

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 Penum, 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.

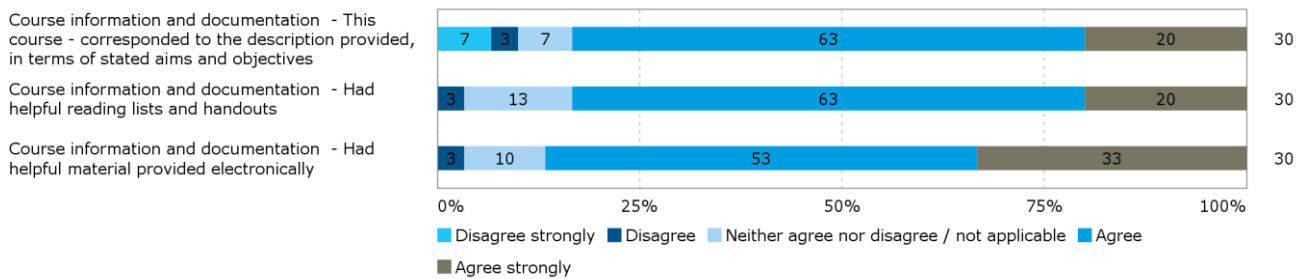
A survey was sent to students just after the take home exam was finished, but before the final deadline for all written work. The final official course list showed 42 students, but 3 of these did not take the exam. These 3 are

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.

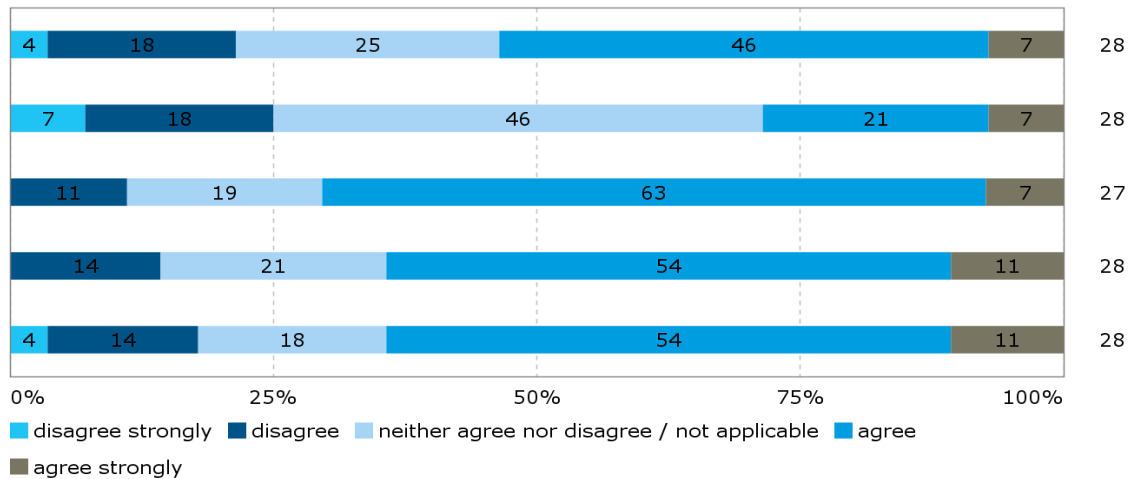
Again, we were criticized for lack of clarity in the evaluation criteria, even though this was communicated clearly on the course home page (miside). The plan to move to a broader teaching team will help because all of these decisions will need coordination and much earlier meetings – well before the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

