Field Course in Micrometeorology and Hydrology (ATM 321)

26 – 30 August 2024, Hyytiälä Forestry Field Station, Finland

The "Field Course in Micrometeorology and Hydrology" is organized by the Institute for Atmospheric and Earth System Research (INAR), University of Helsinki (University of Helsinki course code ATM321; 5 ECTS credits) and will be held at the Hyytiälä Forestry Field Station, Finland, from 26 to 30 August 2024. The course is intended for Master students, doctoral researchers, as well as postdoctoral researchers.

The course will cover various aspects related to methods for measuring biosphere-atmosphere exchange of energy and gases (eddy covariance and chamber method), methods for hydrological measurements in the lake, as well as techniques that are widely used in forest hydrology. During the course, students will use MATLAB, Python or R as the main tools for data analysis, as well as processing eddy covariance data.

During the course, students will learn

1. Eddy covariance system setup, system maintenance, theoretical bases, and data processing procedures
2. Gas exchange measurements using floating chambers and data processing
3. In-water measurements of water temperature, conductivity and optical properties using multiparameter probes
4. Forest hydrological measurements of plant water potential, leaf transpiration and sap flow

Assessment

The course is worth 5 ETC units and will be graded on a scale of 1 to 5. There will be no final exam and the grade will be determined by the following criteria:

- 20% on the pre-course assignment (individual based, to be returned before the course)
- 40% on the final group presentation (peer reviewed)
- 40% on the group scientific report (due two weeks after the course)

Course schedule

The course consists of fieldwork, lectures and data analysis (group work). A visit to the Station for Measuring Ecosystem-Atmosphere Relations (SMEAR II) is included in the course. A tentative program is given below:

	Monday 26. 8	Tuesday 27. 8	Wednesday 28. 8	Thursday 29. 8	Friday 30. 8
07:00 - 08:00		Breakfast	Breakfast	Breakfast	Breakfast
8:00 – 11:30	Bus transport from Helsinki Kumpula Campus at 8:00	Field session 2	Field session 4	Data analysis (group work)	Group presentations
11:30 – 12:15	Lunch	Lunch	Lunch	Lunch	Lunch
12:15- 13:35	Introduction to the course Lecture 1 (Eddy covariance)	Lecture 3 (lake physics and measurements) Lecture 4 (Forest hydrology)	Data analysis (group work)	Data analysis (group work) Eddy covariance instrument maintenance and calibration (optional)	Bus transport back to Helsinki
13:35 – 13:50	Coffee break	Coffee break	Coffee break	Coffee break	
13:50 – 16:30	Field session 1	Field session 3	Data analysis (group work)	Data analysis (group work)	
16:30-17:15	Dinner	Dinner	Dinner	Dinner	
17:15-18:00	Lecture 2 (Chamber technique)	Matlab (optional) EddyUH (optional)	Visit to SMEAR II	Free time	
18:00-22:00	Free time	Sauna/Kota	Free time	Sauna/Kota	

Course fee

- The full course fee is **600 €** and includes transportation by bus from Helsinki to Hyytiälä and back to Helsinki, accommodation in double rooms, full board (breakfast, lunch, afternoon coffee, dinner, and evening snacks), social/recreational programs e.g. sauna and kota (barbecue inside a hut), and excursion during the course. The course fee does not cover the cost of travelling to Finland from abroad.
- There is no course fee for students and/or researchers from the University of Helsinki.
- For students and/or researchers from other Finnish and Nordic universities, the course fee is **300 €.**
- A small amount of financial support may be available for travel.

Transport schedule

Monday, 26 August

8:00 Bus departure from University of Helsinki, Kumpula Campus

11:30 Arrival in Hyytiälä station

Friday, 30 August

12:30 Departure from Hyytiälä station

16:00 Arrival in University of Helsinki, Kumpula Campus

Application (Deadline 22.5.2024)

- Apply here.
- We will inform all applicants about the acceptance to the course and decision on the financial support by 31.5.2024

Further information

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Welcome!