Emneevaluering BIO206 Fiskeernæring høsten 2014

Prof II Rune Waagbø

Dette høstsemesteret hadde jeg undervisningen min på norsk for første gang på lang tid. I overkant av 30 studenter var påmeldt og omlag 20 studenter fulgte undervisningen regelmessig.

Undervisningen er i form av tematiske forelesninger, hvor noen holdes av andre forskere fra NIFES. Det blir lagt vekt på at undervisningen skal være forskningsbasert og i enkelte fagområder innen fiskeernæring er det høy forskningsaktivitet. Studentene skal skrive en semesteroppgave fra gitte tema og som utgjør halve karakteren i faget. Ved semesterslutt avholdes en skriftlig eksamen som utgjør andre halvpart av karakteren. I etterkant av forelesningene er det satt av tid hvor studentene skal presentere sine oppgaver for de andre studentene i form av 10 min presentasjoner. Dette utgjør både individuell trening i presentasjon og repetisjon av aktuelle tema relevant for skriftlig eksamen. Jeg vurderer presentasjonen etter enkle gitte kriterier og legger denne til grunn dersom studentene vipper mellom karakterene i semesteroppgaven og skriftlig eksamen. Generelt sett var studentene noe mer engasjerte i undervisningen enn tidligere år. Dette kan ha med språk og gjøre, siden klassen ble holdt på norsk.

Det varierer en del hvor mange studenter som kom til de enkelte forelesningene, men oppmøte var generelt høyt og bedre enn i fjor. Studentene får tilgang til kopi av forelesningene på MiSide og dette kan påvirke oppmøtet i en travel studenthverdag. Presentasjonene til studentene var generelt av høy kvalitet, selv om mange selv mente de ikke hadde trening i presentasjon. Kvaliteten på semesteroppgavene var varierende, men ingen strøk (D/E var laveste karakter). Ingen problemer med plagiat ble identifisert gjennom Ephorusprogrammet. På skriftlig eksamen var det en todeling i gode og mindre gode prestasjoner, og totalkarakteren ble da utjevnet til normal-fordeling med to toppkandidater og en som strøk.

De fåtall studenter som har gitt tilbakemelding direkte til meg er tilfreds med engasjerende og aktuelle forelesninger.

Jeg vurderer i inneværende å engasjere studentene mer i form av andre tilnærminger enn rene forelesninger. Jeg vil også vurdere nytteeffekten av tilgjengelige forelesninger i portalen. Jeg planlegger å utarbeide en elektronisk lærebok i Fiskeernæring dette året som vil være pensum videre i faget. Denne vil være på engelsk (trolig utgis av forlaget Wiley-Blackwell). Oppdrettsnæringen er internasjonal og det er viktig at studentene kan kommunisere på engelsk innen fiskeernæring.

Bergen, 12.01.15

BIO 208 "Environmental effects of Aquaculture" Spring 2014
Audrey Geffen and Ian Mayer

Class size: This course was extremely popular this year, with over 40 students. Although the course can easily be offered to such a large number, the class list actually doubled in the short space of time within the first week of the semester. This left very little time to adjust the activities that were planned for 20-25 students, and suddenly had to be adapted for 45 students. This issue was brought up in the teaching committee meeting of 23.4.2014. This course is ideal for exchange students and for students from across BIO and further, but will need more resources in terms of teaching assistants to handle larger numbers.

Course structure: Based on the positive response changes in structure in 2013, a combination of lectures and linked student-led discussion session was planned. The sudden increase in student numbers led to an increase in the number of discussion sessions, and larger student teams to run each one. Fewer lectures were held this year, with extra discussion sessions replacing 2 of the earlier planned lectures, in order to give all students the opportunity to participate in a topic-team.

Lectures: The lectures that were selected for inclusion were those that would introduce each week's theme. Only 2 guest lectures were included. Again, there was a major problem with updating lecture content and presentation mode, and it was difficult to share ideas about best practice among the lecturers. The plan for next year is to widen the teaching team, and at the same time to have a planning meeting before semester start to share ideas about content and presentation. This should ensure coherency and consistency.

Student led discussion sessions:
Again, these sessions encouraged a more active use of the course Pensum, with readings assigned prior to each lecture, and integrated as the basis for the student-led discussions. The discussion topics were assigned to link to the lecture topic of the same week. Each discussion was supported by scientific readings and popular literature or links to Internet or media sources of information. The sudden increase in student numbers meant that instead of 2 students assigned to be responsible for each discussion week, there was a team of up to 5. A researcher was named to review the assigned readings, 2 students led the discussion, and 2 were rapporteurs during the discussion. The team was supposed to provide a written summary of the discussion to distribute to all the students, but in the end

this became a group report. On the final day of class, each discussion team presented the highlights of their session in a 1-slide overview, with 5 take-home points. This served as a review session for the exam. All students were required to read the assigned readings and to prepare questions for the discussion. Preparation and participation were evaluated each week as part of the overall course mark.

There were a number of written assignments during the course, although the sudden increase in student numbers meant that feedback was not delivered on individual pieces. The exam was changed to a take-home format, and this change was approved by the students using an email survey. Students were expected to deliver an individual report based on the issues or sources for their discussion session, as well as a contribution to the team report.

The lecture topics were somewhat updated and three guest lecturers were included in the course. The major innovation was the use of the discussion session, which demanded and rewarded student involvement. This appeared to be appreciated and popular.

Areas of concern and plans for improvements:
Drop out and attendance were not a problem this year, making participation in the discussions part of the evaluation, and visibly recording who attended and participated encouraged student activity and leadership. Expectations and deadlines caused some problems. The first because of the high portion of exchange students in the class. We were unprepared for this influx in numbers and different backgrounds, but will certainly take that into account in the future.

Student assignments and work load

We increased the number of discussion sessions, and that meant that more of the assignments were shifted to the end of the course. Indeed, the take home exam and deadline for all written work both occurred during the last 2 weeks of March. This probably caused some stress for the students to submit everything on time. However, it should be noted that the discussion reports could, and should, have been submitted throughout the semester, soon after each team was finished with the session.

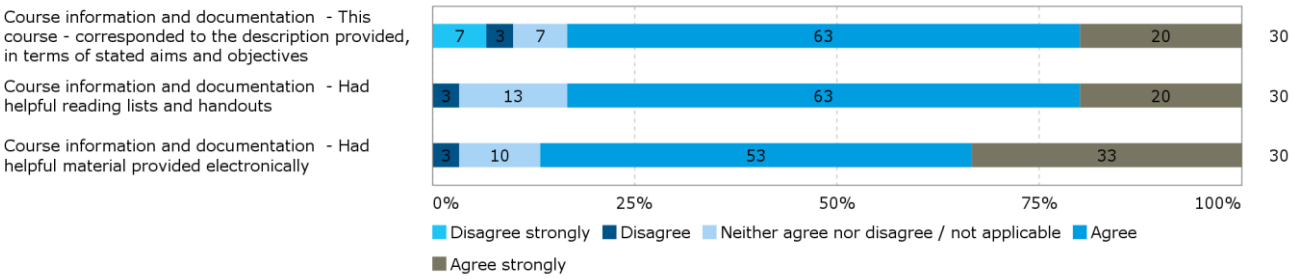
A survey was sent to students just after the take home exam was finished, but before the final deadline for all written work. The final official course list showed 42 students, but 3 of these did not take the exam. These 3 are

included in the total of 5 who did not complete the class. This retention is the lowest that the course has experienced so far, suggesting that the changes that have been implemented over the past 2 years are having a good effect.

The response to the survey was very useful, with 26 – 30 students responding (up to 75%). Students appreciated the opportunity to be active and responsible through the discussion session, but would have also preferred more lectures, and smaller discussion groups. This can be accomplished with more teaching assistants next year.