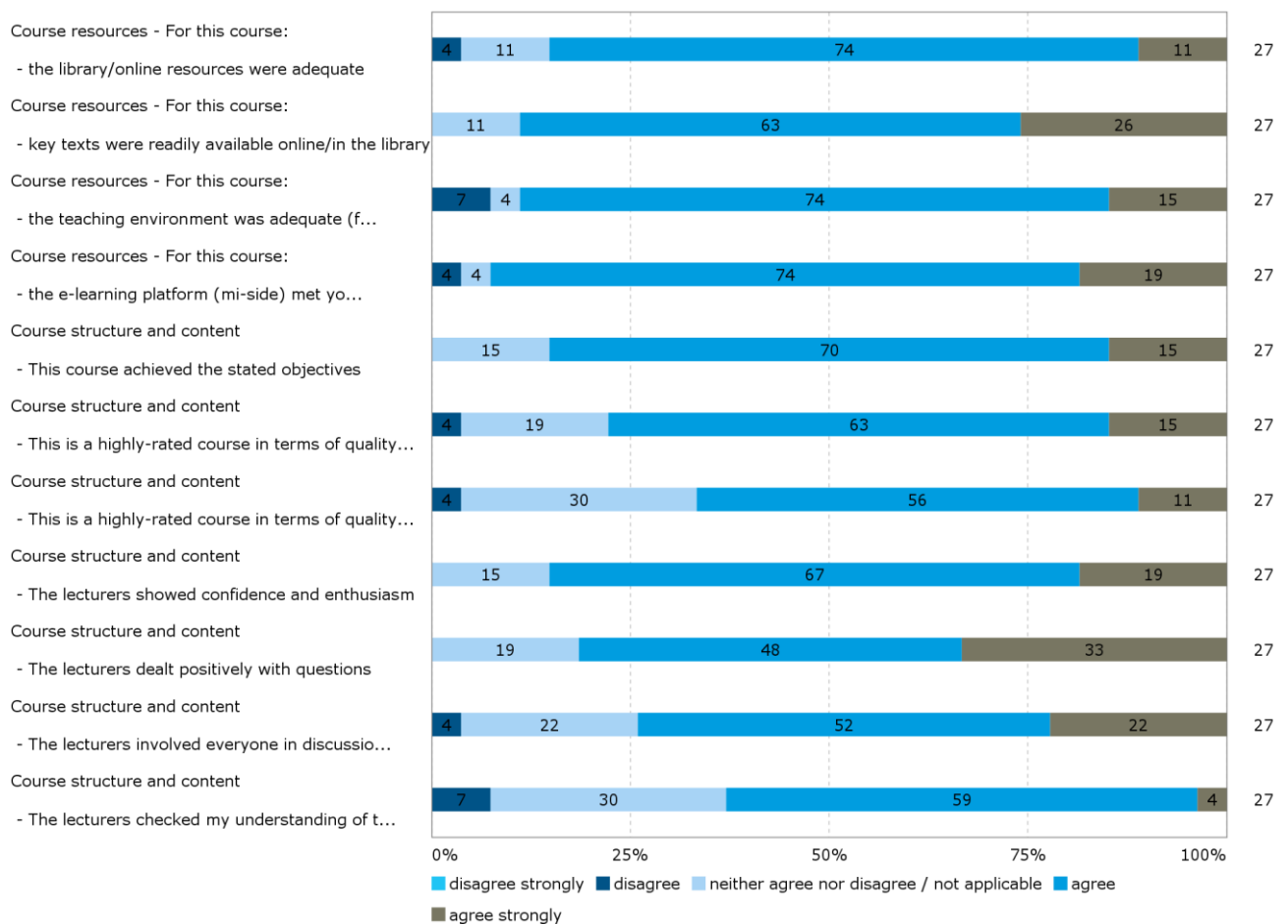
### Results of the student survey (75% responding)



### 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 aquaculture.
- 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 participant
- 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?

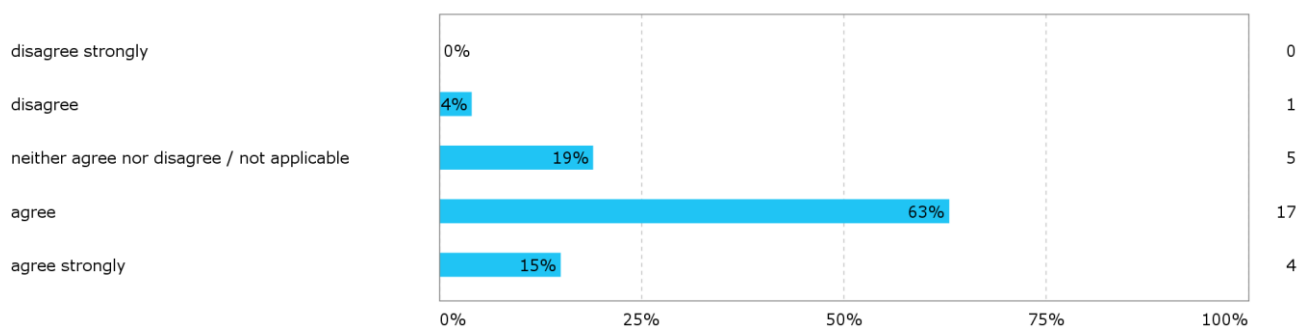
### What was the least beneficial section, and why?

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- There were really too much paper to 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 very 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 unnecessary 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.

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- 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 have chosen this course if I knew it was going to be a class discussion, which I do not like.
- One 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 aquaculture affects the marine ecosystems.
- The course description was very interesting.
- To find out some truths about how aquaculture is affecting the environment.
- I had an "open slot" and because I study aquaculture/fisheries it 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?

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- 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 regarding the theme. Active participation of pupils on the discussion.
- Discussion with fellow students and the rapid learning and gaining 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 a lot 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 thought 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! especially 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 effort, 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 would be better if the discussion took place in another 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 felt 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 assignments on the exam should be reduced to 4 instead of 5, or the time should be increased.
- Too few lectures compared to discussions
- There were too many discussions and a lot 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 were 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.

