

## **Course analysis BB1070 Genetik (6.0 hp)**

### **Background**

This course was held remotely because of the COVID-19 pandemic. Therefore, I recorded the lectures in advance, so that the students could see the video. Then at the scheduled lecture time, we had a "query session" via zoom. The literature seminars were done in groups of 4-5 as usual, but via zoom. The exam was a normal written exam, but the students had the opportunity to do an oral exam instead, which approximately 6-7 did.

Notably, also previous years, the lectures (in class room) have included query sessions where the students could ask about unclear or complicated details, so this was not a major change of the course, the difference was that no lecture was held at the scheduled lecture times.

Furthermore, the course was originally designed to encourage self-studies, and to make it possible to study remotely without attending the lectures. Therefore, the transition to remote teaching was relatively straightforward, and should not have severely affected the quality of the teaching.

### **Number of registered students:**

69

### **Number of students writing the exam, at first (ordinary) exam.**

58

### **Exam Results:**

46 of 58 students (79%) passed the exam.

Number of students per grade: 7 A; 10 B; 10 C; 12 D; 7 E; 1 Fx; 11 F.

### **Summary of Course evaluations**

I normally have the course evaluations handed out as paper forms at the exam. However, because of a mistake by the Studentexpedition, the forms were handed out to only two of the students. However, these two evaluations seem like two extremes on the spectrum of student comments, and are probably quite representative. I therefore do an analysis based on these evaluations. I also had a lot of communication with the students at the query sessions and literature seminars over zoom, and thereby got information about what the students thought about the course and their situation. I therefore think I can make an informative course analysis based on these sources. The results of the two course evaluations is shown below, directly after the Course analysis.

## **Course analysis**

I normally base the course analysis on a course evaluation given to the students at the exam. As explained above, it was handed out to only two students, but these two evaluations seem like two extremes on the spectrum of student comments, and are probably quite representative for the students' opinion.

### **What was good with the course?**

At the zoom meetings with the students, comments about the course were generally very positive. They thought that the remote teaching worked quite well. Especially the filming of lectures in advance followed by query sessions was very appreciated. The students generally also appreciated (some were really enthusiastic) the literature seminars. On my question, the students generally thought that the study situation under the pandemic was OK, but that studying from home was more boring, they missed meeting people at school. Some thought they might be studying more because of less social diversions (fun stuff). The course evaluations from the two students gave over-all rating 5 and 3 on a scale 1-5 for the course, in accordance with previous years with mean values of 4.21 (2019) and 4.36 (2020).

The exam results were also generally good, 79% of students passing the exam at the first exam, and with generally good grades: 7 A; 10 B; 10 C; 12 D; 7 E; 1 Fx; 11 F.

In addition to my own questions, the course evaluation also included questions from the KTH Learning Experience Questionnaire (LEQ), indicating a generally successful course and satisfied students, giving 6 or 7 on most questions.

To summarize, according to all available information (Grades given on the exam, my own course evaluation and the KTH LEQ, and my conversation with the students during zoom lectures/seminars), the students have generally reached the "intended learning outcomes", and are also generally very satisfied with the course.

A positive effect of the epidemic was that the films from the lectures can be reused in future years, as a complement to live lecturers.

### **What was bad with the course?**

The only major problem was that, like the previous years, the students had relatively bad results on the exam on the questions about epigenetics and small RNAs. The results have been better each year but are still not satisfactory. This may reflect that the course material is not optimally pedagogical. Since this is an emerging field it is not well covered in most course books, and I have not found any really good texts. Two years ago, I added an additional text which I

think explains things a bit better, which may explain that the results have improved. I still keep looking for better texts and I have tried to improve my lecture on the subject, to explain this subject in more detail to the students. The results did improve from last year, so my teaching may have helped. I will continue to try and find good texts, and will give even more time to this subject at the lectures.

The course book is a slight problem. It is quite old (from 2006) for this quickly evolving field. However, it's pedagogics is unique and perfect for my teaching so it is hard to replace. I keep the book and complement with additional texts for now.

