Seminar in Plant Ecology, Autumn 2022
100206-HS2023-0

Goals & Requirements

In the Seminar in Plant Ecology, members of the Plant Ecology group, and occasionally their guests or collaborators, present their latest research, or ideas for future research. The audience for the seminar includes members of the Plant Ecology group, and the students who are registered for the course. Presentations last 30-40 minutes, and they are followed by discussions of the methods, strengths and weaknesses of the research, and debates about what its results mean. The students not only get a good overview of the research conducted in the Plant Ecology group, but they also get a first-hand experience in scientific debates, and the many facets of conducting, presenting and discussing research in plant ecology.

In order to obtain 1.5 ECTS, students must (1) attend the seminar regularly, and (2) write an essay about one of the seminar topics. The grading is based on the essay and active participation in the discussions. Students who miss more than two seminars do not pass the course (with exceptions for illness, military service, or important family matters). For the essay instructions and grading details, please see below.

Contact

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Essay instructions

General format

The essay should have a length of around 2000 words, with three main sections: (1) Background, (2) Summary of the Seminar, and (3) Discussion & Outlook, followed by a list of references cited in the text and an abstract figure. Please use Times 12 or Calibri 11 as a font, write in continuous text with a line-spacing of 1.5, and add page numbers at the bottom of the pages. You can use sub-headings to structure your text, but keep the formatting simple, and make sure it is consistent throughout the document!

If you need some general advice about scientific writing, how to structure the text, etc., please take a look at the links and book recommendations at the end of this document.

Procedure

1. Pick a seminar topic as early as possible
2. After the seminar, make an outline of your essay and a sketch of your abstract figure and send it to caterina.penone@ips.unibe.ch no later than 10 days after the seminar. Wait until you get feedback.
3. Write the essay and submit it before the end of the semester.

Background

In this section you should explain the **broader scientific context** of the seminar. **Why** has this study been done? What are the **overarching scientific questions** behind the study and what **hypotheses** are being tested? What is **novel** in this study, as compared to previous ones? Use the Web of Science (see instructions below) to **search for relevant literature**, and **cite it appropriately** in the text. Imagine you are writing for someone who has a background in biology but does not know anything about this topic. You need to convince this person that the subject is interesting and provide the information that they need in order to understand the background and broader implications of the research presented in this seminar. A commonly used structure for such a background section is to start at a rather **broad (conceptual) level, and then zoom in** successively to the topic of the study, ending with the specific questions to be addressed.

Summary of the seminar

Here, you should simply summarize the presented research, what the researchers have done, what they have found, and what conclusions they have drawn from these results. Methods should be described concisely but remember to include information on how the experiment or study was designed, how the data were collected and how data were analysed. In the description of the results you should report the findings: how strong were the effects, were they significant? Also identify whether the hypotheses were supported or whether there were unexpected results? How did the speaker explain the results? Please **write in continuous text**, do not simply write notes or bullet points. To get high marks for this section you should accurately describe the methods and results, identify and focus on the most important and interesting of the results, including explanations for them, and describe the content using your own words. It is also good to finish with a brief summary paragraph.

Discussion & Outlook

In this section, you should discuss the **strengths and weaknesses** of the research presented in the seminar, and make **suggestions for future research**. If there have been methodological mistakes or weaknesses, how could the study have been done better? Put the results in context and explain what contribution they make to the subject, this means **comparing the results to those of other studies**. Identify which questions are new or still open, and how they could be addressed in a future study? To get ideas for this section, listen to the discussion after the seminar, take a look at the **scientific literature**, and **think**! Ideally, the structural sequence of this section should be the opposite of the Background section, **from narrow (methodological details) to broad (big open questions)**. Finish the section with a concluding paragraph in which you give you give your view on the issues discussed.

Abstract figure

This figure should summarise the contents of the seminar in a concise, pictorial form. It will include the background, methods, results and take-home message(s) of the talk. A **short description** of the figure should be provided in a caption. Building this figure, while writing the outline of the essay, will help you to structure the essay and to think about the **important messages**. If the talk is rather theoretical or does not present results, the figure will show more the conceptual framework. If the talk is about a methodology, the figure will detail more with the methodological steps. Examples of such figures and links to corresponding studies are given at the end of this document.

