

## Course report BIO 300A - Academic writing Autumn 2021

### **Learning outcomes**

After taking this course the students should be able to:

- write a master thesis in the IMRaD format
- ask a research question, formulate hypotheses, collect relevant data, and make figures
- write scientific text with flow and style, and critical use of core scientific literature
- present a research project in relevant formats
- work with peers to improve a draft text

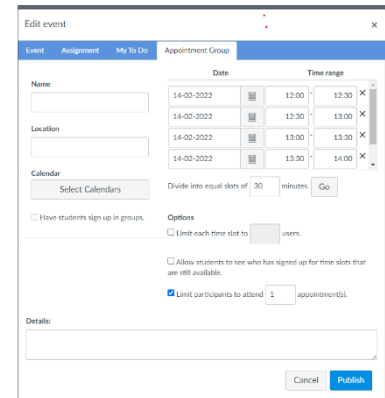
### **Course design to achieve the learning outcomes**

First, I briefly present the course design, and show the front page of the course in the learning platform ([Appendix 1](#)) –which is the information that students get as they start the course. It first shows the learning activities and the assessment, then the time schedule of the course, how the learning activities (class meetings, modules, assignments, feedback, group projects) are organized.

In short, the course contains 12 themes in modules (MittUIB) – the content relevant to academic writing in general and to a master thesis in particular. We presented the modules in weekly seminars on Zoom. The main project for the students was to write an IMRAD paper, with the chapters Material and methods and Results (including two figures) is a group project while the rest is individual writing. The students had to agree on a research question in the group and then find data, produce graphs and do a simple analysis to answer their research question. They also presented the results at the [BIO-poster day](#) either as posters or in an oral presentation, and we strongly encouraged students to submit their final papers to the new student journal Bikuben – and take the opportunity to add items to their CV during their studies.

## Assessment and feedback loops during the course

Feedback is an essential element of a writing course. First, we had 4-5 teaching assistants, PhD-students, which helped with the feedback. Throughout the course, we set up **meeting times** for the groups to discuss their project with TAs and teachers. We did this in the calendar function of MittUiB – the ‘Appointment group’ (insert right) where students could sign up for Zoom-chats with us in the time slots we set up. This is a very practical tool for communication with students and gave possibility for continuous follow up of groups and individuals through the whole online course duration.



We included **one written feedback loop on the main assignment** – students could submit a draft version of the paper halfway through the course and get written and detailed feedback from the TAs. With over 100 students in the course, we had to assign one TA to each group while the main teacher could only oversee the commenting. The TAs worked quite intensively with feedback during the two weeks after the submission deadline -and provided detailed feedback in-text on the submitted drafts.

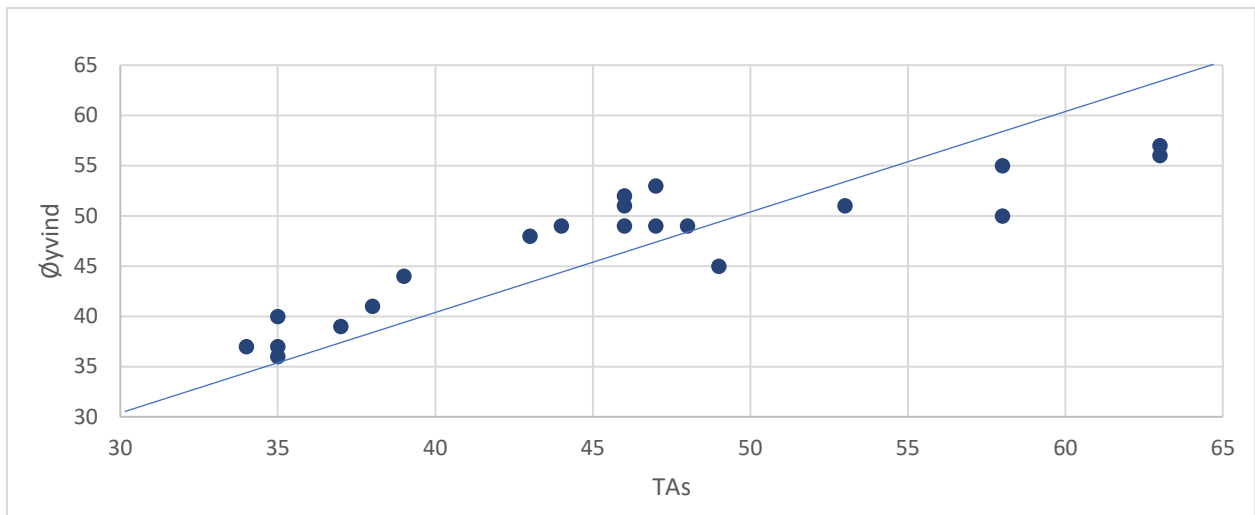
At this stage **each student that submitted a draft peer-reviewed two other student papers**. The peer-review was an element in the assignment – and consequently practically all students submitted drafts for feedback and peer-review. The peer review assessment followed a set of rubrics ([Appendix 3](#)) which also gave students immediate verbal feedback in the learning platform.

