

Evaluation results:

Soil, soil biology & soil hydrology (February & March, 2017)

Course details

The rationale of this module provided a general idea of soil formation, life within the soil, the links to biogeochemical cycles, as well as transport processes. Key integrating aspects:

- everything is connected (i.e. the water, C, N, P and mineral cycles interact nowhere as closely as in the soil)
- time scales of the different interacting cycles (time of soil formation, vs. time of complete degradation of this years litter vs. time of complete exchange of water within the soil volume?)
- soil structure connects with biogeochemistry as well as water flow

The course was organized in six individual modules which took place in three course weeks.

first week

- Intro to soil science and the soil mineral phase (by Beate Michalzik)
- Soil lab at MPI for Biogeochemistry (by Iris Kuhlmann)

second week

- Pore/water phase & transport processes (by Anke Hildebrandt)
- Overview of soil fauna (by Markus Lange)
- Carbon and nitrogen cycles in the soil (by Gerd Gleixner & Carlos Sierra)

third week

- Environmental change & human impacts (by Marion Schrumpf & Carlos Sierra)
- Soil biology (by Kirsten Küsel)

Details can be found on the webpage: <http://www.imprs-gbgc.de/index.php/Courses/SoilCourse2017>

Up to 10 (out of 16) participants filled in the three surveys for the three course weeks.

Survey results - first week

How useful was the first part of the course in providing background knowledge on the Earth system compartment soil, especially with regard to biogeochemical cycling?

0	1 - not useful at all
1 (10.0%)	2
1 (10.0%)	3
7 (70.0%)	4
1 (10.0%)	5 - extremely useful

How useful was the course up to now for your individual research projects?

1 (10.0%)	1 - not useful at all
2 (20.0%)	2
3 (30.0%)	3
3 (30.0%)	4
1 (10.0%)	5 - extremely useful

Please comment on the first module "Intro to soil science and the mineral phase of the soil" by Beate Michalzik on February 27, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

I found this quite interesting.

the module gave a comprehensive overview on soil formation and processes in a very good presentation. With some background of soil science, the level of detail was pretty narrow, but a good repetition of the most relevant aspects.

I think it was pretty good regarding the module arrangement and level is good for me. Especially like the field soil digging. Very helpful to form impression in brain.

Very informative and well constructed.

Suitable and informative

great lecturer, good introduction to soil science and open for a lot of questions, great working atmosphere

I liked the combination of lectures and "field work", but even if I'm no soil scientist or geo..., I actually knew most of the stuff, because it started at zero at all. Maybe it could be a bit more advanced.

I liked the active spirit of Beate Michalzik. Impressive also her handling of the sledge hammer. The information on her excursions in relation with the history of the area around Jena was very nice.

The style of the lecture was very good and there was a lot of interaction between the lecturer and the participants. Regarding the context it was more or less an overview on basic information that was good for me but maybe too general for some others. For upcoming courses this first overview can possibly be facultative, addressing those who do not have any (detailed) information on soil science.

It was really nice and informative.

Please comment on the second module "Soil lab" organized by Iris Kuhlmann on March 3, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

I found this interesting, but not very relevant for my research.

The module arrangement is okay since it is a lab. And level is very intro-level. Not much contribution from participants

Overall it was too much information in small time.

Very well organized and very useful for beginners.

great introduction; such an introduction should be provided for every one interested or working in the field and lab in the very beginning of the PhD -always good to know who is who and who is working on what

The aim of the lab-tour was not clear to me: For core courses especially PhDs from other backgrounds should apply, but then the introduction into "who can do what with your soil probes" is not necessary, since none of them will have any. It would be more productive (and fun!), if we could do some practical work, e.g. simple analyses with samples that we collected on the first day. (Another pH testing, density tests, drying,...)

It was nice to see a kind of "who-does-what" to get an idea of who is responsible for which process and whom to talk to in case. This could be useful in particular to new PhD students, so it is probably not too good an idea to have this course only after two years.

Instead of the overview of all the experiments going on, one particular experiment can be done in 3-4 hours of time, which will help to get better understanding of the subject.

Which parts of the first & the second module were especially good (and why)?

The enthusiasm was nice, and it was nice to get our hands dirty outside.

first module: the importance of soil was communicated very well and the lecturers enthusiasm for the topic was encouraging

Field trip (soil digging). Because the best way to know soil is to feel it and taste it.

The practical part with proper explanation was really helpful.

Field

Both, Beate Michalzik and Iris Kuhlmann, were entertaining and trying to get the interest of the audiences by making the course interactive!

I liked in particular the practical part outside, but also the theoretical part on soil structure was interesting for me.

During the lecture, Beate Michalzik mentioned which information is most important, making it easier to remember this. Besides, the short part outside was nice to get an impression on the application.

First module: Theory and practical is really apt and helpful Second module: Not helpful, as overview doesn't really help.

Which parts of the modules were not so good / not so fitting / not well enough presented?

While the practical sections were good, they were not necessarily pertinent to me.

soil lab is little waste time for me. Maybe because I don't do lab work. But for someone who do this in their research this may be useful.