### **What changes will be made until next time the course is given?**

As mentioned, a positive side-effect of the epidemic was that I filmed the lectures, and these films will be used in future, even when teaching is back to normal after the end of the pandemic. That may have a good effect on the learning, since the students can listen to the lectures in their own pace. Thus, a change for next year is to add these films to the course material, whether or not teaching is remote.

The situation about the epidemic situation is not clear, so it will probably be decided at a late stage whether teaching in this course will be remote or not. Therefore, it is hard to plan the exact design of the course. The course has worked well since a number of years, even under the pandemic, so there is no reason to make any major changes. However, the course is generally under constant development, especially concerning choice of additional texts for the seminars, and therefore changes are normally done each year.

The only major thing I will change is to try and find better texts about epigenetics and small RNAs, and to give more time to this subject at the lectures.

***Here follows the Course evaluation questionnaire given to the students, with results and my comments written in read.***

***Note that because of a mistake by the Studentexpedition, the forms were handed out to only two of the students. However, these two evaluations seem like two extremes on the spectrum of student comments, and are probably quite representative. I therefore do an analysis based on these evaluations. I also had a lot of communication with the students at the query sessions and literature seminars over zoom, and thereby got information about what the students thought about the course and about their situation. I therefore think I can make an informative course analysis based on these sources.***

***I also put in statistics from previous years' course evaluations for a reference of normal values.***

## Course evaluation BB1070

The goal of this evaluation is to get information from you students, to enable improvements of contents and concept of the course. It is important help for me!

It is OK to skip questions if you can't/don't want to answer!

If more space is needed, please use the backside.

### ***My comments:***

***As mentioned, only two students were given this course evaluation, because of a mistake by Studentexpeditionen. This implies that the frequency of reply for those given the survey was 100%, but for the whole class it was only  $2/58 = 3.4\%$ . In 2019 and 2020 the frequency of reply was 91%, implying that the statistics for those years should reflect the students' opinion quite well.***

1. How was the overall quality of the course?

Very good	Good	Acceptable	Not good	Bad
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student 1		Student 2		

**My comments:**

**Student 1 gave a 5 and Student 2 gave a 3, giving a mean value of 4.**

*The mean values for 2019 and 2020 were 4.21 and 4.36, respectively.*

*At the zoom query sessions, I discussed with students and most sounded very positive about the course.*

Comments:

**My comment:** *Comments from the two students (only one answered this question):*

**Student 1:**

"Kursen har ett utmärkt upplägg med inspelningar och instuderingsfrågor vilket ger en möjlighet för att strukturera upp studierna efter eget behov samt lätt kunna återsöka informationen. Med videos kan man se föreläsningarna i egen takt utan att missa något"

2. How was the course book?

Very good	Good	Acceptable	Not good	Bad
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Student 1			Student 2

**My comments:**

**Mean value 2019 was 4.0, and 2020 it was 3,74.**

*This is a very special book which is the core of my course. It is totally unique in its kind, but it's beginning to be quite old, it is from 2005. Therefore, I give this question to hear the students' opinion each year.*

Comments:

**My comment** *Comments from the two students:*

**Student 1:**

"Flera förklaringar verkade vaga och ibland svåra att förstå men väldigt koncis och "to the point" vilket jag uppskattar starkt!"

**Student 2:**

"Dåliga bilder och mycket dåliga förklaringar"

3. "The additional texts"

(a) What did you think about the "additional texts"? Did it give you something extra, compared to just reading the course book? Was the amount of reading OK?

(b) What do you think about the method of examination of the texts? My goal is that you should be able to read "relaxed" by not having to study details. And enjoy the texts and become wiser human beings... Did this work? And were the discussions interesting? Or, would you have wanted another form of examination?

Comments:

***My comment: Comments from the two students:***

**Student 1:**

"a) Ja, absolute även om epigenetik texterna inte gav fullständig förståelse så kompletterade de läroboken. Övriga texter var väldigt trevliga att läsa och uppskattades starkt.

b) Examinationsmetoden var bra, kul snack!"