During the [Poster day](#) students presented their questions and results, and they got feedback from the audience and a score included in the assessment from the teachers. The assignment and rubrics are shown in [Appendix 4](#).

The main assignment was the final IMRAD paper – after peer-review, written comments and discussions in the online sign-on sessions. See [Appendix 5](#) for the assignment and rubrics.

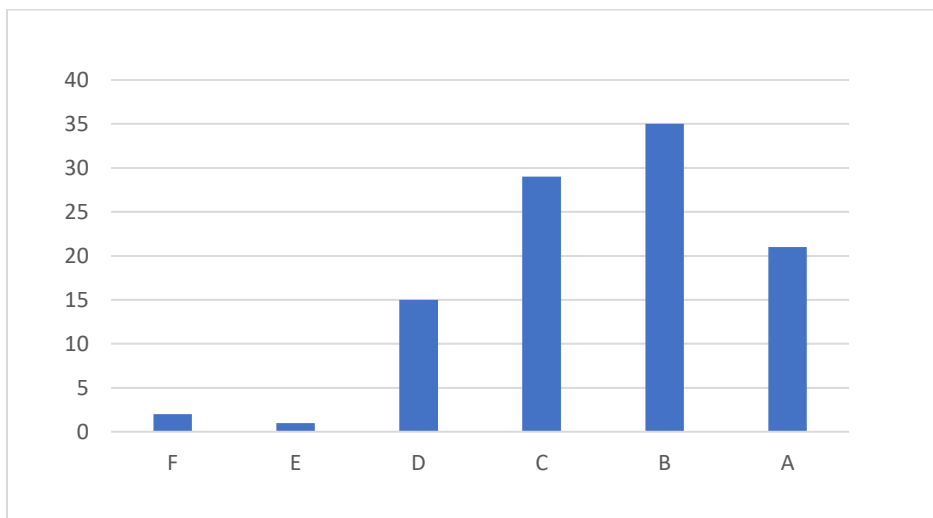
The scores in the final paper, the peer-reviews, and the presentations were summed to produce the final grade. **Before we set the final grade, we invited all students to sign up individually (with Appointment groups in early January) for a discussion around the scores.** More than 10% of the students participated in these final discussions, and they were very useful. Students pointed out where they did not understand the reason for their scores, and either this was explained, or the scores adjusted if this was reasonable. These talks were educational for both teachers and students – and we had no complaints on grades in 2021 or in 2020. This is quite unusual in a course with more than 100 students, and probably this final discussion is a key reason for that.

An interesting exercise we did was to compare the scores on the final reports between TAs and between TAs and the main teacher (Øyvind Fiksen). Here is the correlation where we overlapped our assessments:



This correlation is very good given the differences between the assignments in terms of topics, data and analysis they did in their papers. Also the average scores were very similar between TAs and TAs and teacher.