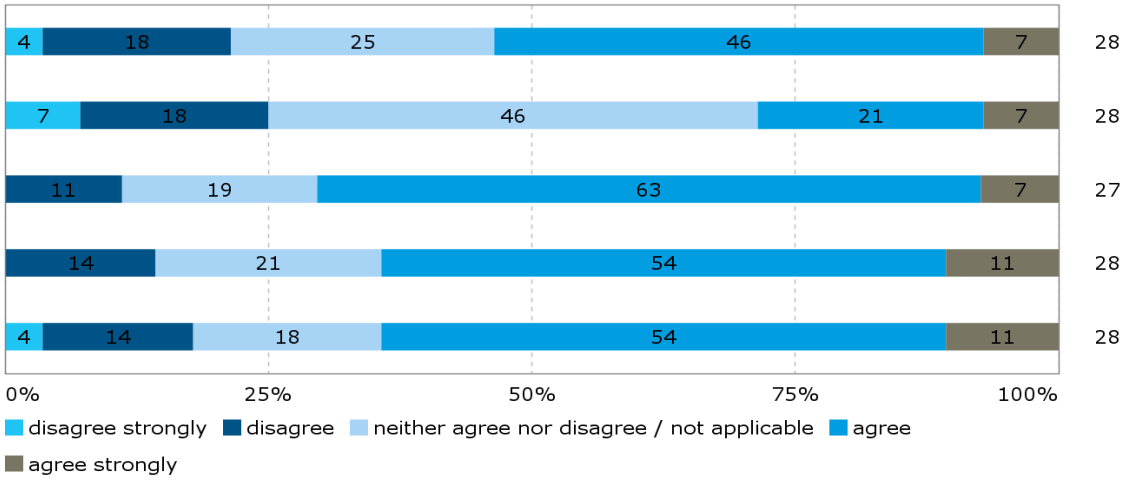
Again, we were criticized for lack of clarity in the evaluation criteria, even though this was communicated clearly on the course home page (miside). The plan to move to a broader teaching team will help because all of these decisions will need coordination and much earlier meetings – well before the beginning of the semester.

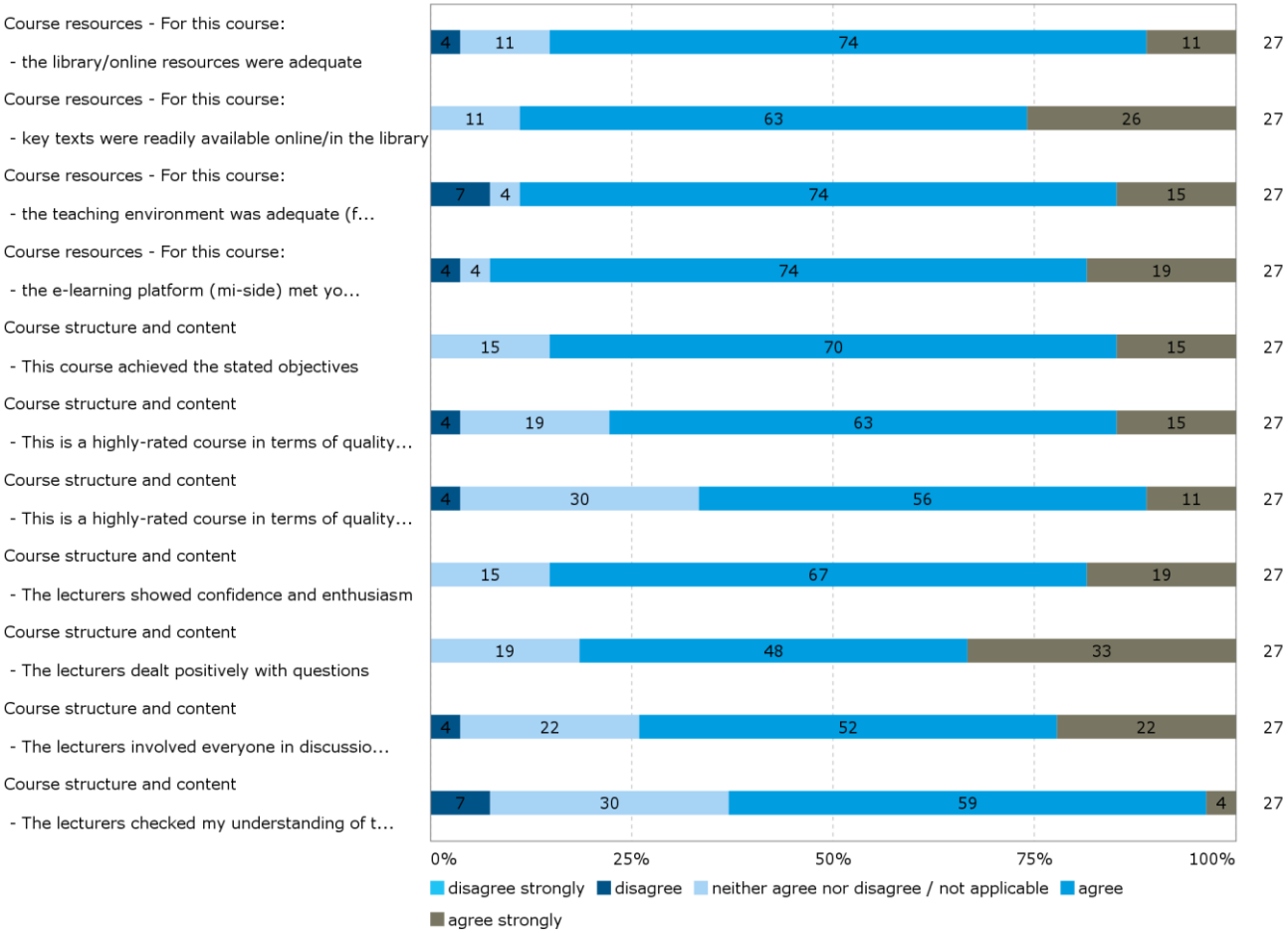
Results of the student survey (75% responding)



Assessment & Feedback - in this course you:

- received constructive comments on your contributions to in-class discussion
- received feedback which enables you to see how you can improve
- understood what was required of you in the coursework and examination
- understood the assessment methods and evaluation criteria
- felt there was a good balance between…





What was the most beneficial section, and why?

- discussion about sustainability, because it summed up everything
- I think the discussions was the most beneficial question because they learn us to build relevant opinion (in English).
- Discussion : interaction between student, allow to think about things/subject that you didn't think before and for Erasmus student : good training to speak in front of people
- discussions, good to improve english, loose the fear of talking in english in the class, great to think about the readings once more
- Lectures, because they provided an important amount of knowledge in an easy understandable way
- The discussions, got to see things from different sides
- The discussion was very exciting because the pupils had freedom to conducting the topics. Some topics were more discussed than others, this reflect what are the preferences of the students on environmental impact of aquculture.
- The most beneficial section of this course had to be the discussion aspect. Learning through the discussions was very helpful to me , especially as information is condensed and concise. Additionally fellow students brought their own knowledge and experience of the industry in their respective countries.
- The discussions where beneficial because we were "forced" to read material for each session and thus got a good overview of the topics along the way. It is also always nice to hear other peoples opinions, because this also enables to get a broader view of the subject
- The class discussions and the summary slides was a really good way to enforce what was taught in the lecture
- K. Glovers presentation on farmed escapees was very good.
- The lectures, because they gave an overview of the different topics of the course

- Reading and preparing for the discussions. Then you had an understanding of what was to be talked about in the discussions and you had the possibility of being an active paticipant
- Not sure
- not sure
- the discussion part because you had to talk in english and you had always an opinion about a topic that we discussed
- The discussion: useful, dynamic, providing a good overview, easy to understand and good to memorize the topics.
- Dunno
- lectures were good, but too few.
  group project was beneficial for that single subject. group work forces us to find material and read it and judge the content.
- The discussions were the best part to understand different perspectives.
- The most beneficial section was the take home exam. You actually have to know the literature when answering your exam questions, and in some cases you have to think for yourself. I liked that.
- The most beneficial part of the course were the weekly discussion rounds because everybody was forced to give his own input. It was another easier way of studying and I am able to remember the studied content for a long time.
- if aquaculture will save the world, chemical and wastes used in aquaculture, escapees.
- Discussion section section.Every discussion session I learned so many things from articles,students participation,open opinion etc.
- I felt that the lectures themselves were the most beneficial, however the discussions enabled us to "repeat" parts of the lectures and further memorize information.
  I very much enjoyed all the lectures and how they were presented (not just read up word for word), the lecturer showed that they knew the subject indepth and what was currently happening within the aquaculture industry.
- Diskusjonsgruppene opplevde jeg spesielt positivt. Fint med alternativer til normale forelesninger og egenlesing. Gir et litt annet innsyn i faget enn et reint "svart-hvitt" pensum. Noen av diskusjonene ble likevel noe like. Kunne kanskje kuttet bort enkelte temaer, og slått dem sammen med andre?

