

MOL300 Praktisk molekylærbiologi

Emnerapport 2014 høst

Praktisk gjennomføring

Undervisning:

Undervisere:

Strykprosent og frafall

Kandidater	Totalt
Oppmeldt	20
Møtt	20
Bestått	20
Stryk	0
Strykprosent	0
Studiepoengproduksjon	400

Karakterfordeling

A	B	C	D	E	F	Gjennomsnittskarakter
1	9	5	3	2	0	C

Studieinformasjon og litteratur

Studieinformasjonen ble lagt ut på Min Side. Læreboka var tilgjengelig på Studia.

Oppsummering av studentundersøkelsen

Deltakelse

Undersøkelsen ble sendt ut til 20 studenter, hvor 17 svarte. Det tilsvarer 85 %. Alle var masterstudenter i molekylærbiologi i første eller andre semester.

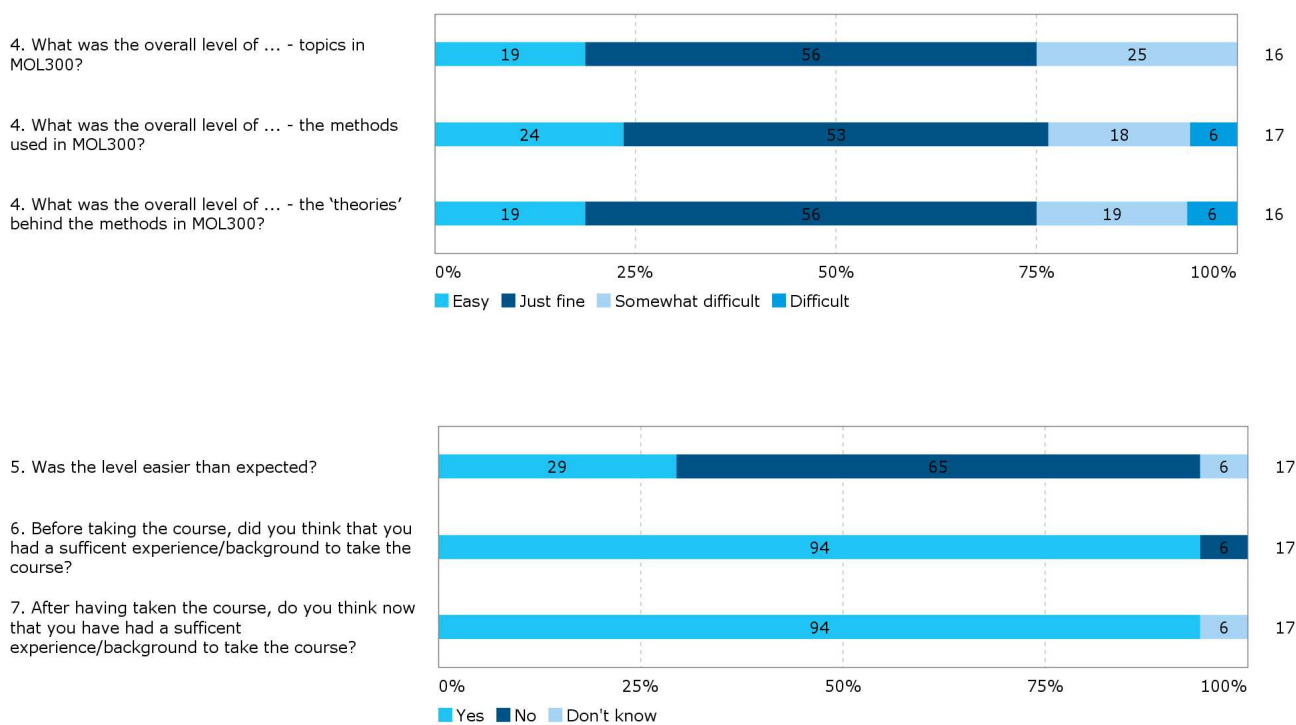
Forventninger

På spørsmål om hva de forventet i emnet svarte halvparten at de forventet både teori og metode, en tredjedel forventet mer metode og en femtedel forventet mer teori. 76 % svarte at emnet svarte til forventningene. Resten fordelte seg likt mellom å ha fått mer enn forventet og å ha fått mindre enn forventet.