The final grading:



### Constructive alignment in the course?

The main assessment products (paper, peer review, and the presentation) should motivate students to try to engage with the learning material presented in the modules and elsewhere, and to work constructively with their peers. It does take time to master all the elements in academic writing, and while the quality and efforts varied quite a bit between the groups – we saw many very good papers and presentations coming out of the course. Given the 5 ECTS (130 hours work in total) level of the course, our impression is that learning goals are met to a large extent.

### Student evaluations

During the course we asked two groups with students from the Teachers programme to act as ombudsman – where other students could message anything to the teachers. We had no direct messages coming this way, but it was interesting to have some discussions on the course design with these students.

After the students had their final scores, we sent out an open anonymous evaluation form, and the students voices are listed in [Attachment 6](#).

### **Improvements for the future**

The integration of BIO300A and B improved a bit this year, but ideally the two courses should be one. Then the handling of data, statistical analysis and figures could be an integral part of BIO300B, and BIO300A could concentrate more on the writing part and all the needs master students have in order to succeed.

The course really needs good and motivated TAs (which has been the case the last years) and they all did an excellent job in commenting on texts and graphs and tutoring the students.

The goal of a course like this should be that students end up with concrete evidence of craft and skills such as a research paper and a poster they can add to their CV and show to future employers as examples of their competence. A closer collaboration with the student journal and a shift to pass-fail grading could be ends towards this goal. A pass-fail grade could involve a step-by-step feedback loop where the quality of the products has to reach a certain level before the course is passed.

## Appendix 1. Course design - the front page of the course

Our first meeting is, as you see in the calendar, Monday 23rd of August at 14:15 in the Auditorium at VilVite!

The weekly seminars will be online, on Wednesdays 10:15 on Zoom. We plan to make this course fully online to ease the logistics of a course with all master students at BIO and because this is practical for a writing course - but you should of course meet in person with your group as much as you want.

In this course, you will write a short paper where you try to answer a simple research question. You find the question, some relevant data to plot and a result chapter with your group - and then write the other parts of the paper individually. Maybe the paper can be published in BIO's student journal [Bikuben](#). This can be a valuable product on your CV.

Below is an overview of the main elements in the course. They appear through the semester, so you do not see all modules yet.

Learning activity	Type	Draft due	Feedback	Final due	Assessment	Weight
<a href="#">Find question &amp; data</a>	Group	September	Tutorials			
<a href="#">Write an introduction</a>	Individual	Mid October	Peer review Tutorials, rubrics	Early Dec	<a href="#">Final paper</a>	25%
<a href="#">Material and methods, figures &amp; results</a>	Group	Mid October	Peer review Tutorials, rubrics	Early Dec	<a href="#">Final paper</a>	30%
<a href="#">Discussion, title &amp; abstract</a>	Individual		Tutorials, rubrics	Early Dec	<a href="#">Final paper</a>	10%
<a href="#">Poster session</a>	Group		Rubrics	Late Nov	<a href="#">Poster</a>	15%
<a href="#">Peer review</a>	Individual		Rubrics	Early Nov	<a href="#">Peer review</a>	20%
Activity in the Modules			Tutorials, in class			

Here is the timeline of events, with hyperlinks to activities and assignments - and week numbers to approximate the timing:

<b>August</b>			<p>Week 34</p> <p>Course overview</p> <p><a href="#">Module 1 Welcome</a></p> <p>Form groups, discuss plans &amp; expectations</p>	<p>Week 35.</p> <p><a href="#">Module 2 Practical info &amp; IT.</a></p> <p>Cowrite and work with others. Find question for project.</p>
<b>September</b>	<p>Week 36</p> <p>Module 3 Work on group project</p> <p><a href="#">Find data for paper.</a></p>	<p>Week 37</p> <p><a href="#">Module 4. Library use.</a></p> <p>Hege Folkestad</p>	<p>Week 38</p> <p>Module 5 <a href="#">Visualization &amp; results</a></p> <p>Tom Langbehn</p>	<p>Week 39</p> <p>Module 6 <a href="#">Materials and Methods</a></p> <p>Module 7 <a href="#">Writing Introductions.</a></p>
<b>October</b>	<p>Week 40</p> <p>Modules 8 &amp; 9. <a href="#">Writing a discussion. Academic writing.</a></p>	<p>Week 41</p> <p>Module 10. <a href="#">Peer review - how science is made</a></p> <p><a href="#">Academic writing</a></p>	<p>Week 42</p> <p>(no seminar)</p> <p><a href="#">Submit draft paper</a></p>	<p>Week 43</p> <p>(no seminar)</p>
<b>November</b>	<p>Week 44</p> <p>Module 11. How to succeed with your master</p> <p><a href="#">Submit peer review.</a></p>	<p>Week 45</p> <p>Comments &amp; feedback on draft paper</p>	<p>Week 46</p> <p>(no seminar)</p> <p>Comments &amp; feedback on draft paper</p>	<p>Week 47</p> <p>(no seminar)</p> <p>Module 12. <a href="#">Posters/oral presentations</a></p>
<b>December</b>	<p>Week 48</p> <p>(no seminar)</p>	<p>Week 49</p> <p><a href="#">Submit final version of full report + discussion</a></p>		<p>JANUARY: Final grades back</p>

## Appendix 2. The peer review assignment

**This is the instructions for writing the paper** (see also the [rubrics for the final assessment of the paper](#)):

Here you can submit the first version of your paper, a title, abstract, introduction and the group section (materials and methods, results with maximum two figures). Submitting a draft version gives you a ticket to participate in the peer review process, which counts 20% of your grade, and a chance to receive feedback on your work from peer students, teaching assistants and teacher. The draft version itself is not subject to assessment - this is assessed by the final product, which will be a separate assignment.

Remember, this paper is a product you can refer to in your CV, or publish in a journal like [Bikuben](#), if the quality is good.

The paper must be in a single Word document. The materials and methods and the results chapter with figures should be identical for everyone in the group.

General guidelines for the paper (see the modules for more details):

**Introduction (individual):** Make use of the standard ingredients in an introduction of a scientific research paper: An opening hook, introduce the background, carving out a research space, pointing out the knowledge gap, creating a transition to what can be done about it and what your concrete contribution will be - see the background material and the rubrics for details. Maximum word limit: 1000

Include reference to papers from the core literature and use a reference manager (like Endnote) to embed them in the Word document. Include a good title- maybe an engaging-informative type? Take care to use topic sentences, structure the paragraphs and craft the sentences for readability and style, as discussed in the modules. Write an abstract of maximum 100 words.

**Materials and methods (Group).** Maximum 500 words. Try to justify the selection of data, and explain how the data was collected, briefly.

**Results (Group).** Maximum 300 words + max. two Figures with captions that make it understandable as a standalone item (see modules). Tell a data-driven story with your visualization.

**Discussion (Individual).** Maximum 500 words.

Check the relevant modules and the rubrics in the assignment for further details about our expectations for structure, style and craft. We expect that you can apply at least some elements presented there - and you may even exceed our expectations and write at a level one could find in a decent scientific journal. And I repeat, you should aim to publish the paper in [Bikuben](#), the student journal at BIO with your group, and build your CV.

You find a template with some general advice [here](#).

All papers are sent for Plagiarism Review. Make sure you do not copy-paste anything from other texts. The individual sections must be written with your own words - with

no word-by-word overlap with other members of the group or the literature. Use your own words!

Write the paper in English.

Note that after the deadline, this assignment rubrics and score applies to your peer-review of two other papers, not your paper. You can obtain maximum 20 points out of 100 on the peer review. To see the rubrics for the paper itself - [see the assignment for the final version of the paper](#).

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**This is the instructions for performing the peer-reviews - which is assessed here:**

The review assignment itself appears as a continuation of the draft submission. NB! We need some time to distribute the papers to reviewers and make sure that they are not given to students from the same group. We will notify you when we are ready! It may take some us hours, so wait for the signal..

The peer-review resembles the process in scientific journals - two independent (possibly anonymous) reviews and comments from teachers (editors).