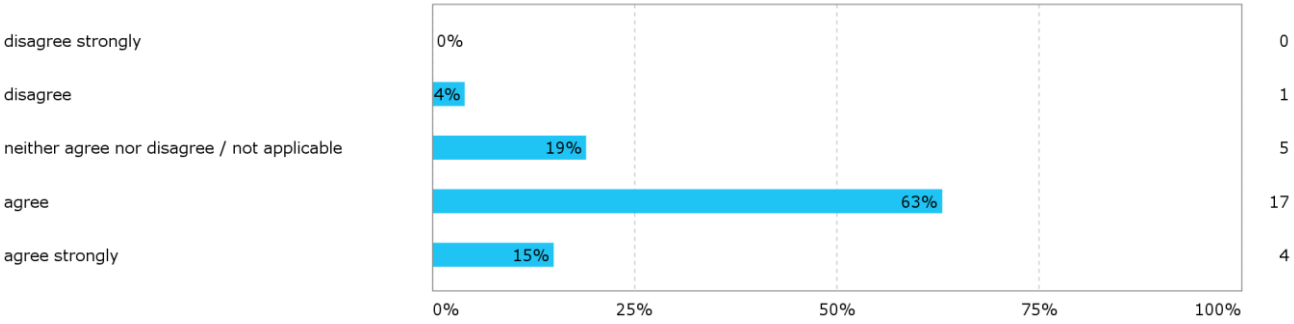
What was the least beneficial section, and why?

-
- There were really too much paper too read.
- The take home exam was too long or the deadline too short
- Although beneficial anyway, the reading yourself of the proposed articles by the discussion group for the discussion session sometimes was not vey useful as during the discussion some of them didn´t appear into debate
- the written exam, there was not enough time to write the desired length of the paper
- No comments
- I found that , due to both its format and mixed message in what constituted a good answer length , the home exam was the least beneficial to my learning in this topic. However, I appreciate that marked assessments are necessary to map a students progress
- The written summary felt a bit unesessary because 1) we didn't have clear instructions on it 2) it is hard to summarize a discussion if there are no conclusions made 3) it felt useless since none of the other students have the opportunity to read it and use it for the exam
- NA
- The discussions were for me the least beneficial. There were unfortunately a lot of people that were not active participants.
- The course did not follow the set evaluation methods, it was to suppose to be an exam in the end of the semester(june). It did´t say anything about the discussion in class (which accounts for 50% of the grade),next time: give this information before the semester starts, so the student are sure about what the course is about and its evaluation methods.
- That the course didn't follow the set evaluation methods. When choosing courses for this semester it was stated that BIO208 would have one written school examen at the end of the semester(june)that would account for about 70 % or so of the final grade. Instead, 50 % of the grade was based on participation in oral discussions. Also, the take - home exam had way to high demands in terms of how much we were expected to write in just 2 days. So till next year, I strongly suggest that students are informed of these evaluations methods, prior to them choosing the courses.
- Do we really need to make a complet summarize of the discussion AND a personnal report?

- I felt that the home exam was a bit extreme. When asked to write 10 000 in under two days, you get kinda unmotivated, and this effected my achievement. If the task was more manageable I would probably have put some more work into it.
- discussions were not beneficial, much repetition, few new facts and more opinion based. hard to follow what was said, hard to use the discussions for something useful on a later stage.
- The discussion classes. There were too many people in the classroom for everyone to participate actively in the discussion. Also, everyone had read the same literature and was (hopefully) equally prepared, so in most cases people only agreed with each other instead of actually discussing. I would rather prefer that the discussion classes were with 10-15 people or that the class had 'divided opinions' (the class could be provided with different literature with opposed opinions, and the goal is to argue your best for your article's conclusions).
- It was a little bit confusing at the end of the discussions because we get no feedback.
- hardest to discuss the coastal zone management.
- Group report because group work each student has different type opinion.
- Not quite sure.
  I do think that maybe lack of control of the discussions qualify, this is by the discussion leaders. I feel this way because some persons started focusing too much on less important points and not keeping with the topic of the discussion.
- Hjemmeoppgaven, ikke hjemme-eksamen, ble litt for lik den innleverte rapporten til gruppen. Kunne kanskje vært utelatt?

General questions

- To what extent was the course motivational?



If this course was not a required subject, please say what motivated you to choose it.

-
- At my home University it's not possible to learn something about aquaculture.
  This was a good course to get an overview of the topic.
- Because we are in Norway, Aquaculture is important in this country so it allows to learn very interesting things about that
- never heard anything about aquaculture, but i was interested, something completely new
- I choose it because it was relevant to my education, and I think it is good to have more in depth information about fish farming
- The opportunity to be in touch and discuss, with norwegian students and others students and also have chance give them my perspective on thema.
- As my thesis will be in aquaculture , I wished to have a better understanding of the social and environmental impacts this industry has. Additionally, knowledge of how these systems have evolved and are (or are not) pushing towards sustainable systems and methods.
- I had very limited knowledge on the subject prior to this course and the topic seems to deal with a very current issue(also it is one of the most interesting courses offered to exchange students)
- I took into to aquaculture courses last semester and I wanted to learn more about the environmental impacts
- It fits very nice into the themes I`am currently working on
- I am interested in the topic
- I wanted to learn more about all sides of aquaculture. In many other subjects you hear how good it is and I wanted to see if it was as good as i have been lead to believe

- The reason I chose this course was because of the theme and the final exam at the end of the semester. I would not chosen this course if I knew it was going to be a class discussion, which I do not like.
- On of the reasons I chose this course was because the stated exam date(which obviously didn't happen) didn't collide with other exam dates. Again, had I known we weren't supposed to have a final exam, I would have chosen another course.
- our environment is the whole point. it is so important to learn what affects it and how we can improve it
- The general topic
- I liked the fact that the course emphasised on oral discussions. This is a challenge not found in many other courses, but mastering discussing biology is an important skill, so this was a positive aspect of the course.
- i thought it would be relevant to my thesis
- I have always been interested in the environment and wanted to know more about how the aquaculture affects the marine ecosystems.
- The course description was very interesting.
- to find out some truths about how aquaculture are affecting the environment.
- I had an "open slot" and because I study aquaculture/fisheries is was highly relevant for me. I also enjoyed it so much I feel that it would be natural to at some point integrate it into either the bachelors or masters programme within aquaculture as it is an important subject. I do think that I will encounter similar subjects further into my degree.
- Fint med alternative fag med litt annen vinkling og struktur.

What were the positive features of this course?

-
- All aspects of impact of aquaculture were discussed.
  In the discussions one could state his/her own opinion and get new ideas.
- The teacher was really nice and the topic of the lecture really useful.
- Teacher and guests, interaction between students and also with teacher
- discussions, content of the discussions
- It includes a very wide range of information regarding aquaculture, so it provides the student a very detailed and complete knowledge about the issue
- the learning methods
- A great spectrum of references showing current situation regerding thema. Active participation of pupils on the discussion.
- Discussion with fellow students and the rapid learning and gleaning of knowledge that occurred in these sessions.
- Audrey is a skilled lecturer and all lecturers had good knowledge of their subject. I also feel like I learned a lot and especially some of the discussions were very good
- Class discussion, exam format.
- That it gives you a broad perspective of pros and cons with different types of farming
- That the evaluation was from different things, and not just one exam
- It was very interesting, with alot of different topics. The lecturers were interesting to listen to. I liked that it focused globally on aquaculture.
- interesting and current topics (issues today)
- Interesting and current topics.
- i think all the features were positive
- It was general enough to have a global vision, and not on one country/continent. It's also a personal help in the though of the environment/consumption
- ....
- good overview of the problems globally, multiple lecturers, many examples
- I learned a lot about the effects of aquaculture! I have been a veggie for some time now, and now I'm even more certain that I'll never eat fish or seafood again :-)
- - Discussions
  - Broad spectrum of media
  - Different factors create one grade
- Many good discussions
- Aquaculture also has lots of negative impact. By doing this course now I have knowledge about aquaculture has negative impact on environment, human body which will be helpful in our real life.
- It is "hands on", you have participate to some degree, it's partially lead by the students and it also (seems) to be focused towards the good of the animals, although within realistic realms.
- Diskusjonsgruppene gir engasjement, selv om ikke alt som blir sagt er av fagelig høy kvalitet.

