



Introduction to Bioinformatics for Biosystematics

Facts about the course

Credits: 5 ECTS

Level: PhD-level course

Language of instruction: English

Place: Natural history Museum, University of Oslo

The course is arranged by the Research School in Biosystematics – ForBio – and travel and accommodation is refunded for ForBio members. ForBio members have priority if the number of students exceeds 25. ForBio may also support master students who fulfill the prerequisites and need the course for their thesis work. Please note that this is not a master course and master students will not get course credits from the University of Oslo. See <http://www.forbio.uio.no/> for more information on ForBio and membership.

Course content

Basic programming skills are becoming essential for handling large datasets and performing complex analyses in biosystematics. This course aims to provide the students with tools to solve practical problems often encountered in biosystematic research. The students will be introduced to programming using Python (www.python.org), R (www.r-project.org), and SQL (e.g., <http://en.wikipedia.org/wiki/SQL>). Other programming languages may be used for specific tasks.

Learning outcomes

Upon completion of the course, the students should be comfortable working with a command-line interface, well oriented in the basics of Python, R, and SQL programming, and familiar with methods for computerized process control and data analysis.

Admission

Deadline for applications is July 31.

PhD-students registered at Norwegian universities:

PhD students from Norwegian universities other than University of Oslo who would like to take the course as a part of their theoretical syllabus for the PhD degree must apply for status as a visiting PhD student before August 13. Please contact the student administration at the University of Oslo (studieinfo@bio.uio.no, +47 2285 6344) for more information.

PhD-students/post-docs registered at non-Norwegian universities:

The student administration at the University of Oslo do not administrate students registered at foreign universities, and PhD-students registered at non-Norwegian universities can therefore not get formal

course credits from University of Oslo. However, ForBio will provide all participants that pass the exam with a course certificate.

Apply by filling the course registration form at <https://nettskjema.uio.no/answer/49665.html?lang=en>
PhD-students registered at Norwegian universities who would like to take the course as a part of their theoretical syllabus for the PhD degree must in addition apply by contacting the student administration at the University of Oslo (studieinfo@bio.uio.no, +47 2285 6344).

Prerequisites

The course participants are expected to have basic knowledge in evolutionary biology and phylogenetic analyses of molecular data corresponding to BIO4200 - Molecular Evolution (www.uio.no/studier/emner/matnat/biologi/BIO4200/index-eng.xml), and BIO4210 - Classification and Phylogeny (www.uio.no/studier/emner/matnat/biologi/BIO4210/index-eng.xml).

You will need a laptop throughout the course. Make sure you have administrator privileges and can install software on the computer.

No programming experience is required but participants are expected to be familiar with the GNU/Linux environment and Bash (www.gnu.org/software/bash). A two day introduction will be arranged for participants without experience of GNU/Linux and Bash. Specify that you would like to participate in the introduction in "Other information" in the application form.

Teaching

All lectures and computer exercises will take place at the Natural history Museum, University of Oslo. Lectures and computer exercises.

Literature: Handouts.

Schedule:

September 15-16 (Saturday-Sunday): Introduction to GNU/Linux and Bash.

September 17-21 (Monday-Friday): Python, R, SQL.

Exam information

Each student is expected to present a solution to a programming problem at the end of the course. The solution will be marked as passed/not passed.

More information including a more detailed schedule will be sent to all participants in August. Any questions before that can be sent by email to magnus.popp@nhm.uio.no