First, write a short summary where you show that you have read the text, including your own interpretation of its results and main take-home message. Then, you may deal with some major issues, if you find any biases, errors or other weaknesses. Point out at least one thing you liked in the paper, and explain why. These elements can be written directly into the free-text form ('Add a comment'-box) in the peer-review submission assignment:

(picture of submission modus)

Download the file, make comments directly in the text, save it and attach the annotated file with the 'Attach file/legg ved fil' tag before submitting your review (see picture above). The comments you make in the file can point at style elements discussed in the modules of how to write the various sections of an IMRaD paper, and qualities of academic writing - words, sentences and paragraphs - as treated in Module 9. See also the rubrics below for a summary of important elements.

Your annotations can remain anonymous if you save the file as shown in the video below.



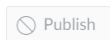

## Appendix 3 The rubrics for the peer-review.

Due	For	Available from	Until
20 Oct 2021 at 12:00	Everyone	30 Aug 2021 at 9:00	21 Oct 2021 at 14:00

Rubric for review						
Criteria	Ratings					Pts
Global edits Quality of suggestions for major revisions on the structure of the paper	<b>10 Pts</b> <b>Full score</b> The suggestions made can improve the paper substantially or points out why the existing structure works well with extensive references to the material in the modules. Comments are abundant, well justified and explained.	<b>7 Pts</b> <b>Good marks</b> Several valid suggestions and general comments made about the structure and content of the paper	<b>5 Pts</b> <b>Half score</b> Some useful comments about the structure of the paper and its parts, likely to improve the paper, or giving credits for some of the structure elements in an IMRAD paper	<b>3 Pts</b> <b>Some score</b> A few helpful comment or recommendations - but not likely to improve the commented paper much	<b>0 Pts</b> <b>No score</b> No suggestions or comments on the overall structure of the whole or parts	10 pts
Style and writing Quality of suggestions in writing	<b>10 Pts</b> <b>Full score</b> The suggestions made can improve the writing and flow of the paper substantially, and/or explains how or why the writing aligns well with the instructions in the modules. Comments are abundant, well justified and explained - and concrete about how and why the text use specific elements of good academic writing style.	<b>7 Pts</b> <b>Good marks</b> Several valid and concrete suggestions on the writing and flow of the paper - likely to improve the draft paper.	<b>5 Pts</b> <b>Half score</b> Some concrete comments on the writing, sentence structure, word use, use of active/passives, storytelling, graphs and visuals, flow etc. that help the author improve the paper	<b>3 Pts</b> <b>Some score</b> A few comments on writing, but not likely to improve the final version much.	<b>0 Pts</b> <b>No marks</b> No helpful comments or feedback	10 pts

## Appendix 4. Assignment and rubrics for presentations and posters.

### The oral presentation - group assignment Wednesday December 2nd

 Publish 

Here is the plan for the oral presentations on Wednesday December 2nd. This is the 'Poster day' at BIO, where several courses come together to present project work by students. In normal times we do this in the entrance area of HIB, but this year it runs online. We run our own session on Zoom, and we do oral presentations instead of posters. If a group wants to make a poster instead, we can arrange that, and place it in a session with the other courses - see [this page](#) for inspiration and information.

The format is a 3 min oral presentation, followed by 2 minutes for questions. This means you have to be structured and to the point with slides, animations, and timing. Pitch your work and question with a hook, a short introduction, what you did, what you found and what it means. Place a title and the list of authors on the first slide - we will roll a dice and this determines which of the authors on the list run the presentation. This means all authors must be prepared to share their screen and run the presentation. If any member of a group does not want to prioritize this activity and choose to not participate, let your group know, and your name should not appear on the list of authors on the presentation. You then miss all of the 40 points attainable.

We will make a detailed schedule for the presentations when we know the schedule of the Poster-symposium.