Were there any negative features of this course?

- Sometimes the papers for the discussion sessions have been handed out too late and/or have been too much to read.
- Take home exam too long or deadline too short
- the take home exam was much too long! for 2 days 10 000 is really not possible! please shorten it or give more time! espacially when you have to write it in another language... but the general idea of the take home exam is good i would like it, if it would be a little bit less
- The participation in the discussion classes required from different students different degree of effor, depending on how each person is, so the ones with less facility or confidence to talk were constrained in an important part of the course (as it means the 50% of the final mark)
- length of exam time, but otherwise good
- It woul better if the dscussion take place in other room. Positioning in a circle will improve the discussion.
- As previously stated , the home exam.
  In addition, perhaps the lack of intervention from the course professors and teachers during discussions. As at times, students leading the discussion seemed to lack the right questions or angles regarding the topic of discussion , rendering the discussion session possibly less fruitful.
- A lot of confusion regarding the different assignments. Some of the discussions felt a bit redundant because the topics were closely associated with each other and in the end it fel like we were just repeating a lot (of course not always a bad thing). Also 90 minutes is a bit too long for the discussions. Maybe you could have fewer topics and instead have each group give a 15-20 min presentation followed by a discussion
- NA
- The number of assignsments on the exam should be reduced to 4 instead of 5, or the time should been increased.
- To few lectures compared to discussions
- There were too many discussions and alot of people were not active.
- I´ve already told you in the previous questions.
- I've summarised the negative features in the previous questions.
- no
- Some lectures was not dynamic enough; sometime, a lot of repetition.
  Some discussions were less relevant than others.
- ....
- too few lectures, little depth, too much time wasted on discussions where few people participate.
- The discussion classes were a little long (compared to the content of the readings) and sometimes the literature for the discussions was irrelevant and bad.
- - Not enough feedback
  - A assignment of two pages creates 25% of the grade = 10,000 words exam creates 25 % of the grade -> Very unbalanced!!!

  Better: 25 % oral participation, 25 % assignment, 50 % exam
- I think some of the topics repeated themselves.
- Not to my knowledge, yet.

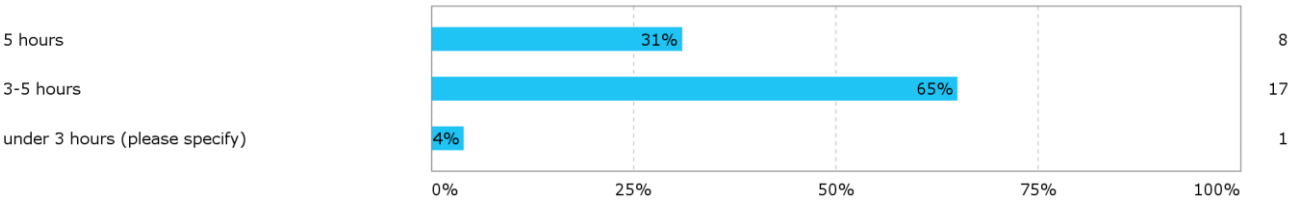
  I do feel that the home exam required too many words (10.000 / 2000 pr. question x 5) and I was nowhere near this. I felt that the home exam should focus more on the quality of the written words rather than length.
- Hjemme-eksamen ble alt for LANG i forhold til tiden som ble gitt til disposisjon. Dette går ut over kvaliteten på oppgaven.

Did you raise any concerns during the course and did you feel these were addressed?

- Yes because I'm erasmus student and I had poor knowledges about aquaculture but despite that it was interesting and didn't feel so "lost" that I expected
- didnt have any concerns
- no comments
- None , except possibly the confuse message regarding the length of the exam coming from both professors .
- Yes very helpful
- No i did not.
- pass

- pass
- it is difficult to talk in english whwn you are not so good performed but it is a good thing that you have to practise them
- /
- ....
- yes, no
- No, I had no concerns.
- I did not raise any concerns.
- ja, men hva en kan gjøre med det er en annen sak..

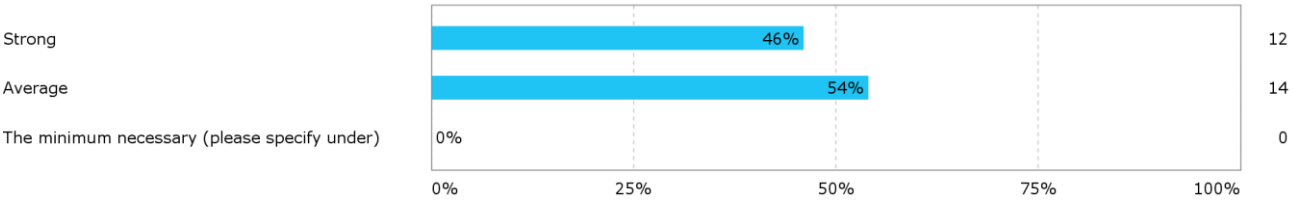
Please estimate the amount of preparation you did for this modules on a weekly basis:



If under 3 hours, please specify:

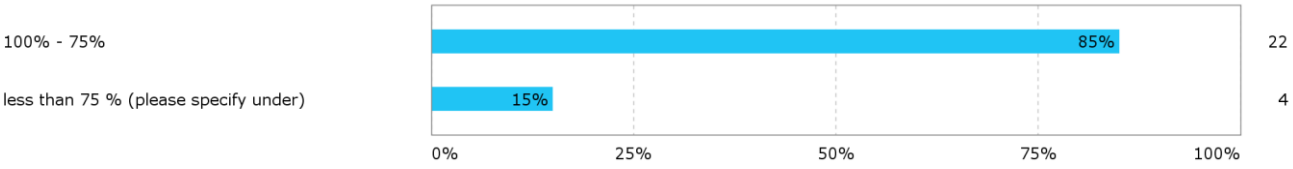
- more than 5 hours!
- Reading relevant references from my perspective and videos
- Just about 2-3 hours

Please estimate your commitment to this module:



If "The minimum necessary" is you answer, please specify:

Please give us an estimate of your attendance on the module. If less than 75% please indicate reasons:



If "less than 75%" is your answer, please specify:

- Owing to my attendance of a course at another University in the start of the term
- personal reasons
- personal reasons
- Some of the discussion classes came in conflict with exams and oral presentations in other courses.

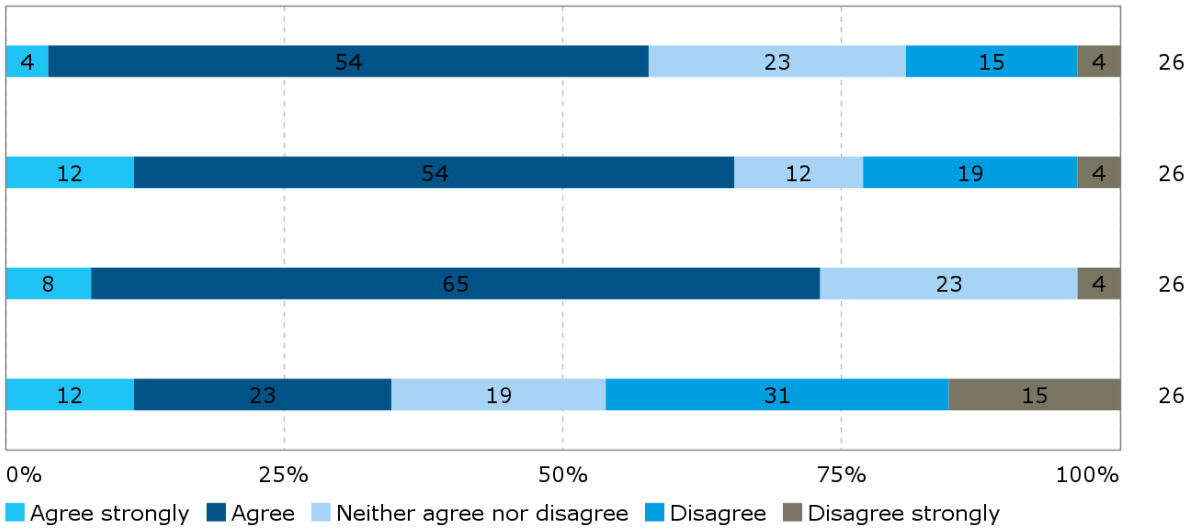
This is the first year that we have used a take-home exam for the final evaluation. We are very interested in your opinion of this examination method:

– The take-home exam was a suitable method to test my knowledge of the course material

– The take-home exam fit well with my schedule for the semester

– The take-home exam was well suited to the learning outcomes given in the course description

– I prefer to the take-home exam method to a normal 4 hour written exam



Do you have any further comments to help improve this course?

