

Course analysis (course evaluation)

Course code 5MT010	Course title Molecular Genetics and Genomics	Credits 5
Semester (VT/HT-yr) HT23	Dates 2023-09-22 -2023-10-12	

Course Director Fulya Taylan	Examiner Anna Lindstrand
Teachers in charge of different parts of the course Fulya Taylan	Other participating teachers Jesper Eisfeldt, Isabel Tapia Paez, Zahra Haider

Number of registered students at the 3-week check 29	Number passed at final course day 29	Response frequency course valuation survey 16/29 (55.17%)
Other methods for student influence (in addition to the final course valuation/survey) None		
Feedback reporting of the course evaluation results to the students 2023-10-31		

Note that...

The analysis should (together with a summarising quantitative summary of the students' course evaluation) be communicated to the education committee at the department responsible for the course and for programme courses also to the programme coordinating committee.

The analysis was communicated to the education committee on the following date: 2023-11-27
The analysis was communicated to the programme coordinating committee on the following date: 2023-11-27

1. Description of any changes implemented since the previous course occasion based on the views of former students

This course, 5MT010 Molecular Genetics and Genomics, is an updated version and continuation of the previous course, 5MT009 Genetics. The content has been adjusted to fit the new course structure. Unlike previous years, this year the course ran every day without being intercalated with the Applied Communication course. In total, there were 10 days dedicated to actual teaching and four days for individual studies and examinations. Due to time constraints, several assignments and activities had to be removed.

A new course structure was introduced, aligning flipped classroom sessions, lectures, student presentations, and hands-on workshops based on the topic. All classroom activities took place in the mornings, while the afternoons were reserved for individual studies.

The Canvas page was rearranged and organized to reflect the new course structure.

To adapt to the widespread use of ChatGPT and similar generative AI tools, written assignments and take-home examinations were eliminated. Instead, a single best answer type digital examination in the examination hall was introduced.

2. Brief summary of the students' evaluation of the course

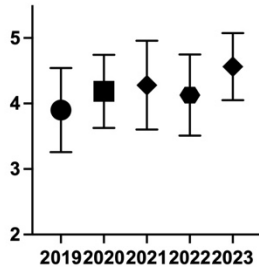
(Based on the students' quantitative responses to the course valuation and key views from free text responses. Quantitative summary and any graphs are attached.)

- Majority of the students believe that they have developed valuable expertise/skills during the course (mean=4.6, median=5.0 and standard deviation=0.5).
- Majority of the students think they have achieved the intended learning outcomes of the course to a large extent (mean=4.4, median=5.0 and standard deviation=0.6).
- Almost all the students think there was a common theme running throughout the course – from learning outcomes to examinations to a large extent (mean=4.6, median=5.0 and standard deviation=0.5).
- Almost all the students think the course has promoted a scientific way of thinking and reasoning to a large extent (mean=4.6, median=5.0 and standard deviation=0.6)
- Almost all the students think the teachers have been open to ideas and opinions about the course's structure and content to a very large extent (mean=4.9, median=5.0 and standard deviation=0.3).
- Many students feel that the workload during the course was reasonable in relation to the extent of the course/number of credits awarded (mean=3.7, median=4.0 and standard deviation=0.9).
- Almost all the students think the course structure and methods used (e.g. lectures, exercises, seminars, assignments etc.) were relevant in relation to the learning outcomes to a large extent (mean=4.4, median=4.0 and standard deviation=0.5).
- Many students think the course built upon their knowledge from previous courses in the programme. (mean=3.9, median=4.0 and standard deviation=0.9).
- Many students think the examination was relevant in relation to the learning outcomes to a large extent (mean=3.9, median=4.0 and standard deviation=0.9).
- Majority of the students think they took responsibility for their own learning during this course to a very large extent (mean=4.3, median=4.0 and standard deviation=0.7)
- Majority of the students felt that he/she could turn to the teacher for guidance when/if he/she had questions or problems with the course content to a very large extent (mean=4.6, median=5.0 and standard deviation=0.6).
- The students appreciated the feedback they have received and some of them found it important for their development and learning (mean=4.1, median=4.0 and standard deviation=1.0).
- Majority of the students think this is a very good course (mean=4.7, median=5.0 and standard deviation=0.5)

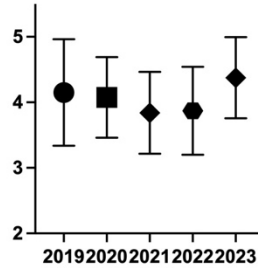
In Figure 1, a comparison of student responses to 12 standard questions that are surveyed to evaluate the quality of the courses (5MT009 and 5MT010) between 2019-2023 is presented. The plots show the mean value with the standard deviation for each survey question in each

year. Five-year evaluation of the course shows a consistent high-quality delivery of the 5MT009/5MT010 MGG course to the MTLs students.