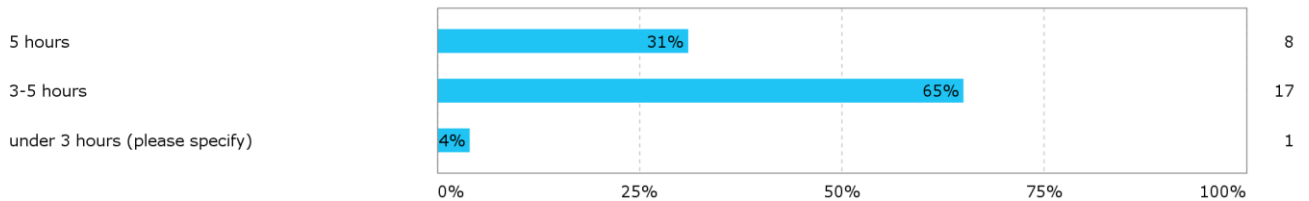
- Hjemme-eksamen ble alt for LANG i forhold til tiden som ble gitt til disposisjon. Dette går ut over kvaliteten på oppgaven.

## 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 knowledge about aquaculture but despite that it was interesting and didn't feel so "lost" that I expected
- didn't have any concerns
- no comments
- None, except possibly the confusing 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..

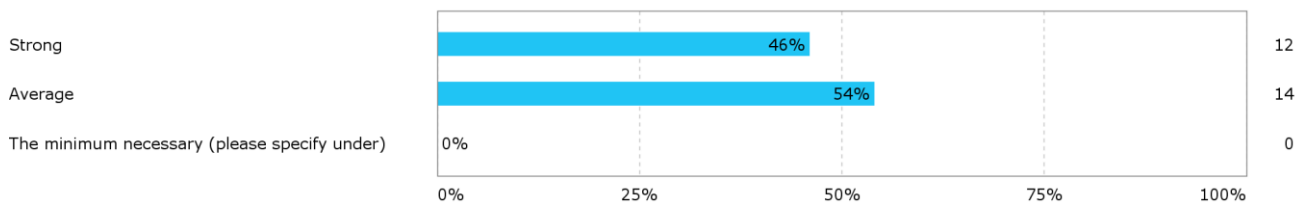
Please estimate the amount of preparation you did for this modules on a weekly basis:



If under 3 hours, please specify:

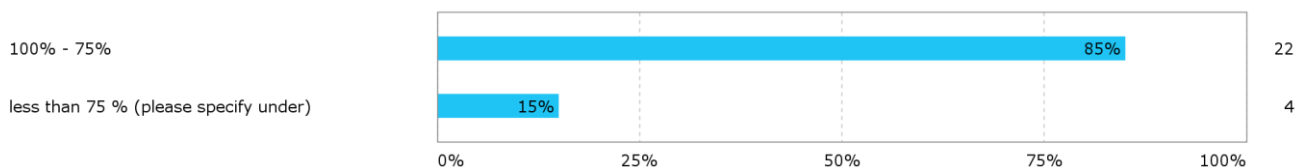
- more than 5 hours!
- Reading relevant references from my perspective and videos
- Just about 2-3 hours

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:

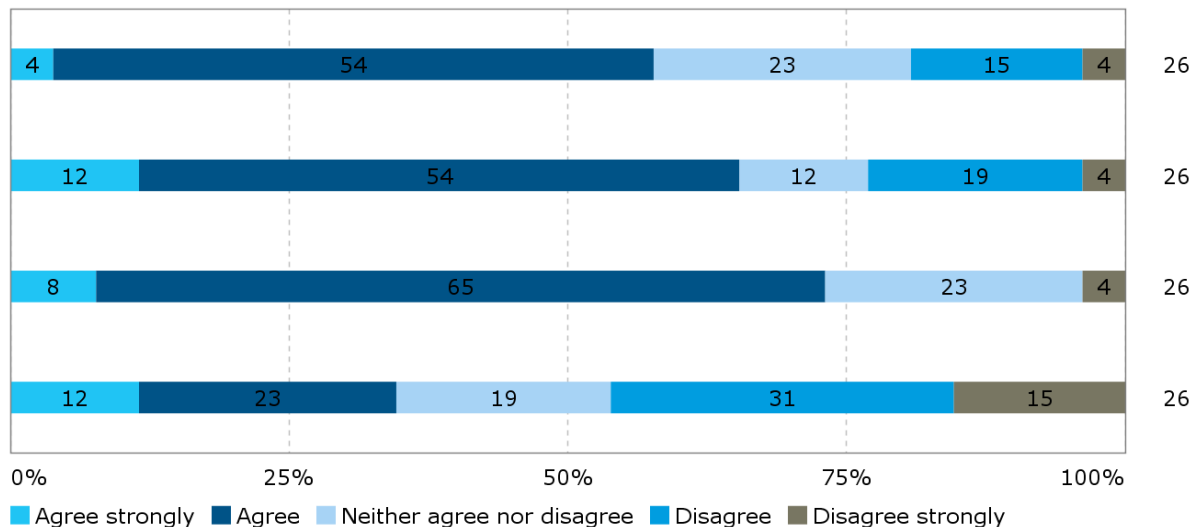


If "less than 75%" is your answer, please specify:

- 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 essays 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 difficult to fulfil word criteria.

## Samlet status