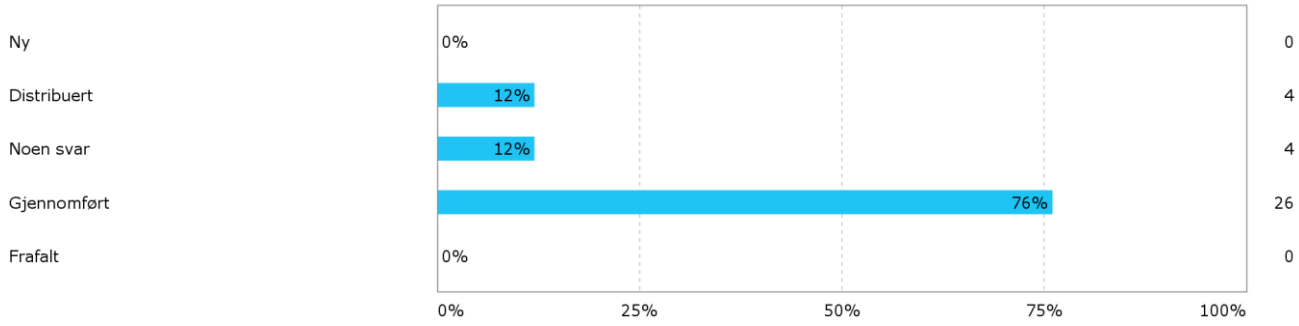
- Take-home exam: I think it's too much to have to write 10.000 words in two days. (2.000 words for one question are 4 pages!)
- Add another day to the home exam. I was not happy with only two days, and I am sure that my paper does not show my true potential.
- Move the lectures to a room that allow the students see each other (circle)
- None, except to thank the course leaders for a range of interesting topics as well as for setting up external lecturers from people working in the field itself
- 5 essys 2000 words each is a lot for a home exam. Either cut back on the questions or give more time.
- No I really enjoyed it.
- I felt that the exam were a bit large. Perhaps reduce the number of questions or the required size of the answers. Reduce the number of discussions and motivate people to be more active.
- About the take home exam: nice idea, but it was a bit too long... 2000 words/question for 5questions is too much!!
- the length of the take home exam was not specified. 2-3 pages is not the same as 2000 words... hard to understand what to focus on. 2000 words is too much work for a 2 day long take home exam when good sources are required.

  if you insists on discussions do it in small groups no more than 6-7 people, at least then people will talk together.
- I feel that the take home exam was a little bit too long compared to the time we had available. I actually had to spend every awaken hour of the two days to finish my answers, and I wasn't even close to the guided 2000 words per question.

  Other than that: Audrey, you are awesome.

- I have one comment, I liked take home exam. But course content mentioned we had to write 2000words for each question that means we had to write 10000 words within 40 hours.It was difficut to fulfil word criteria.

Samlet status



Report on BIO 308 - Early Life History of Fish 2014

This course was run for the first time, starting in August 2014. Five students registered for the course, but the ideal number would be 10-15. It evolved as a combining of two previous larval fish courses - BIO 338 and BIO 305. The intention was to combine theoretical and practical aspects together in a single course, enabling students to understand major research advances in larval fish ecology together with learning the skills necessary for experimental work with fish larvae. These learning outcomes were the focus of the various class activities: lectures, student-led seminars, and practical work to collect data from an ongoing experiment with herring larvae. There were 20 lectures, which covered topics from development to physical factors to recruitment mechanisms, and which were based heavily on relevant research papers. Each student was also responsible for selecting a research paper and leading a seminar based on this paper. Since 12 seminars were planned, each student had two seminars to lead. The papers from the lectures and the seminars constituted the pensum for the course; there is no textbook available for this topic so several books were listed as suggested background reading. Laboratory activities were designed around an ongoing experiment to produce hybrids of Baltic and Atlantic herring and test their growth responses to different salinities. Students were assigned to participate in the daily routine of larval rearing, so that they learned how to handle live prey and feeding, how to monitor tanks for environmental conditions and prey densities, and how to maintain a laboratory population of marine fish larvae. This required extra hours -approximately 2h per week - for each student, in order to perform the maintenance tasks. The scheduled laboratory activities were held in two 4-hour blocks in weeks where seminars were not scheduled. The laboratory activities were designed to have students learn and master the skills of collecting data from larval rearing experiments: sampling larvae, photographing and weighing them, extracting otoliths. The students learned basic steps in image analysis, data handling and interpretation - all using material that they produced during the course activities.

Overall the course seemed successful in achieving the original aims. Several issues arose during the course and these were especially challenging:
1) the small class size meant that each student bore a heavier workload than expected. For the practical work, we had anticipated that the students would work in pairs and benefit from each other's support. With only 5 students, this did not work.
2) the students were not well prepared in basic scientific tools; in particular they were weak in quantitative skills and quantitative thinking, and they were inexperienced in keeping a laboratory journal or writing laboratory reports.
3) the students were inexperienced in “learning by doing” – by which we mean that they were accustomed to saving all the material to study at a later date when preparing for a final examination. For a so-called “skoleexam” this may be a good strategy, but since we are helping students to achieve life-time skills at learning, they should be shifting to more continuous work in each course, to keep up with the material.

The small class size was also a challenge for developing a good discussion during the seminars, and impaired the whole class dynamic. Our target for class size is 10-12, maximum 15 students, which we believe, based on experience in the previous courses, will generate the most energetic and constructive atmosphere. The low student numbers are mostly the result of timing: BIO 305 was last taught in spring

2014, and BIO 338 in autumn 2013 – therefore there were fewer potential students for this first time.

It must be stated that our greatest challenge in this year has been the level of preparedness in the students. It was clear from the student discussions in the last weeks of class that they had difficulties especially with quantitative skills, and felt that our expectations of them were too high. The course is aimed at semester 1 masters, those who will be doing experimental work or field work for their thesis. We planned the activities to integrate with and to complement the building of skills and capabilities in BIO 300. We hoped that our emphasis on keeping a lab journal (part of the course evaluation), collecting and working with data, critical reading and interpretation of data – these would all reinforce what was going on in that course. We hoped, in particular, that students would take advantage of the statistics training with R that runs concurrently during BIO 300. We did not achieve the expected synergism that we wanted to, and we need to take steps to discuss with BIO 300 leaders how to improve the reinforcement of learning activities.

To improve the course next year, we plan to revise the laboratory activities to ensure that students begin to collect and process data earlier. We plan to develop a more specific course pensum to allow for more freedom in introducing new topics in the lectures and seminars. We will also advertise more widely to attract more students with a wider motivation.

Being held in the autumn semester, we also suffered from collision with other field courses, and as always, the interruption due to other lab and field course activities in other courses make the planning and follow up of the course challenging and sub-optimal.

On the positive side, the merging of the two previous courses and collaboration between teaching staff has provided new opportunities for constructive discussion of the course content and style, and we expect the scope of improvement for next year's course to be more easily achievable.