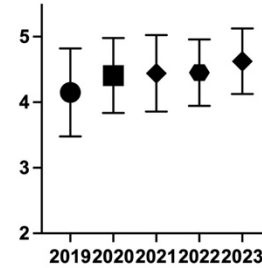
In my view, I have developed valuable expertise/skills during the course



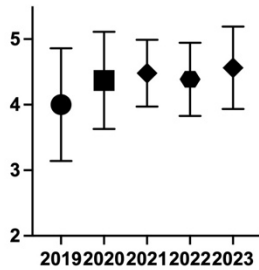
In my view, I have achieved all the intended learning outcomes of the course.



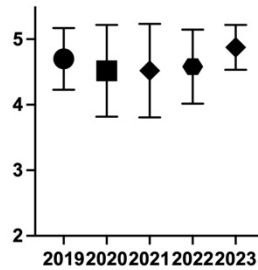
In my view, there was a common theme running throughout the course



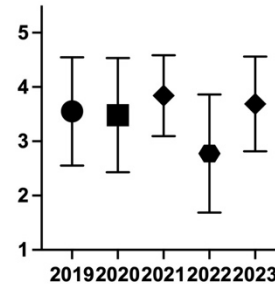
In my view, the course has promoted a scientific way of thinking and reasoning



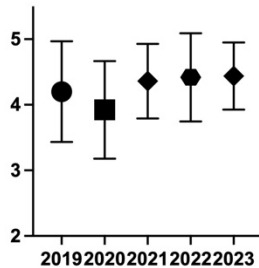
In my view, during the course, the teachers have been open to ideas and opinions



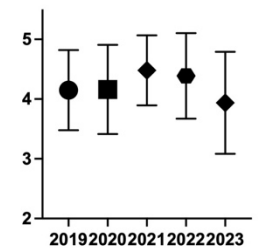
To what extent do you feel that the workload during the course was reasonable in relation to the extent of the course/number of credits awarded?



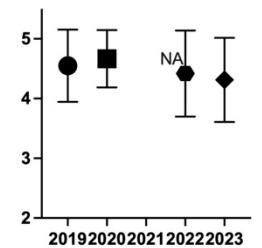
The course structure and methods used (e.g. lectures, exercises, seminars, assignments etc.) were relevant in relation to the learning outcomes.



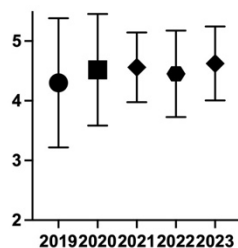
The examination was relevant in relation to the learning outcomes.



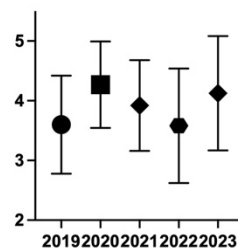
I took responsibility for my own learning during this course.



When/if I had questions or problems with the course content, I felt that I could turn to my teacher/supervisor for guidance.



The feedback that I have received has been important for my development and learning



What is your overall opinion of the course?

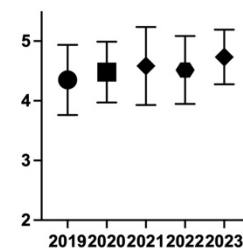


Figure 1. Student responses to twelve questions that are surveyed to measure the quality of the 5MT009/5MT010 courses between 2019-2023. The plots show the mean value with standard deviation.

3. The Course Director's reflections on the implementation and results of the course

Strengths of the course:

The course has many strengths, according to the students. One of these strengths is the interesting and pedagogical lectures given by passionate and friendly teachers. The active learning approach, which includes exercises, journal clubs, workshops, and student presentations during the lectures, allows for testing and deepening of knowledge. The course structure, with morning lectures and mandatory events, allows for self-study in the afternoons. The flipped classroom presentations help prepare for future presentations and make it easier to learn the course material. The workshops are short, informative, and helpful. The teachers are enthusiastic and provide valuable support. Additionally, the course covers a lot of information in a short amount of time, thanks to the flipped class approach, and includes important content related to the master's program. Overall, the course encourages discussion and collaboration, allowing students to freely engage with the content and develop analytical thinking skills.

Some representative answers:

The strengths are the teachers that has given very interesting lectures that was inspirational as well as pedagogical. I really appreciate that the teachers were open to discussion and that we had an atmosphere where you could ask questions and start conversations about the content freely both with other students and teachers. I really liked the active type of learning where you come prepared to class and we have the possibility to test our knowledge e.g the exercises during lectures, journal club, workshops, and presentations by students.