Upload the presentation here, as a Powerpoint file. You find the rubrics we use for assessment of the presentation below. We use the same main criteria for posters. The posters are part of a competition for a best poster award among all participating courses, so keep the criteria used there in mind also:

- This poster looks attractive and inviting.
- The title is clear and to the point.
- Headings are used to help effectively convey the main message.
- The text is effective and to the point.
- The research question or aim is easy to find.
- Figures and/or graphics effectively convey the main message.
- Creativity points for creative touch that strengthens the message:
- The poster contains these elements (one point per element): Contributors, Title, UiB logo, Text, Graphics (graphs, figures, etc).

Due	For	Available from	Until
1 Dec 2020 at 14:00	Everyone	16 Nov 2020 at 0:00	1 Dec 2020 at 15:00

Rubric for poster and oral presentation						
Criteria	Ratings					Pts
Telling a story with a pitch	5 Pts Full score Introduces the purpose of the presentation clearly and creatively, smooth, clever transitions, information appear in a logical, interesting sequence. End with an accurate conclusion showing thoughtful, strong evaluation of the evidence presented.	4 Pts High score	3 Pts Very good	2 Pts Good Some of those elements are present	0 Pts No score	5 pts
Right level for audience	5 Pts Full score Level of presentation is appropriate for the audience. Original, clever, and creative elements that captures audience's attention	4 Pts High score	3 Pts Very good	2 Pts Good Some of those elements are present	0 Pts No score	5 pts
Use of visuals	5 Pts Full score Graphics, visuals, figures and text is animated appropriately to support the story, communication and attention to the audience	4 Pts High score	3 Pts Very good	2 Pts Good Some of those elements are present	0 Pts No score	5 pts
Total points: 15						

## Appendix 5. The final IMRAD paper, assignment, and rubrics.

### Final, revised paper

✓ Published



Here you can submit the final version of your paper, including a title, an abstract, the revised introduction and the group project (materials and methods, results with maximum two figures), a discussion you wrote yourself, and a list of references.

The paper must be in a single Word document. The materials and methods, the figures and the results chapter should be identical for everyone in the group, the rest you write individually.

General guidelines - see the modules for more details:

**Introduction (individual):** Make use of the standard ingredients in an introduction of a scientific research paper: An opening hook, introduce the background, carving out a research space, pointing out the knowledge gap, creating a transition to what can be done about it and what your concrete contribution will be - see the background material and the rubrics for details. Maximum word limit: 1000

Include references to several papers from the core literature, and use a reference manager (like Endnote) to embed them in the Word document. Include a good title- maybe an engaging-informative type? Take care to use topic sentences, structure the paragraphs and craft the sentences for readability and style, as discussed in the modules. Write an abstract of maximum 100 words.

**Materials and methods (Group).** Maximum 500 words.

**Results (Group).** Maximum 300 words + max. two Figures with captions that make it understandable as a standalone item (see modules).

**Discussion (Individual).** Maximum 500 words.

Check the relevant modules and the rubrics in the assignment for further details about our expectations for structure, style and craft. We expect that you can apply at least some elements presented there - but feel free to exceed our expectations and bring it to at a level one could find in a decent scientific journal. You should then coauthor a final version with your group and submit it to [Bikuben](#) when you are done.

You find a template with some general advice [here](#) ↓ .

All papers are sent for Plagiarism Review. Make sure you do not copy-paste anything from other texts. The individual sections must be written with your own words - with no word-by-word overlap with other members of the group or the literature.

Write the paper in English.