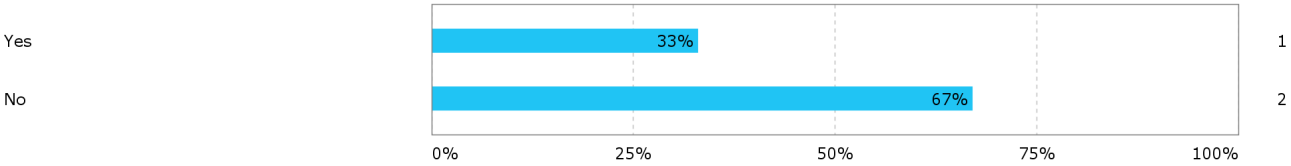
Bergen, 15. Jan. 2015,

Arild Folkvord & Audrey Geffen

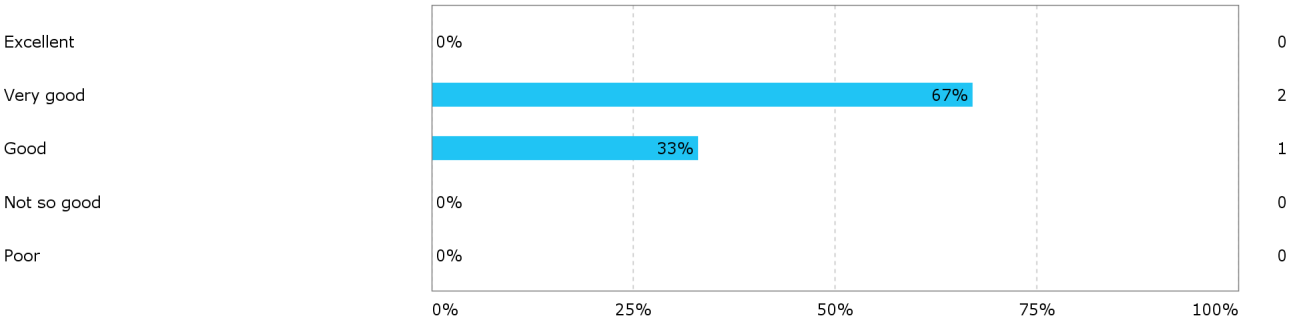
Attachment: Report from student evaluation of BIO308

Student evaluation of BIO308 Autumn 2014

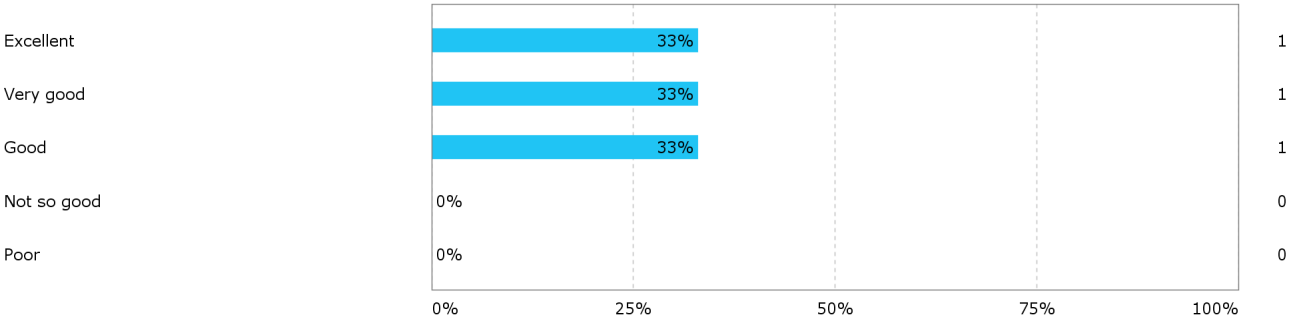
1. Do you feel that you were sufficiently prepared for this course?



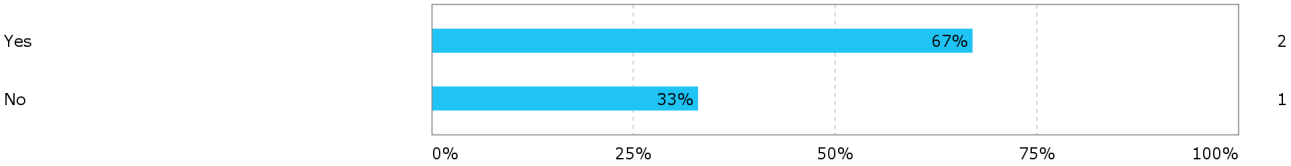
2. How do you rate the lecture content?



3. How do you rate the lecture presentations?



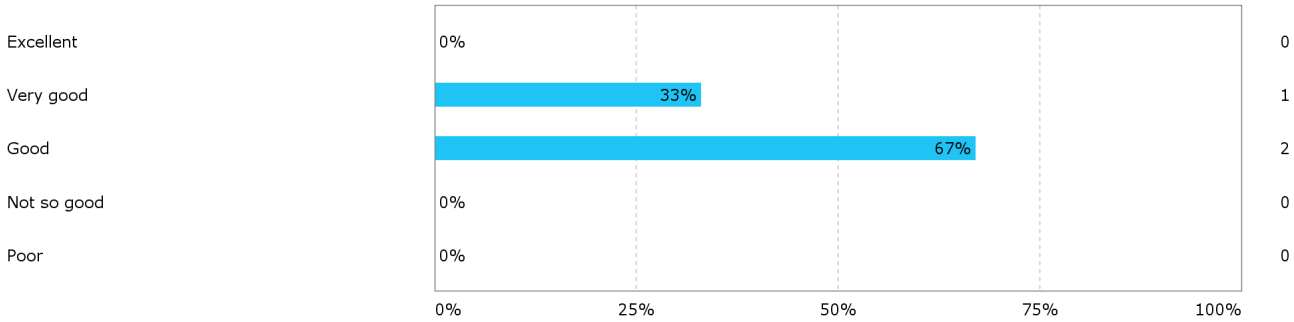
4. Was the course material clearly communicated?



Any comments to this section?

- Sometimes a bit abstract, but no problem as the lectures were more like a conversation, with two way dialog.

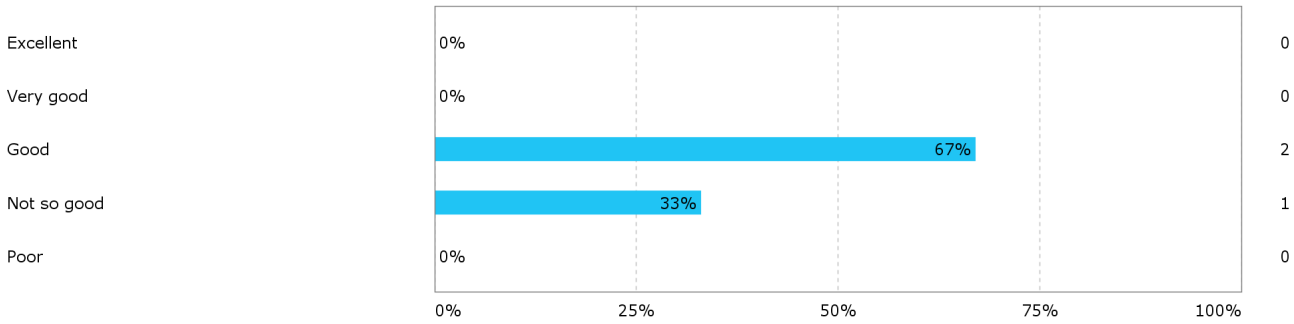
5. How do you rate the seminar activities?



6. How can we improve the classroom experience?

- Great with dialog between lecturers and students.
- it's good

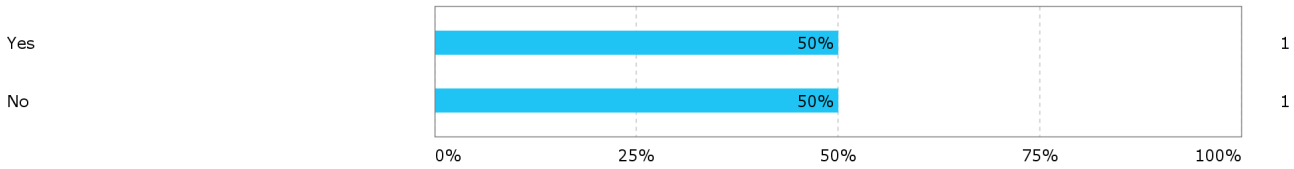
7. How do you rate the practical activities?



