



## Introduction to Bioinformatics for Biosystematics

### Facts about the course

*Credits:* 5 ECTS

*Level:* PhD-level course

*Language of instruction:* English

### 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 the GNU/Linux environment and programming using Bash ([www.gnu.org/software/bash/](http://www.gnu.org/software/bash/)) and Perl ([www.perl.org](http://www.perl.org)). 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 Bash and Perl programming, and familiar with methods for computerized process control and data analysis.

### Admission

*PhD-students registered at Norwegian universities:*

PhD students from other Norwegian universities 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 12. Please contact the student administration at the University of Oslo ([studieinfo@bio.uio.no](mailto: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 participants that has passed the exam with a course certificate.

Apply by filling the course registration form ([www.nhm.uio.no/english/research/forbio/forbio-courses/2011/ForBio-CourseRegistrationForm.doc](http://www.nhm.uio.no/english/research/forbio/forbio-courses/2011/ForBio-CourseRegistrationForm.doc)) and send it attached to an email to Magnus Popp ([magnus.popp@nhm.uio.no](mailto:magnus.popp@nhm.uio.no)).

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](mailto:studieinfo@bio.uio.no), +47 2285 6344).

Deadline for applications is August 31 (but please note the August 12 deadline for “visiting PhD student” above).

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 are clearly qualified and need the course for their thesis work. See <http://www.nhm.uio.no/english/research/forbio/> for more information on ForBio and membership.

### **Prerequisites**

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](http://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](http://www.uio.no/studier/emner/matnat/biologi/BIO4210/index-eng.xml)). No programming experience is required.

### **Teaching**

The course is partly distance based. Two days with intensive lectures and computer exercises in Oslo are followed by five weekly two hours online lectures. Each lecture is followed by a home assignment (usually a programming problem) that should be solved before the next lecture.

Literature: Handouts.

Additional information: You will need a computer throughout the course, and a webcam and a microphone to participate in the online lectures. Please bring the computer, webcam, and microphone you intend to use throughout the course to the first meeting. Make sure you have administrator privileges and can install software on the computer.

Schedule:

September 27-28: Intensive lectures and computer exercises in Oslo.

October 5, 12, 19, 26 and November 2: Online lectures.

### **Exam information**

A programming project will be compulsory and must be presented within four weeks after the final lecture.

The project will be marked as passed/not passed.

More information will be sent to all participants after August 31.

Any questions before that can be sent by email to [magnus.popp@nhm.uio.no](mailto:magnus.popp@nhm.uio.no)