## Rubrics for paper 2021

Criteria	Ratings						Pts
<p>🕒 Title &amp; abstract</p> <p>The title is descriptive of the study, and summarize the main point in an engaging and understandable statement. The abstract follow the general advice given for the structure, and it tells a coherent and readable story.</p> <p>threshold: 1.0 pts</p>	2 Pts Excellent	1 Pts Good	0 Pts No description				2 pts
<p>🕒 Intro - write a theme into a scientific context, with critical use of core scientific literature</p> <p>The introduction use the classical structure for IMRaD, have a good opening and hook, carves out the research space, builds in the background, narrows down to a researchable question, becomes more specific in the end. Language is clear, active and efficient. Sentences, paragraphs and the introduction itself has a natural flow and presents an interesting, well justified and referenced story.</p> <p>threshold: 15.0 pts</p>	25 Pts Excellent	20 Pts Very good	15 Pts Good	10 Pts Fair	5 Pts Weak	0 Pts Fail	25 pts
<p>🕒 Material and Methods</p> <p>The methods is described clearly and in sufficient detail, well written, making it possible to repeat the study and analysis you present, and at the same time readable to peers. The MM section follows advice presented in the modules, and has a logical structure leading from question to how answers can be found.</p> <p>threshold: 5.0 pts</p>	10 Pts Excellent	8 Pts Very good	6 Pts Good	4 Pts Fair	2 Pts Weak	0 Pts Fail	10 pts
<p>🕒 Figures - present results and data and write them into a text</p> <p>Figures can be read independently (clear caption), are easy and intuitive to interpret, follow general rules for good visualization of data, tell a story, can be reproduced with code, answer a research question.</p> <p>threshold: 5.0 pts</p>	10 Pts Excellent	8 Pts Very good	6 Pts Good	4 Pts Fair	2 Pts Weak	0 Pts Fail	10 pts
<p>🕒 Results</p> <p>Results are presented concisely and honest, figures and data-analysis is seamlessly embedded in the text, the text highlight the main points and separate discussion from description of findings, original findings, test the hypothesis</p> <p>threshold: 5.0 pts</p>	10 Pts Excellent	8 Pts Very good	6 Pts Good	4 Pts Fair	2 Pts Weak	0 Pts No description	10 pts
<p>🕒 Discussion</p> <p>The discussion summarize and interpret the results, point out caveats, relate findings to the literature, highlight implications, suggest future work, is in harmony with the introduction, pick up on the research question</p> <p>threshold: 5.0 pts</p>	8 Pts Excellent	7 Pts Very good	6 Pts Good	4 Pts Fair	2 Pts Weak	0 Pts No description	8 pts
Total points: 65							

## Appendix 6. Student evaluations

<p><b>Elements and learning activities that improved my skills - things to keep</b></p>	<p><b>Things that should be left out, changed or improved - things to trash</b></p>	<p><b>What do you need to learn at the start of a Master project, or to become better at writing and communicating your work to others? What would an ideal course to train this contain and how should it be designed?</b></p>	<p><b>The course was fully online - partly due to Covid, but also an interesting experiment. Should we keep the fully digital format, or which parts should be kept digital? Or not?</b></p>
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The zoom meetings recorded, was very useful to be able to re-listen to parts. The professor is great and very engaging. The TAs are very helpful aswell. Really useful that we can book time with you all and discuss this was very helpful.

Love that this is one of the few courses that trust students to manage their time correctly. There are so many students with different timetables that this course was perfect because it allowed us to schedule time fitting our group.

Book recommendation was great

Slightly dissapointed that we were graded on our presentation and not our poster. This should be made clear earlier on then we would have choosen presentation so we had more minutes. There was no reason to use many hours on the poster then.

For us with Norwegian as a first language the academic English can sometimes be difficult. would have loved therefore to see som epraactical tips and more, perhaps recommendations of papaers where that is excellent for learning.

I also have the awkward question of how long should a master thesis be ? Because the paper we write has very strict word limit.

Yes, but also keep the poster session as a meeting point. That should be more integreted into the course. would have dropped the presentation part and had everyone meet at the poster and where all group members should have one representative which was switched around so everyone could look at other peoples poster. It was a bit sad that not everyone used the poster session to discuss their research because it was really intresting.

The peer-review and presentation were fun and educational. It was interesting to see, how other people write and structure their papers. Getting feedback on my own work was also interesting. It helped me structure my paper better, pointed out things that needed to be clearer and things that needed to be better explained.

Writing a good introduction is very important and I am glad I got this experience before starting my master thesis.

It would be nice if the appointments with you and the TA's were in person. In my group we felt lost for a long time and we didn't feel like the appointments helped, we were usually more confused after a meeting than before.