



Kursanalys - KTH

Formulär för kursansvarig.

Kursanalysen utförs under kursens gång.

Nomenklatur: F – föreläsning, Ö – övning, R – räknestuga, L – laboration, S – seminarium)

KURSDATA Obligatorisk del

Kursens namn	Kursnummer
History of Mathematics	SF2719 and SF2725
Kurspoäng och poäng fördelat på exam-former	När kursen genomfördes
6 hp (SF2719); 7.5 hp (SF2725)	Period 1, 2019
Kursansvarig och övriga lärare	Undervisningstimmar, fördelat på F, Ö, R, L, S
Tilman Bauer	Lektion 14 x 2h

Antal registrerade studenter 42 (SF2719) + 10 (SF2725)

Prestationsgrad efter 1:a examenstillfället, i % $41(SF2719)+8(SF2725)=94$
%

Examinationsgrad efter 1:a examenstillfället, i % $41(SF2719)+8(SF2725)=94$
%

MÅL

The aim of the course is to give students the knowledge and skills to analyze and contextualize historical mathematical texts with respect to the development of mathematics through history, the mutual influences between mathematics and society, and to draw conclusions about the role and relevance of mathematics today.

After completion of the course, a student will be able to:

- express analyses and arguments around original mathematical texts orally and in written form in a structured and scientific way
- ask relevant and creative historical questions
- express own thoughts about societal aspects of mathematics such as the structure of society, politics, and gender, both in the past and the present
- sketch the development through history of several mathematical ideas, mathematical subjects, and frameworks in which mathematics was done
- sketch important contributions, biographies and the social context of several prominent historical mathematicians.

Ange hur kursen är utformad för att uppfylla målen

The course consists of lectures mixed with group work, discussions, and reading. Four homework essays are used to train the first 4 objectives. Four short quizzes during the lectures test the last objective.

Eventuellt deltagande i länkmöte före kursstart

n/a

Kursens pedagogiska utveckling I

After last year's complete redesign of the course, only small changes were made. In response to the criticism that the in-class reading was under time constraints, I have made all texts available online before class so that those students who think they need a little extra time reading them can look at them before. In response to the criticism about the sometimes surprising questions in the quizzes, I have made them somewhat easier and more straightforward. I tried to be more explicit about why I do certain things, and why I do them the way I do.

Kontakt med studenterna under kursens gång

Studenter i årets kurs-nämnd: Namn

E-post (lämnas blank vid webbpublicering)

Alice Heavey (SF2725)
Henry Winge
Evelina Bergman

**Resultat av formativ mit-
tkursenkät**

n/a

Resultat av kursmöten

In a meeting with the course representatives in course week 3, the following points were highlighted:

- The bonus system with tests and essays was appreciated.
- It was seen as positive that there was only ever one active assignment at a time
- The time spent on the course was seen as reasonable.
- More explicitness about the learning objectives was still desired (what should we take home from this?)
- It should be pointed out more clearly that it's part of the assignment of the essays to interpret the question.
- Less "meta-discussions" (how to write, how to assess, what makes a good essay...) were requested
- Teacher should right more legibly.

Kontakt med övriga lärare under kursens gång

Kommentarer

Regular meetings with the assistant Kristian Moi (who helped with the grading).

Kursenkät; teknologernas synpunkter Obligatorisk del

Att komma ihåg:

- 1) Uppmana, mha kursnämnden, till ifyllande av kursenkät i anslutning till / just efter slutexaminationen
- 2) Delge kursnämnden enkäten
- 3) Publicera enkäten under en kortare tid

Period, då enkäten var aktiv

The survey was done in-class in the last lecture (after-lecture online surveys such as LEQ tend to have a far too low response rate to be statistically meaningful)