The second module could have been better with a proper experiment, instead of overview of all the experiments.

NO

I would be interested in conducting the whole procedure of field work, sampling (as is was well done in Beates lecture) and than preparing samples and working in the lab with the samples we've taken in the field to have the direct experience with the work; then it would be good to see what type of data comes out (from a specific device/programme) and to work on the data, what does it mean when the data looks like that etc

Needs some improvement regarding the level of knowledge in the beginning (see *3) and the aim of the course/audiences itself (see *4)

Again it was obvoius, that the two different lecturers had not talked to each other about who is going to present what. The overlap was marginal though.

I liked the whole first part of the course.

First module: NA Second module: There should be some proper practical session, like the first module 2nd half.

Comments

last part of 6. concerns several courses -what happens with the data; what are the first steps that should be done with the raw data; what kind of possibilities of analysis give the data; what does such a data signature mean etc

Would it be possible to really take soil samples in the first module, store them and actively treat them in a second module? Probably, actively doing all the necessary steps with guidance is more helpful than just looking at the respective devices.

Survey results - second week

How useful was the second week of the course in providing background knowledge on the Earth system compartment soil, especially with regard to biogeochemical cycling?

0	1 - not useful at all
0	2
2 (20.0%)	3
6 (60.0%)	4
2 (20.0%)	5 - extremely useful

How useful was the course up to now for your individual research projects?

0	1 - not useful at all
4 (40.0%)	2
2 (20.0%)	3
4 (40.0%)	4
0	5 - extremely useful

Please comment on the third module "Soil hydrology & transport in porous media" by Anke Hildebrandt on March 8, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

I found it quite good..

The context is very good. With many exercise in the class I feel I can better understand the concepts. Level is very good. Contribution are both considerable from both sides.

Lecture was rushed and therefore sometimes a bit to fast - I liked the exercises during the lecture

good mix of lecture and exercises, very good focus on principles and "big picture"

It was good and informative

I liked the exercises. I did not like that the lecturer had no idea of the schedule and was unnecessarily in a rush.

suit for beginners

The module was very good structured and presented well. Besides, the little exercises every now and then made it easier to follow and apply the content.

It was informative.

I think it's very well prepared, Anke gave a very nice presentation regarding hydrology, especially the first review part, it's very clear for me.

Please comment on the lecture "Soil fauna" by Markus Lange on March 8, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

I found this section good, but not as relevant to my studies.

The module is good. Context is very interesting. Level is basic. No contribution of us. Only lecture.

it was great that several videos were included into the lecture - lecturer spoke a bit too monotonously

good lecture, maybe actually looking at some soil sample under the microscope would be interesting as well!

Not so good, as too much of videos.

The videos were great! I didn't know that microscope work could be that interesting.
suit for beginners

While I think the content is quite important I have to admit I did not learn much from it. Maybe this is due to the fact that compared to other lectures it was more complicated to form a structure as biology is not always that logical.

Too much detailed videos, could have been made easy like the first lecture.

Markus also did a nice work in this talk. Very nice video and the basic concepts unfolded one by one based on a food web graph. It's great.

Please comment on the lecture "Soil C and N stocks and turnover" by Gerd Gleixner on March 9, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

I also found this good, but the timing was a bit difficult. Mostly that it went into the lunch period and I had other obligations.

I don't see a clear arrangement of the context. Because I don't have much left in my mind after the lecture. Level is basic. Mostly lecture. Q an A part is good.

great lecture about soil C, I would love to have hands-on practice here - soil N was missing

good lecture, but for me there was too many results and actual data presented. I had the feeling that I missed the key principles and could not really follow the details in the lecture.

It was really good.

The presentation was excellent and very clear and easy to understand (except for the last part on the technical devices).

suit for beginners

The context of the module was interesting but for me it was hard to follow the lecture because there were lots of abbreviations and it took me some time to figure out when we were talking on SOM, DOM, DOC and so on.

Very interesting and nicely detailed.

It's a little bit fast in one and half hour talk, would be nice to prolong it to one more hours, so more details can be discussed. Still, very impressed.

Please comment on the modeling part by Carlos Sierra on March 9, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

I found this quite good and relevant for my studies.

Like it very much! Clear clue on what is going on and ample details and clear expression.

divided into presentation and exercise - exercise could be longer

very good, lecture was very clear, explaining the principles and it was easy to follow the chain of thought. Nice exercise showing the power of SoilR

The best part of the course.

In my opinion it's a good idea to somehow work practically with models, that's what I liked about this course.

suit for beginners

To me it was a good overview on how models are structured. Although there were many formulas one could follow the lecture and apply the practical example.

Very nice and very well explained about the different models.

I like this part very much although I have no back ground in this field. Carlos gave a very nice, step-by-step talk to guide me into this field. Worth to have it.

Which parts of the second week were especially good (and why)?

The instructors were well prepared and enthusiastic.

Personally I like Carlos' lecture because it is related to my research and he did a good job.

Soil Hydrology and Modeling, focus on principles, easy to follow and to remember (!) even if not from the field and probably not applicable for own research

The portion taken by Carlos Sierra, as he explained the models really well.