It is possible to use and assemble already published material to build part of the figure, providing that the sources are correctly cited, but this should not be the main part of the figure, the main structure should be produced by you. Photos and icons from the web that are free to use are also allowed. Some possible software that can be useful to build the figure: Power Point, Publisher, Illustrator or open access Gimp, Inkscape (*non-exhaustive list*). The figure has to be sound and clear, but you can earn 2 bonus points for particularly good design.

How to cite literature

Literature citations in the text should be ordered chronologically and indicate the author's surname with the year of publication in parentheses, e.g. Jones (1992); Smith & Jones (1992). If there are more than two authors, only the first author is named, followed by "et al." For example, “Jones et al. (2007) demonstrated…” OR “… well studied (Jones 1992; Smith & Jones 2004, 2005; Jones et al. 2007)”. All cited literature should be listed at the end of the essay in in alphabetical order, using the following format:

Jones WB, Smith NE (2004) Patterns of intramolecular carbon isotopic heterogenity within amino acids of autotrophs and heterotrophs. Oecologia 139:178-189. (*for journal articles*)

Körner C (2003) Alpine plant life. Springer, Berlin. (*for books*)

For more detailed instructions, see the Manuscript Guidelines of the journal *Oecologia* (http://www.springer.com/life+sciences/ecology/journal/442)

Grading

The essays are assessed for their content, structure and form as outlined below. The maximum number of points is 40; 20 points are required to pass the course.

	Fail	Okay	Good	Excellent	Weight	Max. points
Seminar summarized (text: 7 points, figure: 3 points)	0	2	3	4	25%	10
Explanation of broader context	0	2	3	4	18%	7.2
Criticism & further ideas	0	2	3	4	18%	3.2
Additional literature included	0	2	3	4	8%	3.2
Structure logical	0	2	3	4	8%	3.2
Language correct & precise	0	2	3	4	8%	3.2
Participation in discussions	0	2	3	4	15%	6
TOTAL						**40**

Participation in discussions:

- never or very rarely (0 - 1 times during entire seminar): 0 points

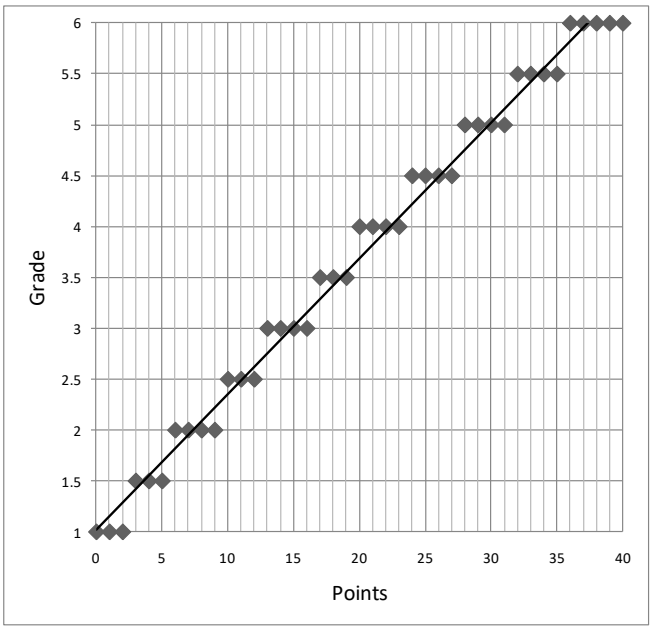
- rarely (2 - 4x): 2 points

- frequently (5 - 8x): 3 points

- very frequently (more than 9x): 4 points

In order to **prepare your questions** and better understand the talks, have a look to the papers attached in ILIAS before coming to the seminars.