Frågor, som adderades till standardfrågorna	<p>LEQ was not used. Questions:</p> <ol style="list-style-type: none"> 1. How many hours a week did you spend on this course on average? 2. What was the most challenging aspect of this course? 3. What, in your opinion, was the main goal / were the main goals of this course? For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it. 4. What did you like best about the course? 5. What did you dislike most? 6. Name one thing that would make this course better for you.
Svarsfrekvens	13 responses out of ca. 40 active students
Förändringar sedan förra genomförandet	Question 3 (Which aspects of the course did you find least meaningful?) was taken away since most students interpreted it as synonymous with no. 5 above.
Helhetsintryck	Both the lecturer and the vast majority of students considered the course a success – it was challenging, interesting, and with reasonable requirements.
Relevanta webb-länkar	Course home page: https://kth.instructure.com/courses/11601
Kursansvarigs tolkning av enkät	
Positiva synpunkter	interesting and varied topics, essay-writing, requirements for continuous work/bonus points, the variety of examination, lectures/lecturer, discussions
Negativa synpunkter	in-class reading was challenging, some mathematicians were not given due attention, searching for literature (essay 4) was difficult. Some regarded the passing requirements of the course as too lenient.
Var kursen relevant i förhållande till kursmålen?	<p>Most students thought that the aim of getting an understanding of the development of math was a main goal of the course and they attained it well (4/5)</p> <p>Students also identified the analysis of historical texts as a goal, which was attained reasonably well (3.7/5)</p> <p>Other goals that were achieved in the course were given as critical thinking/change of perspective (3.9/5) and essay-writing (3.5/5)</p>

Syn på förkunskaperna Some students struggled with reading historical English texts

Syn på undervisningsformen The structure was generally seen as very positive.

Syn på kurslitt/kursmaterial The texts were sometimes seen as difficult to read.

Syn på examinationen Generally very positive, with the exception that some thought that the essay questions were too vague. (They were intentionally vague so that the students could focus on an aspect they thought was particularly interesting to them.)

Speciellt intressanta kommentarer Some students expressed the wish to learn more about non-Western or Middle Eastern mathematics

Synpunkter från övriga lärare efter avslutad kurs

Vad fungerade bra

Vad fungerade mindre bra

Resultat av kursnämndsmöte efter examination

Studenternas sammanfattn. The course was by and large seen as a success - interesting and relevant, well-balanced.

Förslag till förändringar	<p>The student representatives thought the bonus points were not distributed homogeneously and thought passing part B was too easy, and in general to pass the course. They suggested decreasing the number of bonus points for reviews and rebuttals. They suggested lowering the total number of bonus points so that one cannot reach grade C without writing the exam.</p> <p>They suggested spending less time on how to write essays, reviews etc.</p> <p>If grading time has to be cut down, they suggest more general feedback, replacing some of the individual feedback.</p>
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Länk till kursnämndsprot. n/a

Kursansvarigs sammanfattande berättelse

Helhetsintryck	The course was a lot of fun and it was generally seen as meaningful and challenging. Next year the course will be taught by a different teacher, I am excited to see how he will develop the course.
Positiva synpunkter	The essays worked really well - I could see a marked improvement in almost all students from essay 1 to essay 4. The in-class discussions were lively.
Negativa synpunkter	The work load for the teacher was, for the course of this size, a bit on the high side, especially since the number of students taking the course as SF2725 (with a project) has doubled from 5 to 10 this year.
Syn på förkunskaperna	Fine.
Syn på undervisningsformen	The mixed lecturers/discussions/group work worked well.
Syn på kurslitt/kursmaterial	Altogether, the students got acquainted with a wide variety of types of historical texts, and this should be kept. Maybe the number of different texts used in class could be reduced somewhat.

Syn på examinationen

The variety of examination worked really well and took both the stress out of the final exam as well as taught them incrementally how to improve. Peer review and rebuttals were meaningful. The fact that the passing rate of those who took the exam was at 100% indicates that the requirements might be raised somewhat, although I think it was exactly on the same level as last year.

Kursens pedagogiska utveckling II Obligatorisk del**Hur förändringarna till denna kursomgång fungerade**

The small changes I made had the desired effect.

Förändringar som bör göras inför nästa kursomgång

Reconsider the distribution of bonus points. Vary the topics somewhat from year to year. Think about involving guest lectures by a historian.

Övrigt

The course questionnaire responses are attached.

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

8 typ, Mer om det var en Essay, mindre om det inte var.

2. What was the most challenging aspect of this course?

Skrivningarna, Essays.

3. What, in your opinion, was the main goal / were the main goals of this course?

For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

Få mer kunskap om matematikhistoria 3

Få ett bredare perspektiv på matematikhistoria. 4

4. What did you like best about the course?

Miljön, det har varit en lugn och rofull kurs. Man tycker det är intressant och roligt att lära sig.

5. What did you dislike most?

Det var flera centrala och stora matematiska som knappt nämndes, som Euler och Riman.

6. Name one thing that would make this course better for you.

Jag har inget specifikt men passar på att ge en allmän åsikt om kursen.