**Student 2:**

"a) Nej! Mängden var alldeles för mycket.

b) Det var bra!"

4. Lectures and study questions

(a) The course has relatively few lectures, which do not cover everything in the course. How did this work? Would you have liked to have more lectures?

(b) On the other hand you had the study questions intended to partially replace lectures, did this work? What did you think about the study questions?

Comments:

***My comment: Comments from the two students:***

**Student 1:**

"a) Nej. det behövs inte, vissa saker som imprinting kanske ska läggas mer tid på att förklara, för texterna och boken behöver verkligen analyseras och brytas ned för att förstå.

b) Ja! Skönt att jobba i egen takt, och diskutera med kursare."

**Student 2:**

"a) Ja! Jag tyckte dina föreläsningar var väldigt bra. Man fick en helt annan förståelse än när man läste. Då förstod man ingenting.

b) Frågorna var bra. Behåll dem men lägg till fler föreläsningar."

**5. Teaching during Corona**

The course was on distance because of the Corona situation. Do you have comments about the design of the course (filmed lectures, query sessions etc.), did it work OK? Should it have been done another way?

Comments:

**Student 1:**

"Funkade jättebra! Tycker verkligen att upplägget funkar och till och med höjs av att man kan gå tillbaka och kolla exakt vad som sades på föreläsningarna."

**Student 2:**

"Filmade lektioner var jättebra! Till och med bättre än lektioner i verkligheten."

Please see also the **KTH Learning Experience Questionnaire (LEQ)** on next pages!

**Thanks a lot for the help!**

## Course evaluation (LEQ) for BB1070, 2021

### KTH Learning Experience Questionnaire (LEQ)

LEQ is a tool that examines your experience of the learning environment in a course. It consists of a number of statements and a few open questions. Please indicate to what extent you agree or disagree with a specific statement on a scale between 1 and 7, where

**1** = No, I strongly **disagree**

**4** = I **neither** agree nor disagree

**7** = Yes, I strongly **agree**

X = I am unable to respond *or* I consider question irrelevant to the course

***My comment: I mark the answers by student 1 (S1) and student 2 (S2). I have also inserted the mean value of the answers from 2020 for each question.***

### Estimated effort

On average, how many hours/week have you been working with the course (including scheduled hours)?

0-7h    8-12h    13-17h    18-22h    23-27h    28-32h    33h or more

    **S1**         **S2**           

**Mean value 2020: 16.25h**

### Learning experience

1. I worked with interesting issues

1    2    3    4    5    6    7    X  
                     **S2**     **S1**   

**Mean value 2020: 6.38**

Comments:

2. The atmosphere in the course was open and inclusive

1    2    3    4    5    6    7    X  
         **S2**                 **S1**   

**Mean value 2020: 6.54**

Comments:

**Student 2:** " Du var dålig på att svara på mail."

3. I understood how the course was organized and what I was expected to do
- |                          |                          |                          |                          |                          |                             |                             |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|-----------------------------|--------------------------|
| 1                        | 2                        | 3                        | 4                        | 5                        | 6                           | 7                           | X                        |
| <input type="checkbox"/> S2 | <input type="checkbox"/> S1 | <input type="checkbox"/> |

**Mean value 2020: 6.64**

Comments:

4. I understood what the teachers were talking about
- |                          |                          |                          |                          |                          |                                 |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------|--------------------------|--------------------------|
| 1                        | 2                        | 3                        | 4                        | 5                        | 6                               | 7                        | X                        |
| <input type="checkbox"/> S1, S2 | <input type="checkbox"/> | <input type="checkbox"/> |

**Mean value 2020: 6.37**

Comments:

5. I could learn from concrete examples that I was able to relate to
- |                          |                          |                          |                          |                          |                             |                             |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|-----------------------------|--------------------------|
| 1                        | 2                        | 3                        | 4                        | 5                        | 6                           | 7                           | X                        |
| <input type="checkbox"/> S2 | <input type="checkbox"/> S1 | <input type="checkbox"/> |

**Mean value 2020: 6.48**

Comments:

6. Understanding of key concepts was given high priority
- |                          |                          |                          |                          |                          |                             |                          |                             |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|-----------------------------|
| 1                        | 2                        | 3                        | 4                        | 5                        | 6                           | 7                        | X                           |
| <input type="checkbox"/> S1 | <input type="checkbox"/> | <input type="checkbox"/> S2 |

**Mean value 2020: 6.28**

Comments:

7. The course activities helped me to reach the learning objectives efficiently
- |                          |                          |                          |                          |                          |                             |                          |                             |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|-----------------------------|
| 1                        | 2                        | 3                        | 4                        | 5                        | 6                           | 7                        | X                           |
| <input type="checkbox"/> S1 | <input type="checkbox"/> | <input type="checkbox"/> S2 |

**Mean value 2020: 5.89**

Comments:

**Student 2:** "Vilka aktiviteter?"

8. I could learn in a way that suited me
- |                             |                          |                          |                          |                          |                          |                             |                          |
|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|
| 1                           | 2                        | 3                        | 4                        | 5                        | 6                        | 7                           | X                        |
| <input type="checkbox"/> S2 | <input type="checkbox"/> S1 | <input type="checkbox"/> |

**Mean value 2020: 5.93**

Comments:

**Student 2:** "Verkligen inte! Jag lär av att lyssna och inte läsa."

9. I could learn by collaborating and discussing with others

1	2	3	4	5	6	7	X
<input type="checkbox"/> S1	<input type="checkbox"/> S2						

**Mean value 2020: 5.96**

Comments:

10. I could get support if I needed it

1	2	3	4	5	6	7	X
<input type="checkbox"/>	<input type="checkbox"/> S2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> S1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Mean value 2020: 6.33**

Comments: **Student 2:** "Njaa.... du kunde vara bättre på att svara på mejl. Frågestunderna var inte tillräckliga."

### **My comments:**

**Like previous years, these two students seem generally pleased with the course, giving 6 or 7 on almost all questions. The major criticism is from Student 2 concerning two issues, both related to the course design.**

**Concerning the first one, "Du var dålig på att svara på mail ... Frågestunderna var inte tillräckliga.", I encourage sending emails with questions to be explained at the next coming lecture/query session, with a possibility for further private discussions after that. The thought behind this is that most questions are of interest also for other students, so it is a good opportunity to use this input about unclear details for the teaching of the whole class, and also not to waste time on redundant questions. Perhaps I failed to inform clearly about this, so I will try to be clearer next year.**

**Concerning the second issue, "I could learn in a way that suited me" with the comment "Verkligen inte! Jag lär av att lyssna och inte läsa.", this is a problem that is hard to adress. I have specifically designed the course to force the students to find most of the information by their own rather than taking it in passively at lectures. This is, in part, obtained by not explaining all details at the lectures, forcing the students to read the entire course literature, but with the possibility of asking questions at the query sessions. For this student, reading the literature seems cumbersome. However, I believe that even though it is not optimal for the results on this specific course, obtaining information from**

**written texts is an important skill that should be obtained from this KTH program. I therefore think that reading the whole course literature is good training for this student, even though it is not the optimal way of learning the course contents.**

11. What was the best aspect(s) of the course?

**Student 1:** "Möjligheten att strukturera upp sina studier själv."

**Student 2:** "Dina föreläsningar och instuderingsfrågorna."

12. What would you suggest to improve?

**Student 1:** "När det ej är pandemi kan man ha korta genomgångar på plats så att man kan ställa frågor men behåll inspelningarna!"

**Student 2:** "Lägg till fler föreläsningar där du tar upp samma sak som boken. Då kan man välja om man vill läsa eller lyssna."

13. What advice would you like to give to future course participants?

**Student 1:** "Börja läsa OCH svara på frågorna i tid, tentaplugga med andra och gå igenom frågorna tillsammans."

**Student 2:** "Kolla på föreläsningen."

14. Is there anything else you would like to add?

**Student 1:** "Kul kurs!"

*Thank you for taking the time to fill out this course evaluation!*