Bonus points for figure design: 2 points maximum



Points	Grade
0-2	1.0
3-5	1.5
6-9	2.0
10-12	2.5
13-16	3.0
17-19	3.5
20-23	4.0
24-27	4.5
28-31	5.0
32-35	5.5
>35	6.0

Some useful sources of information

Searching for literature

For journal articles, use the Web of Science (http://isiknowledge.com/wos). From within the university you can access it directly. If you want to use it at home, you need to use either WebVPN or a VPN client (see http://www.vpn.unibe.ch/). You can also use google scholar to search for literature http://scholar.google.com/ it can often search full text of articles and sorts results by relevance but it may not be as comprehensive or reliable as the Web of Science so use it in addition to Web of Science. Once you have found references, check which papers they cite and look at any of these that seem relevant. You can also use Web of Science to check which new papers have cited the reference you've found. Here are some nice instructions, made by students, about how to search for literature using the Web of Science and other sources:

http://www.biology.unibe.ch/content/e6752/e7812/Literaturrecherche_ger.pdf

Scientific writing

- WiSch - Wissenschaftliches Schreiben. Schreibplattform des Zurich Basel Plant Science Center, Bachelor Level, auf Deutsch: https://moodle-app1.let.ethz.ch/lms/course/view.php?id=249
- SkriPS – Scientific Writing Practice. Writing platform of the Zurich Basel Plant Science Center, Masters Level, in English: https://moodle-app1.let.ethz.ch/lms/course/view.php?id=136
- Strunk WI (1918/2010) The elements of style. (Full text: http://www.bartleby.com/141/)
- Pechenik JA (2009) Short guide to writing about biology, 7th ed. Longman.
- http://www.uni-due.de/schreibwerkstatt/trainer/

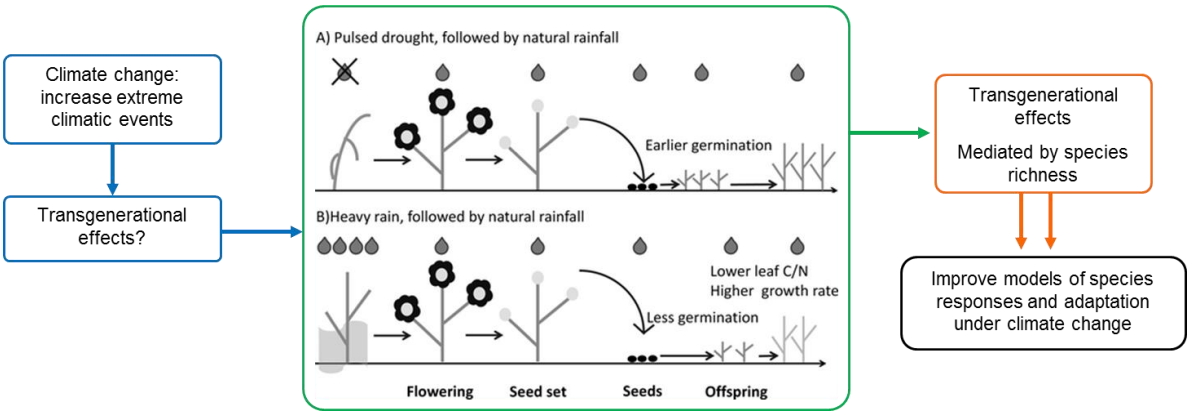
Working techniques in general

- http://www.studycube.ch
- Rost, Friedrich (2010) Lern- und Arbeitstechniken für das Studium. 6. Auflage. VS Verlag für Sozialwissenschaften.

Abstract figure

Browse journal articles and books to see how different authors communicate their hypotheses and results. Several journals show graphical abstracts, some of them might be a good source of inspiration. Have a look at the latest issues of journals that provide graphical abstracts, for example Journal of Ecology (and BES journals in general), Biological Conservation or Ecology and Evolution.

- Example of figure (from http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12567/full)



- Examples of figures presenting background information and hypothesis framework:

http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12644/full

http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12639/full

- Example of figure presenting sampling design and methods:

http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12633/full

http://www.sciencedirect.com/science/article/pii/S0006320716303433

- Examples of figures presenting framework and/or results:

http://www.sciencedirect.com/science/article/pii/S0006320715301774