Detta har varit, utan tvekan den enklaste SF kursen vi haft. Jag har assat i SF1625 och har då välkomnat en enklare kurs så att jag får mer tid till att ~~assa~~ Mer om jag inte hade gjort det så hade jag varit understimulerad.

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

10 - 15 h.

2. What was the most challenging aspect of this course?

The individual search for original texts and primary sources.

3. What, in your opinion, was the main goal / were the main goals of this course?
For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

i) Analyse historical texts - 4

ii) Discuss mathematical history - 4

iii) Learn about the development of mathematics - 5

4. What did you like best about the course?

The (mostly) chronological order of mathematics.
It puts things in a ~~an~~ simple perspective.

5. What did you dislike most?

The searching of literature and source texts.

6. Name one thing that would make this course better for you.

Clearer formulations of the essays. Sometimes difficult to understand what is needed (although I realize ~~they~~ they are formulated like this for a reason).

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

Maybe 15h excluding lessons.

2. What was the most challenging aspect of this course?

I don't know how much time to put on the essays. Sometimes hard to know what you expect from the essays.

3. What, in your opinion, was the main goal / were the main goals of this course?
For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

To learn about the history of mathematics

3

To learn how to read mathematical texts.

3

To analyze and discuss & reflect about historical mathematical event.

5

4. What did you like best about the course?

I really liked the structure of the course, both with essays, quizzes and lessons.

5. What did you dislike most?

Reading texts during lessons was often really hard. I never read them before lesson tho, maybe that would have made it easier.

6. Name one thing that would make this course better for you.

I would have appreciated more discussions during the lessons. I know it is hard to make us talk. Last lesson was really good when you let us talk first with each other and then the whole class together. That makes it easier to know what to say, and make a better discussion.

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

$4+1+3 = 8h/week$

2. What was the most challenging aspect of this course?

It was to get used to the way of thinking

3. What, in your opinion, was the main goal / were the main goals of this course?
For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

Come to the exam with a approved grade (4)

Learn about mathematicians through the ages (3)

4. What did you like best about the course?

I liked the quizzes, they gave an opportunity to test my own knowledge to see how well my studies worked.

5. What did you dislike most?

I thought the essay description were short and left a lot of room for interpretation. If that is how you wanted it to be it's fine. But for me, personally, I would like a more descriptive assignment.

6. Name one thing that would make this course better for you.

See Q5

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

Around 2-3 hours out of day

2. What was the most challenging aspect of this course?

Knowing the content for the in-class quizzes.

3. What, in your opinion, was the main goal / were the main goals of this course?

For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

5 - ACQUIRING KNOWLEDGE ABOUT THE HISTORY OF MATH
3 - LEARNING HOW TO TRANSLATE TEXTS INTO MODERN LANGUAGE
3 - DEVELOPING CRITICAL SKILLS.

4. What did you like best about the course?

The lectures are very interesting and not monotonous.
The students often laugh, and the content presented is varied.

5. What did you dislike most?

The translations and interpretations of text were difficult but I do know it's necessary.

6. Name one thing that would make this course better for you.

if there was a structured syllabus and explicit readings to do, that would be necessary for the exam.

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

about 9-10 h

2. What was the most challenging aspect of this course?

to make the essays good in the timelimit we had and to know what to study on for the quizzes.

3. What, in your opinion, was the main goal / were the main goals of this course?

For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

to get a knowledge of where the mathematics we use today come from.

4. What did you like best about the course?

- * That the lectures are worth going to, you learn a lot.
- * That you can pass the course (read the course when Jockum had it)

5. What did you dislike most?

short deadline for the essays, could be a few more days to write it.

6. Name one thing that would make this course better for you.

see question 5.

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

12 hrs.

2. What was the most challenging aspect of this course?

Finding original sources for essay 4 / project.
(primary)

3. What, in your opinion, was the main goal / were the main goals of this course?

For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

- understand how mathematics developed 4/5
- build research skills / essay writing. 4/5
 - ↳ interpreting sources.
 - ↳

4. What did you like best about the course?

- seeing the roots of mathematical ideas develop and how they relate to modern ~~exp~~ thinking.
- really liked the reading / interpreting the Babylonian / Egyptian.

5. What did you dislike most?

- maybe essay word limit too short to make full arguments. Or maybe this was just a fault of my writing - too wordy not concise enough.

6. Name one thing that would make this course better for you.

- more time on early mathematics / eastern mathematics, as this is the area I know least / am less exposed to (if the availability of sources allows).