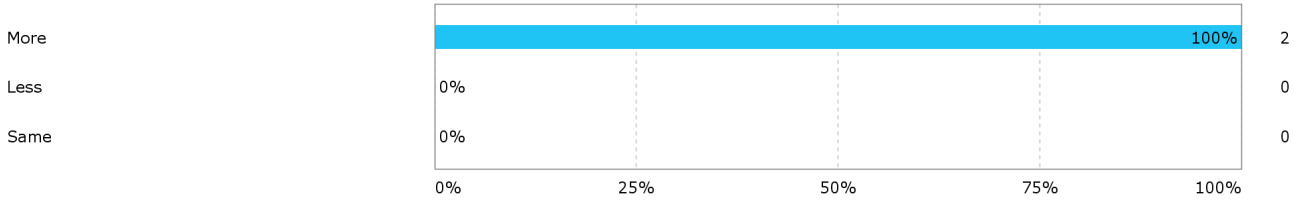
8. How should we improve the practical experience?

- To increase the routine and practical experience, it might be helpful to let students have responsibility of a whole week, instead of once a week. Some things are forgotten if only done once a week.

9. Were you satisfied with the balance between lectures, seminars, and practicals?



10. How did the workload in this course compare to others of 10 ECT?



11. What was the most problematic aspect of this course?

- writing two reports and 2 seminars is too demanding.

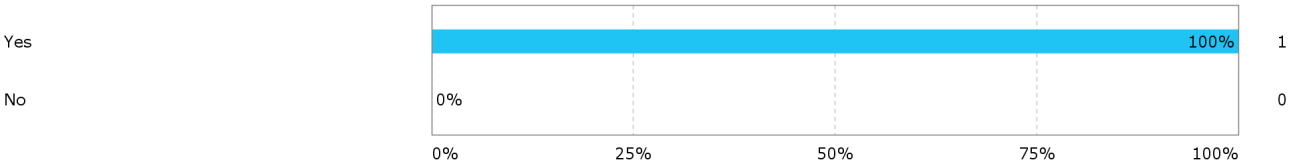
12. What was the most positive aspect of this course?

- seminars and lab work

13. What were the most important things that you learned?

- Presentation and report writing.

14. Did this course meet your expectations?

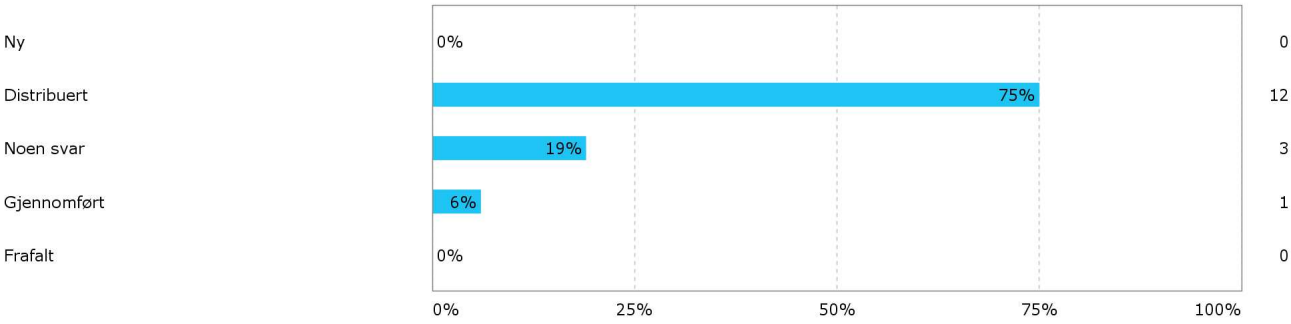


15. Please comment on how well this course integrated with other courses you took this semester

- It had aspects which were related to my other courses.

16. Any other comments?

Samlet status



Evaluering av Bio382 Akvatisk matproduksjon

Kristin Hamre, Karin Pittman og Audrey Geffen

Master i Havbruksbiologi har vært etablert siden 1980-tallet. I forbindelse med at Masterprogram i Ernæring ble utelatt fra studietilbudet. ble det behov for en utvidelse av masteremnet i Havbruksbiologi til å inkludere ernæring og matproduksjon. Etablering av Bio382 er et svar på dette.

Kurset er på 10 stp og er nytt av året. Det var 8 studenter som tok kurset, alle masterstudenter i Havbruksbiologi, 6 var norske, en var fra Bangladesh og en fra Eritrea. Flere hadde bakgrunn fra oppdrettsnæringen. To PhD studenter fra Storbritannia deltok også på mesteparten av kurset.

Innhold i kurset

Det har bestått av 13 doble forelesninger; 3 ekspertpanel med eksterne eksperter innen næring, forskning og forvaltning; og 3 Oxford style studentdebatter.

Forelesningene kan grupperes i følgende tema: Kvantitativt om mat fra havet, ernæringsverdi av fisk og sjømat, produksjonsmetoder i akvakultur, fiskeernæring og tilgang på fôrressurser, kontaminanter, produksjon på lavere trofiske nivå, bærekraft. Foreleserne hadde spisskompetanse på sine tema.

Panelene ble organisert med 5-6 inviterte eksperter med ulike ståsted som hadde en 10 min presentasjon av sin posisjon i forhold til et aktuelt tema. Deltagerne ble oppfordret til å kommentere underveis og være åpne for spørsmål. Deretter var det diskusjon.

Oxford Style studentdebatter ble satt opp over utvalgte tema. 2 grupper a 2-3 studenter fikk i oppdrag å argumentere enten for eller imot en gitt posisjon. Studentene skulle på forhånd ha lest seg opp på emnet og ha forberedt innleggene sine, noe som skulle dokumenteres ved innlevering av en referanseliste.

Det var også ekskursjon til Blom visningsanlegg i Øygarden.

Evaluering:

2 essay, et selvvalgt og ett pålagt tema
Studentdebatter
Generell deltagelse

Karakterene lå på B og C

Studentevaluering

Studentene har ikke fylt ut evalueringsskjema, men har gitt muntlig tilbakemelding ved to anledninger.

Studentene var stort sett fornøyde med forelesningene, både valg av tema og forelesere, men ønsker en mer internasjonal profil på forelesningene om produksjonsmetoder i akvakultur. Her hadde vi satset på norsk akvakultur og brukt forelesere fra næringen, så mye ble sentrert om laks. Vi hadde også en diskusjon om i hvilken grad man skulle inkludere villfisk og fiskeriene, siden faget sånn som

det er nå kan gi et skjevt inntrykk av at akvatisk matproduksjon hovedsakelig er akvakultur. Dette må vurderes i forhold til at faget allerede er veldig bredt. Det ble etterlyst å knytte pensumlitteraturen mer opp mot forelesningene. Antall forelesninger ble vurdert som passelig, selv om man godt kunne hatt noen flere.

Studentene sa at essayene var en uvant form for skriving. Selvvalgt tema gjorde at de fant ut temaene måtte snevres inn fordi det var mye å sortere gjennom. Pålagt tema var lettere.

Studentene var svært fornøyde med studentdebattene og paneldebattene. Dette var en form som de ikke hadde erfaring med fra tidligere og som gav dem utfordringer, for eksempel må man ha et aktivt forhold til stoffet for å kunne argumentere og formulere posisjoner.

Noen av paneldebattene hadde en ganske høy temperatur, noe som opplevedes som spennende. Studentene var tilbakeholdne i begynnelsen, men kom mere med i debattene utover i semesteret. En negativ faktor var at 6 stk 10 min foredrag på rad i paneldebattene kan være mye, særlig når foredragsholderne ikke holder tiden.

Forslag til videreutvikling

Vi vil prøve å samle kurset i 3 tema, der vi først har forelesninger, med litteratur knyttet opp til dem, deretter essay med (innsnevret) pålagt tema , en studentdebatt og tilslutt kanskje et ekspertpanel. En utfordring med dette kurset er den store bredden, så denne strategien vil gjøre at vi i større grad kan samle trådene. Panelene kan organiseres uten å være helt bundet av kursets tema, sånn at man kan ta opp tema som er mer dagsaktuelle. Det vil bli lagt energi i å holde tiden for innlegg og kanskje dele opp debattene sånn at man tar noe av diskusjonen mellom innleggene. En annen mulighet er å ha færre paneldeltagere for hvert tema. Vi vil vurdere å åpne paneldebattene for andre enn de som tar kurset.