Gerd's presentation was great, because he always explained very well what he wanted to show with the slides.

the modeling part is especially good

I really liked the part on models because before I did not really understand what the modelers are doing. Now I have at least a very short insight.

The class taken by carlos, as nice mathematical models were shown with detailed explanations.

Carlos's talk, perfect explanation, easy to understand.

Which parts of the second week were not so good / not so fitting / not well enough presented?

Some of the schedule could be better. Maybe more consistent.

All modules are fine.

would be better to have a full day of course instead of 2h that day & another 3h on another day

the turnover part, presentation was good, but I think I will not remember much of the content after 2 weeks, too many details

The time management by Anke Hildebrandt.

The lecture "Soil C and N stocks turnover" was not so easy to understand.

The part by markus lange. Could have been presented in a simpler way for making everyone understand.

Comments

It would be nice if the slides that were presented could be uploaded on the IMPRS-page.

Survey results - third week

How useful was the third week of the course in providing background knowledge on the Earth system compartment soil, especially with regard to biogeochemical cycling?

0	1 - not useful at all
1 (12.5%)	2
3 (37.5%)	3
3 (37.5%)	4
1 (12.5%)	5 - extremely useful

How useful was the third week of the course for your individual research projects?

0	1 - not useful at all
3 (37.5%)	2
4 (50.0%)	3
1 (12.5%)	4
0	5 - extremely useful

Please comment on the lecture "Soil degradation" by Marion Schrumpf on March 15, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

Good arrangement and level is appropriate

lecture good, I had the feeling that there was not much new information besides the common knowledge about soil degradation/erosion, maybe some more details about research on soil erosion, remedies or actions to reverse the processes would be nice.

overall it was good..

The detail was appropriate

Good

Course was good, but was a bit of a review in some parts. This is understandable, as the course contained many students from different levels.

I hardly remember.

The lecture gave a short overview on relevant processes. The introduction unfortunately was nearly the same than the one on the first course day.

Please comment on the lecture "Response of soil processes to change of moisture and temperature" by Carlos Sierra on March 15, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

Very good lecture. With clear concepts

Good lecture, but what I took from the course is mostly that the current knowledge about the relations and responses is very limited. It was very interesting to get a glimpse at ongoing research in that area and to follow the chain of thought, but maybe in an overview course, the time could be used for more "settled" knowledge?

It was good.

The detail was appropriate and the contribution of the lecturer was positive

Good

Much more math based, which I really enjoyed.

Very interesting talk, in particular about the need to consider the interplay of moisture and temperature, and not to consider them separately.

The lecture was well structured and I got some basic principles but I could not follow everything in detail.

Please comment on the lecture "Response of soil processes to change of moisture and temperature" by Carlos Sierra on March 15, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

good lecture and a good mix with exercises, maybe the impact of the research could be emphasized more: what do we gain if we know what species of microbes are present etc...

The context was interesting and the details was suitable for beginners. The practical part was great.

The first part of the lecture was very nice and I liked the interactive style. The afternoon part on analytical methods was very short and without background knowlegde it was not so easy to follow. Maybe some mor general information in that part would have been good. Unfortunately only six people participated in this part.

Please comment on the lecture "Soil biology" by Kirsten Küsel & the practical on March 16, e.g. regarding the context of the module, level of detail, contribution of the lecturer and the participants.

good lecture and a good mix with exercises, maybe the impact of the research could be emphasized more: what do we gain if we know what species of microbes are present etc...

The context was interesting and the details was suitable for beginners. The practical part was great.

The first part of the lecture was very nice and I liked the interactive style. The afternoon part on analytical methods was very short and without background knowlegde it was not so easy to follow. Maybe some more general information in that part would have been good. Unfortunately only six people participated in this part.

Which parts of the last week were especially good (and why)?

Carlos' course. Very clear expression and useful review.

The modelling part, as it was nicely constructed and easier to understand.

Soil biology

Lectures were well prepared and material seemed appropriate.

I could only choose Carlos', because I wasn't there on Thursday.

Because of its interactive style I liked the morning part of Kirsten Küsel's lecture very much. Besides the lab part there was quite nice and well prepared.

Which parts of the last week were not so good / not so fitting / not well enough presented?

All good

Nothing as such.

a little more practical work would be better

Overall was good.

I think the lecture of Carlos Sierra belongs more to the topics of the week before.

What is your overall impression of the course? Which parts of the whole course were especially good and which were not so good / not so fitting / not well enough presented?

Good but of course can be improved.

Nice overview course providing a good idea about the current knowledge and the ongoing research in soil science. In my point of view, the focus should be on: principles and big picture of the current knowledge, direction of current research, impact/benefit of knowledge and research. Especially the latter point could be emphasized more by the lecturers. I guess for them it's clear, why they do the research.

Overall it was good.

The knowledge and skills was suitable for us.

Good

Overall the course was good and accomplished the stated goal.

Comments

Thanks to the lecturers and organizers.

It would be really helpful if the slides of the different lectures can be uploaded at the webpage.