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

4 hours of classes plus 6 hours of house work. Around 10 hours week

2. What was the most challenging aspect of this course?

The method of study. I'm used to learn equations, understanding the physics and solving the problem, but not used to read texts or even less historical ones. Writing in English is also difficult to me.

3. What, in your opinion, was the main goal / were the main goals of this course?

For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

5 Learning about how Mathematics developed.

3 Learning to analyse and understand texts and sources.

3 Learning to write essays and expose your own ideas.

4. What did you like best about the course?

I always wanted to practice my writing and it has been very refreshing for me to do something different, though it's been hard as I'm not used to it.

5. What did you dislike most?

I would have liked to learn more about the history of physics (as it is the course at my home university) because I'm not that much into maths. But that's not the professor's fault and in any case it was very interesting and challenging.

6. Name one thing that would make this course better for you.

- some lecture notes or summary of the whole course instead of so many different sources. Though maybe that's the best way to get ready for the real world and real research.
- less texts and more tempo to memorize maybe. Just because I'm not very good at interpretation and analysing texts.

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

Around 25 h.

2. What was the most challenging aspect of this course?

Analysing texts, writing.

3. What, in your opinion, was the main goal / were the main goals of this course?
For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

Analysis of texts	5	Writing	4
Critical reading	4		
Discussions	4		

4. What did you like best about the course?

Discussions

Reading texts

Interpretations

5. What did you dislike most?

Nothing really.

6. Name one thing that would make this course better for you.

Some more preparations on what is expected in the essays.

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

15 h

2. What was the most challenging aspect of this course?

Studera inför quizarna.

3. What, in your opinion, was the main goal / were the main goals of this course?
For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

Få en grundläggande förståelse av matematikens historia (4)

Förstå hur synen på matematik förändrats genom historien (4)

4. What did you like best about the course?

Jag uppskattade diskussioner och föreläsningar om filosofiska insikningar på matematik genom historien och den egna sökningen av information till essäerna.

5. What did you dislike most?

Jag upplever att kursen är något för Europa centrerad.

6. Name one thing that would make this course better for you.

Mer exempel på matematiker och idéer från andra världsdelar

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

average 12 hours a week

2. What was the most challenging aspect of this course?

There is a lot of information to remember, lots of history and facts, and essay 4

3. What, in your opinion, was the main goal / were the main goals of this course?

For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

learn about historical mathematical events 5

learn to analyze (old) mathematical texts 4

learn to discuss bring arguments about math 3

4. What did you like best about the course?

The lectures, they were fun and learnt a lot from them

5. What did you dislike most?

Essay 11, didn't really feel fully prepared for it.

6. Name one thing that would make this course better for you.

Maybe if we could have gone through how to select mathematical source texts and talk more about, and prepare more for essay 4

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

Classes: 4h

Study at home: ~4h (more for essays, less when no essay)

2. What was the most challenging aspect of this course?

SF2725 Extended essay, I always find "vague" assignments hard. — ie. more freedom for me + formula the ques.
But good!

3. What, in your opinion, was the main goal / were the main goals of this course?

For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

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4. What did you like best about the course?

Classes were good, quizzes (but should give 1 pt each, not 2).

No overlapping assignments.

5. What did you dislike most?

Too much focus on meta topics during class, ie exams, essays, peer reviewing. Shouldn't take up that much time.

6. Name one thing that would make this course better for you.

I don't think you should be able to pass the exam beforehand, at least not without doing all assignments (I skipped essay 4 due to workload in other courses, and it seems like the most interesting one.)

Course questionnaire

SF2719/SF2725 The history of mathematics, T. Bauer

1. How many hours a week did you spend on this course on average?

10

2. What was the most challenging aspect of this course?

Studying for quizzes, especially if you had missed a lecture or two. It was hard to know the content.

3. What, in your opinion, was the main goal / were the main goals of this course?
For each goal, indicate on a scale of 1-5 (5=best) how well you think you have reached it.

- Learn mathematical history 3
- Learn to write essays 3

4. What did you like best about the course?

It was a clear structure, although a little complicated bonus point system.

It was not as difficult and scary as I've heard from older students, it felt "ag om." :)

5. What did you dislike most?

It was hard to study from home, so I had to attend lectures and thus couldn't plan my time.

Also, we talked a little too little about females. Are there no mathematical texts from women to read?

6. Name one thing that would make this course better for you.

Perhaps more time for some of the essays.
It felt a bit unbalanced with a lot of work when the essays were released and not so much work when we were peer reviewing.