Tidsplan, nivå og forkunnskaper

12 % mente tidsplanen var litt løs, 41 % passelig, 41 % litt stram og 6 % for stram.

Som figurene under viser var de fleste studenter fornøyd med nivået på temaene, metodene og teoriene i MOL300. Nesten alle studenter mente de hadde de forkunnskapene emne krevde.



Sammendrag fra kommentarer til temaene/metodene

Spectroscopy, Chromatography, Enzymology, Electrophoresis

Bra å starte med det grunnleggende. Noen syntes det var en kjekk repetisjon fra MOL202, mens andre mente det var unødvendig med en slik repetisjon. Noen mente protokollene kunne vært mer ryddige, og at de var vanskelig å forstå. Hektisk med fire rapporter, imidlertid nyttig.

Technology I and II

God øvelse med nyttige og relevante teknikker. Undervisningsassistentene får svært mye skryt.

Band shift

Teorien var vanskelig, men øvelsen god. Relevant øvelse siden de fleste molekylære prosesser har protein/DNA-interaksjon. Tilbakemeldingene på rapporten kunne vært noe mer konkret, og det var litt utydelig hva som ble forventet av studentene. En respondent mente øvelsen var litt dårlig organisert og eksperimentene fungerte ikke som de skulle.

Cell culture

God øvelse for å lære hvordan man skal håndtere cellekulturer. Forelesningene var gode og relevante, og studentene synes å ha forstått hva de selv gjorde i øvelsene. Øvelsen var godt organisert og informasjonen var hensiktsmessig. Undervisningsassistentene får skryt. En respondent trekker fram denne øvelsen som den beste i hele emnet. Labmanualen trekkes også fram som svært god.

Protein purification

Flere respondenter kommenterte at eksperimentet ikke var gått godt nok gjennom i forkant av øvelsen, og studentene visste ikke hva de skulle gjøre store deler av tiden. Imidlertid var det en god øvelse som tvinger studentene til å tenke selv, og ikke bare støtte seg til protokollen.

What kind of topics or subjects you would like to have?

In situ, in situ hybridisation, aquaculture, ecology, studies on a yeast as a model organism, an exercise where the students can determine the amino acid sequence of an unknown protein, or the DNA-sequence of a gene, Zebrafish lab, RT-PCR and ELISA etc., immunocytochemistry.

How was the teaching staff overall?

Noen tilfeller av miskommunikasjon mellom undervisningsassistentene, og problematisk at de hadde ulike oppfatninger av hvordan rapportene skulle skrives. Undervisningsassistentene var stort sett svært hjelpfulle og greie. Litt utfordringer med at noen undervisningsassistenter ga informasjon bare til halvparten av studentgruppen. Kommunikasjonen med undervisningsassistenter og forelesere gikk stort sett greit. Christian og Signe trekkes frem av flere som spesielt gode undervisere.

How were the materials (reagents, chemicals, instruments, ...)?

Stor sett svært god standard.

I spørreundersøkelsen stilte vi også noen spørsmål som går på logistikken fra år til år. Svarene er svært detaljerte, og til internt bruk, og derfor er bare spørsmålene, ikke svarene, tatt mer her.

