

3-Year Course Evaluation

Course: BIO332 Fylogenetiske metoder

Semester and year for completed course evaluation: fall 2020

Name of course coordinator(s): Dimitar Stefanov Dimitrov

Content

In the present course my main aim is to introduce students to the basic theory and methods used in phylogenetics. The focus is to provide the students with sufficient background information and experience with common software packages, so that they are able to design and carry out phylogenetic analyses independently. Because the tools that are available are very numerous and often differences are not obvious my aim is to exemplify common analytical pipelines and provide background theoretical knowledge that would allow students to make proper choices of methods and phylogenetic software when they need to perform analyses in their research.

The time during the course is therefore split into two – theoretical lectures and practical exercises. Each major step/methodological approach of the analytical pipeline is placed in a module that consists of a lecture followed by practical exercises that are based on the theory given in that lecture. This is done with the expectation that if students have the possibility to practice what they are taught soon after the theoretical classes it may be easier for them to make the link between theory and practice.

During the classes and the practical exercises students are welcome to ask questions and I urge them to also bring their own data (if they have some) and try to use it during the course. I believe that, if they get the chance to use their own data, the course may have greater immediate impact on their PhD and master research, and that they may feel more motivated and may find the course more relevant. Based on my experience in the two years that I am teaching the course very few students actually bring their own data.

During the lectures and practical exercises my focus is on knowledge-understanding-application when I present important concepts. Therefore, in order to challenge the students to pay attention also to the theoretical background and the significance of different settings choices in the software I avoid giving them streamlined recipes that they can just mechanically follow by clicking "next".

Following the same general philosophy, that building deep knowledge and critical and independent thinking is more important than memorizing facts, I have designed the exam as a take home exam where students are allowed to consult relevant literature and work on the problem over a week.

My impression is that overall students show good progress and are able to handle the exam satisfactory. Unfortunately, there are no evaluations available from previous years and it is therefore difficult to follow up. The current evaluation is rather mixed with several critiques about the course from some of the students. It is important to note that this year the course had to be held online and the decision for that was taken just few days ahead. It is very challenging to run a practical course online and it is now evident that for some students it has been very difficult to follow without a list of very specific instruction where they could just click "next" and move along. Usually, a close interaction in the classroom allows to avoid many of the issues that were pointed out, but digital format is more challenging, and some changes will be necessary in order to make the course run smoother next year if it is to be held online. Specifically, a better planning on providing replies to questions in break up rooms, better follow up on the time schedule (for example leaving Q&A strictly for the end the session).

This year I have also taken the UPED600 Intro to Teaching at University and Course Design with the aim to improve the course in the coming years. As a result, some changes to the description of learning outcomes and the course structure have been undertaken. Based on interactions with students and the current evaluation it seems that the general description of the course should be modified a bit to avoid misconceptions about the course. For example, it seems that some students did not expected that they should know how to install and run software on their computers at above basic user level. There seems that there has been a misconception that because the course awards 5 credits it is an easy subject or at least easier than a 10-credit course. I believe that amending the course description could help to avoid such misconceptions and will ultimately help improve students' experience.

For the two years that I have been giving the course the lowest grade was E and it affected a single student. However, this year several students choose not to take the exam. Three of them did this because they did not need the credits and felt that with the challenges around covid and online exams they would rather not take an additional exam.

The following is the description regarding the experience of Miguel Angel Meca Jimenez who took the course as a student in 2019 and then help as a TI in 2020.

I have had the opportunity to assist, both as a student and as a teacher assistant, to the two editions of the course BIO332 coordinated by professor Dimitar Dimitrov. My experience as a student was enriching since, despite I had some background on phylogenetic analyses, I could refresh and settle the basic knowledge necessary to handle and analyze DNA data, visiting the most common software used by the science community. Moreover, I learnt how to run phylogenetic analyses in CIPRES Science Gateway, a public resource which I am currently using to analyze some data generated in my PhD. In general, the course ran successfully, covering all the

lessons programmed and all the individual problems emerged during the exercises were solved by Dimitar and the teacher assistant in that edition. As a teacher assistant, my experience has been again enriching since I could share the knowledge I have accumulated during my 1st year of my PhD. However, in this last edition, it was difficult to go through each individual problem emerged during the exercises, due to the course was held online and the decision was taken just few days before, causing that the development of some of the classes were slower than in face-to-face. In conclusion, my two experiences in this course have been very useful to go onwards my PhD and in my personal opinion this is a course every student (both master and PhD) involved in molecular studies should take in order to manage their molecular data.