The lectures and mandatory events were all in the morning, so we had time for self-study later in the day. Also, having four teachers was the perfect balance between diversity and familiarity. The journal clubs helped with the applicability of the material learned. And the flipped classroom presentations functioned both as preparing for the second presentation and learning course material while you make it. The teachers were very enthusiastic and incredibly helpful.

The professors are the strength of this course. They consistently provide up-to-date materials, including videos, papers, and more, which greatly enhance our ability to engage deeply with the subject matter. Their presentations were not only captivating but also demonstrated their genuine passion for the subject matter. Also, the group work gives as a unique opportunity to dig in the topics and develop an analytical thinking towards them.

The course gives you a huge amount of knowledge in a very short time. I have never been able to learn that much that quickly, thanks to the flipped class approach. Also, the workshops were helpful and interesting.

This course is very well formulated, it follows a logical order and combines lectures, workshops, and self-study. The content covered in this course is also very important, in my view quite foundational for the master's program itself and therefore crucial for what comes next, especially regarding the students' different backgrounds.



Weaknesses of the course:

The feedback provided by the students highlights several weaknesses of the course. Firstly, there was insufficient time to process the information between lectures, resulting in a lack of opportunity to fully comprehend the material. Additionally, the workload was demanding, with classes every day and limited time for additional readings and recommended lectures. The final exam was perceived as difficult, indicating a potential mismatch between the content covered in the lectures and the assessment. The course could benefit from a longer duration, allowing for spaced learning and in-depth exploration of concepts. Continuous assessment, such as take-home assignments, could alleviate the burden on the final exam. Lastly, the course would benefit from more interactive elements, such as combination workshops/assignments and improved journal clubs with detailed feedback. Overall, the weaknesses of the course include time constraints, workload intensity, assessment difficulty, and the need for more interactive and comprehensive learning experiences.

Some representative answers:

The only thing that was missing in my opinion is that there was too little time to process all the information between lectures. I really liked that you could read the book and watch videos at home but sometimes I did not have the time because we had lectures every day. If we would have a longer course period so that there could be a day between lectures or e.g. have a morning lecture then an evening lecture the next day, there might be possible to actually process information you learn in the lectures and better prepare for the next lecture.

As we've reiterated to both the professors and TAs on multiple occasions, I believe the workload for this course was quite demanding. While I found all the topics and materials extremely interesting, the challenge of having classes every single day and attempting to prepare the lectures in advance within such a limited timeframe was undeniably taxing. It, regrettably, prevented me from delving as deeply into the material as I would have preferred. I genuinely feel that this course should offer more credits and additional time to allow students the opportunity to process the information (using spaced learning techniques) and the chance to explore the concepts and topics more thoroughly if they wish to.

A few days extra would really help with the course load. It was doable, but there was not much room (time wise) to watch all the recommended extra lectures and read the book chapters and papers in depth. Furthermore, the lectures could be more in depth and frankly a bit more difficult.

This course should be longer so we can have time to better process the information. It would be best to add one week by cutting out a week from the applied communications. Also, it would be nice if there was a combination workshop/assignment to solve a case, so we can test what we learnt in all workshops and class. Finally, the journal clubs could be better with some form of assignment (not graded or graded) and the teachers should give us more detailed feedback after all the presentations.

The most important thing to improve in the future is the amount of time this course has. In my opinion, and of many colleagues as discussed in class, this course requires more days to cover more comprehensively the content included content that is important and that needs

more time to be digested correctly. Additionally, I believe that time could be taken from the course before which had too much time compared to content.

4. Other views

I agree with the students that the time allotted for the course content is very limited. The course deserves to be at least 6 ECTS, and the program committee should discuss why it has been given only 5 credits. This course is of great importance and provides the foundation for many subsequent courses in the program.

5. Course Director's conclusions and any suggestions for changes

(If changes are suggested, state who is responsible for implementing them and provide a schedule.)

Area of improvement	Suggestion for change	Responsible person	Time plan
Written examination	The examination will take place in the examination hall and will consist solely of single best answer questions. Additional examination questions will be prepared by other teachers, and students will be provided with more sample questions. Each teacher will be tasked with preparing 10 questions related to the topic they cover.	Fulya Taylan, course leader	HT24
More credits and extra one week to the course	The course should be allocated a minimum of 6 credits and should have a longer duration. This will be discussed with the program director and the committee.	Fulya Taylan, course leader	HT24

Appendices:

1. 5MT010-HT23 Molecular Genetics and Genomics course evaluation report (short) without free text answers (pdf)
2. 5MT010-HT23 Molecular Genetics and Genomics (long) with free text answers (pdf)

Link to course survey report without free text answers:

<https://survey.ki.se/Report/5htvZz2uoEJ>