- To make the course 'successful', students should be prepared by reading the protocols and the course materials in advance. What would be the reason(s) that some were not prepared and do not know what to do with the lab exercises they were carrying out? What could be done to cope with this challenge? (Please note that MOL300 does have an overview session of about 30 min. before starting each day.) In 2013, 'the flowchart scheme' in which students summarise the experimental plan was introduced. Has this helped your preparedness?
- The main aim of MOL300 is to prepare the students for their Master thesis work. However, many have said that they did not remember 'anything' after the course had finished. Sadly, the thesis advisers, other senior students and scientists who would help the students have confirmed that they have had to help the students for the very basic things. The reason was simple: Many students could do little. Quite many experimental procedures in the protocols in MOL300 could be used directly with no or little modifications and the hands-on experience gained during MOL300 are directly relevant to MSc studies. What would be the possible reasons for the students not remembering much and not utilising relevant protocols and the techniques? How should we cope with this challenge? (It must be noted that former MOL300 students, with almost no exceptions, have said that MOL300 did help them for their MSc only AFTER they had finished their thesis.)¹³. The Teaching Lab is overall well equipped. However, certain equipment is lacking or in shortage, which makes long waiting lines. What would be the best way to deal with this challenge?
- The Teaching Lab is overall well equipped. However, certain equipment is lacking or in shortage, which makes long waiting lines. What would be the best way to deal with this challenge?
- The schedules in MOL300 are very rigid, with very little room for flexibility. (Although there are 'free' weeks that one could use to tend various (including personal) matters, not all events fall into these weeks.
Also, if the student misses a lab exercise or a portion of it, both the student and the teaching staff face challenges to catch up/to make up for (currently, it is very difficult).
Do you have any suggestions on how to deal with this challenge, without sacrificing the goal and contents of MOL300?
- How were the Wednesday morning lectures (i.e., the same day of the lab) instead of Fridays? Students had complaint that the Friday lectures of a week or two prior to actual lab exercises were not effective because the lectures were too far in advance and the students could not be attentive

due to various reasons. Therefore, the lectures moved to Wednesdays.

Now some student says they need more time and Wednesday morning lectures are too close to be very useful for the preparation and the lab exercises. However, due to departmental limitations (lecture room, overlapping courses, meetings/seminars, etc.) MOL300 cannot have lectures on Mondays and Tuesdays. How should we solve this dilemma? Any genuine and ingenious ideas are welcome.

Do you have any other relevant comments? How to improve MOL300 in content, organisation, structure, etc?

Undervisningsassistentene bør samarbeide og samkjøre undervisningen mer. Klarere pensumlitteratur.

Underviserne kan gjerne snakke saktere så det er lettere å få med seg hva de sier. Sammenligne flere metoder. Forelesning om temaer FØR labøvelser. Mer praksis på å sette opp eksperimenter og knytte det til relevante teknikker for å løse hypoteser. Bedre organisering av labøvelsene. Underviserne må påse at samme informasjon gis til begge labgrupper.

Kommentarer fra undervisere

The student evaluation is helpful because the teachers will know what the students want and what the teachers themselves may have missed or not have thought of. The student evaluation says that MOL300 has largely met its aims. I thank for many helpful suggestions and constructive criticisms.

The main goal of MOL300 is to equip the students with basic knowledge and practical experience in modern molecular biology and biochemistry. The course has two main areas of emphasis: hands-on experience and report writing. For the former, the lab schedules/protocols were arranged to allow as many experiments done as possible. By requiring each student, whenever possible, use different samples, they also encourage active student participation. The latter, the report writing, is also very important. The students will improve their report-writing skills, with helps including detailed feedback on submitted reports.

The lectures before lab exercises will be held on Tuesdays by student requests. The teaching arrangement of other courses at MBI will be adjusted accordingly. These lectures called earlier 'Friday Lectures' and they moved to Wednesday (on the same day of lab exercises) in 2013 by student requests.

Flowcharts, which introduced in 2013, are important for the preparation of lab exercises. It seems they are well received and integrated.

From 2015, the Open-end experiment will be a 4-week-long (twice as long as the current one). The intension was that the student would acquire more independent 'daily research routines', which are critical for their MSc work.

Overall, tight schedules with multiple experiments in MOL300 are quite challenging. However I know that with keen interest and determination the students will cope with well and become ready for their MSc work.