyses.

Not at all: Conclusions do not address research question and are not justified by the results and analyses.

#### *Comparison with published work*

Complete: Relevant work discussed.

Partial: Important relevant work missing or irrelevant work discussed.

Not at all: Important relevant work missing and irrelevant work discussed.

#### *Critique*

Complete: Sources of uncertainty, opportunities for improvement, and suggested further research are all presented and relevant.

Partial: Sources of uncertainty, opportunities for improvement, or suggested further research are all presented, some may be irrelevant.

Not at all: No consideration of relevant sources of uncertainty, opportunities for improvement, or future research.

#### *Presentation*

Complete: All elements of a scientific report are included, with high attention to detail.

Partial: All elements of a scientific report are included or there is high attention to detail.

Not at all: Elements of a scientific report missing, and lack of attention to detail.



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Zurich, 11 December 2009

**BIO 357 Forschungspraktikum in Ecology**  
**Frau / Herr INSERT NAME, Matrikelnummer INSERT**

Frau / Herr INSERT hat im INSERT in meiner Arbeitsgruppe ein **INSERT**-wöchiges Praktikum im Bereich Ökologie absolviert. Zu diesem Forschungspraktikum hat die Studentin einen Bericht mit dem Titel 'INSERT' vorgelegt.

Betreut wurde die Arbeit von INSERT. Wir bewerten diese Arbeit mit der Note INSERT (siehe unten). Die Studentin hat sich deshalb den Anspruch auf INSERT Kreditpunkte erworben und wir bitten Sie, ihr diese Punkte anzurechnen.

Forschungspraktikum:	BIO 357	Note*: INSERT
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\*ganze oder halbe Note

Leiter des Forschungspraktikums: Prof. Owen Petchey