Vi vil prøve å få en mer internasjonal profil på forelesningene om oppdrettsmetoder og vurdere å ta med mer om villfisk.

De nye undervisningsformene, med essay og debatt, er svært godt mottatt av studentene og de sier de får en dypere læring og aktivering av kunnskap.

EXPERT PANELS:

Date	Title	Participants
13.10	Global food production; nutritional challenges and potential role of seafood	Bjørn Axelsen (IMR) Eystein Jansen (Bjerknes senter) Kristin Hamre (NIFES) Anders Goksøyr (BIO) Amund Måge (NIFES)
27.10	Traditional and novel feed resources for aquaculture, nutrients, antinutrients, contaminants and sustainability	Bente Torstensen (NIFES) Ernst Morten Hevrøy (EWOS) Jeppe Kolding (BIO) Andreas Nordgreen (Norsildmel) Erik-Jan Lock (NIFES)
10.11	Aquaculture and the environment	Gro vd Meeren (IMR) Geir Lasse Taranger (IMR) Tony Koslow (Scripps Oceanographic) Tina Kutti (IMR) Petter Arnesen (Marine Harvest)

Objectives of the Course (from http://www.uib.no/en/course/BIO382)

BIO382 Objectives and Content

The aquatic environment covers about 70% the globe and is central in today¿s discussion on increased global food production. The challenges are both to produce enough food from well treated organisms and food with a good composition of nutrients. This course will give students a state of the art insight to how aquatic food production has global impact on food access and the environment and discuss the future potentials for growth. It will use a combination of selected scientific articles, interdisciplinary expert panels with outside guests, and Oxford-style student debates to elucidate key aspects of seafood production and nutritional value.

The aim of the course is to disseminate knowledge about the composition of seafood in relation to the global nutritional challenges; under nutrition, over nutrition and malnutrition, and how nutrients and contaminants are transported in the man-made food chain developed for aquaculture. We will discuss the sustainability of traditional and novel feed resources, which resources are limiting and which ingredients can supply the needed nutrients for the cultured organisms and for the people who eat them. Environmental effects of aquaculture, effects of climate on aquatic farming and the future potential of fisheries and aquaculture to contribute to the global food production will be discussed.

OXFORD-STYLE DEBATES: A SHORT OVERVIEW

-modified for BIO382

NOT a discussion or a seeking of concensus but a competition to win over the audience

"Oxford-Style" debate is **a competitive debate format** with a clear statement that is proposed by one **2-person team (YES-team)** and opposed by another **2-person team (NO-team).**

A winner is declared in an Oxford-Style debate by audience vote. The structure is as follows:

- The formal structure which **begins** with audience members casting a pre-debate vote on the motion that is either for, against or undecided.
- Each team presents a **five-minute opening statement (1st person)**
- This is followed by each team's **2nd person delivering a (max 5 minute) response** or rebuttal to the arguments presented by the opposition
- Then there is a 2 minute regrouping while each team composes their closing points
- Finally, each team delivers a **three-minute closing argument (one of the two members of each team)**
- The audience delivers their second (and **final) vote** for comparison against the first.

While the arguments are based on factual information, the delivery of the arguments does not hold strictly to "logos". Style: factual, funny, emotional, pathetic, extreme (but understand what you are doing and hearing!)

- Ethos is an appeal to ethics as a means of convincing someone of the character or credibility of the persuader.

  Example: "If his years as a Marine taught him anything, it's that caution is the best policy in this sort of situation."

- Pathos is an appeal to emotion and used to convince an audience of an argument by creating an emotional response.

  Example: "You will never be satisfied in life if you don't seize this opportunity. Do you want to live the rest of your years yearning to know what would have happened if you just jumped when you had the chance?"

- Logos is an appeal to logic, and is used to persuade an audience with reason or facts.

  Example: "Research compiled by analysts from NASA, as well as organizations from five other nations with space programs, suggests that a moon colony is viable with international support."

REMEMBER THE AUDIENCE DECIDES THE WINNER. WIN OVER THE AUDIENCE TO WIN THE DEBATE.

GUIDE FOR BIO382 WHAT IS AN ESSAY?

slightly modified from:

http://classroom.synonym.com/characteristics-essay-4662.html;
http://www.studienett.no/Oppgaver/Essay-oppskrift-6664.aspx;
http://en.wikipedia.org/wiki/Essay

på norsk:

Kort sagt handler det i essayet om at du skal tenke så det knaker og anstrenge deg for å få klarhet i det emnet som du er stilt overfor. Du skal begrunne og dokumentere så godt du kan, finne eksempler og moteksempler – for til slutt å se hvor du ender.
Der skal med andre ord "skje noe" i et godt essay. Rent konkret betyr det at du i første delen av essayet skal forholde deg til teksten/tekstene fra oppgavesettet. Du skal finne det sentrale i tekstene ved å analysere og fortolke dem. Selve analysen skal riktignok ikke legges frem i essayet, slik som man gjør i en analyse og tolkning, men for at du skal kunne ta utgangspunkt i tekstene, er det viktig at du selv har forstått dem, og det gjør du best gjennom en analyse

Det norske essayet prøver ut en original tanke eller en spesiell synsvinkel på en sak, men behandler temaet saklig. I motsetning til artikkelen trenger imidlertid ikke essayet å se saken fra så mange sider, men man kan velge å forsvare en subjektiv mening ensidig.

In English:

An essay is a composition that defends a position or opinion, also called a thesis, that has been put forth by the author. Not only should an essay demonstrate your overall knowledge of the broader subject, but it should demonstrate your insight into particular aspects of that subject. It also should show that you performed extra and relevant research outside the course material to broaden your understanding.

Narrowing A Topic: Picking a topic out of a broader subject can be difficult. Pick a topic you can explore fully, without picking one so broad that you try to cover too much information or one so narrow that your writing and research options are limited. It can help to come up with some topic options and review them with your professor. Many professors provide a list of topics for essays just for this reason.

Thesis Development: You must develop a strong and clear thesis offering some original insight. Your thesis should be a complete statement of your position in one or two sentences, including information on how you will defend your position *if you have taken one*. Reading essays and picking out thesis statements will help you identify and compose your own. You can always ask your professor to review yours and offer suggestions. Your thesis does not have to be fully formed at the beginning of writing and researching. Writing and researching it will help you develop it.

Write On Topic: How much you can cover will depend on the size of the essay, but regardless of the length, you should always write concisely and on topic. A standard 1,500-word essay (usually about 3 pages), for example, will generally accommodate three to four paragraphs, *not including the introduction and concluding paragraph*. Each paragraph should have its own topic that relates to and supports your thesis. You should have no more than one or two quotes or paraphrased statements in support of your position, not in place of your own thinking. Quotes and paraphrasing must have proper citation.

Introduction and Conclusion: Your introduction should introduce both the broader subject and your specific topic. An introduction should engage the reader, prompt him to keep reading and **briefly describe how you will develop your topic**. Your thesis statement will come in the last lines of the introduction. **Your concluding paragraph should briefly recap your subject, your thesis and how you defended your thesis**.

How BIO382 Essays are graded:

On a sliding scale from A to F where the sum of objective points gives the grade.

20 points- Introduction – clear statement of the topic, how it relates to the course (or you) and which aspects you want to focus on. Clear statement of the intended approach to explore the topic and what will be emphasized. What do you expect to find?

40 points- Main text –paragraphs with clearly described relevant topics, well referenced. The facts must be correct and cited. Each paragraph contextualizes the information in relation to the topic of the essay. The text covers the relevant facts of the topic. Well written, no spelling or grammatical errors (what is spellcheck for?) and *no unsubstantiated statements*. Generalizations or "received wisdom" must be critically examined.

20 points Conclusions – clear statement of what the previous text has brought to light *including what has not been investigated* (either by you or by the literature). State whether your initial impression of the topic (from Introduction) has been supported or undermined by the research. State what you think seems to be the next step in looking at this topic.

20 points References – all properly cited and in the same consistent format (eg Harvard style or similar). All references are mentioned in the text and all text references are found in the list. *Papers cited in a review article use the review article as the reference.*

Karin, Kristin and Audrey

Oct 29, 2014