Finite Element Methods, 5.0 c

Course code: 1TD253, Report code: 12015, 33%, DAG, NML, week: 44 - 02 Semester: Autumn 2015

Result

This evaluation is answered by 23% (12/52) of the respondents.

Please write summaries of the free-text responses for each question before you publish. Work with the course report will be facilitated if you have already written the summaries. Please note that free text responses must be examined trough a privacy perspective before they are published or printed. See guidelines for course evaluations.

Show course and programme filter

Welcome

Your views on the course is an important part of the course development. We hope you can give us feedback on things that should be developed and improved as well as things that works well and should be kept as it is. Concrete suggestions for improvement are very welcome.

Thanks for your help!
/Murtazo och Emilie

General Aspects

1: Which study program (or equivalent) are you registered on? Answers: 12

Answer options:

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Civil Engineering, Engineering Physics (F)	8 responses	67%	
2. Master Programme in Computational Science	3 responses	25%	
3. Single Subject Course	0 responses	0%	
4. Other programme	1 responses	8%	

2: What is your general view about the course? Answers: 11

Answer options: Median: 4 Mean: 4.2 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Very bad	0 responses	0%	
2.	0 responses	0%	
3.	1 responses	8%	
4.	7 responses	58%	
5. Very good	3 responses	25%	

3: What was the degree of difficulty — Answers: 12

Answer options: Median: 4 Mean: 3.8 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%
1. Very easy	0 responses	0%
2.	0 responses	0%
3.	3 responses	25%
4.	9 responses	75%
5. Very hard	0 responses	0%

4: How did the total amount of work on the course relate to the credits? — Answers: 12

Answer options: Median: 3.5 Mean: 3.5 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%
1. Very low	0 responses	0%
2.	1 responses	8%
3.	5 responses	42%
4.	5 responses	42%
5. Very high	1 responses	8%

5: Is the course relevant to your education? — Answers: 12

Answer options: Median: 4.5 Mean: 4.5 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%
1. Not at all	0 responses	0%
2.	0 responses	0%
3.	0 responses	0%
4.	6 responses	50%
5. To a very high extent	6 responses	50%

6: Has the course been stimulating and interesting? — Answers: 12

Answer options: Median: 4 Mean: 3.8 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%
1. Not at all	0 responses	0%
2.	1 responses	8%
3.	2 responses	17%
4.	7 responses	58%
5. To a very high extent	2 responses	17%

7: Did the course administration (schedule etc) work? Answers: 12

Answer options: Median: 4 Mean: 4.1 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. No, not at all	0 responses	0%	
2.	0 responses	0%	
3.	2 responses	17%	
4.	7 responses	58%	
5. Yes, to a high degree	3 responses	25%	

8: Was your prior knowledge good enough for the course? Answers: 12

Answer options: Median: 5 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. No, not at all	0 responses	0%	
2.	0 responses	0%	
3.	4 responses	33%	
4.	1 responses	8%	
5. Yes, absolutely	7 responses	58%	

9: What has been particularly good in this course? Answers: 5

The assigments were good, however maybe assigment 2 was a bit to big. One could have gotten more parts for free.
Lektionerna var bra.
Very well structured and comprehensible.
the projects.
When I asked questions by email, I got good answers very fast, which was very helpful!

10: What are the most important specific improvements that could be made? Answers: 5

The "lektioner" were the best part, really good examples and i love that the solutions could be found online. An improvment to this course is if the lecture notes were also put up online. Another thing that might help is if there are actual solutions (with commentary) for previous exam. It would also help for the exam if you somewhere stated exactly what we need to learn and typical exam questions that we need to know to pass the course.
More information about what actual stuff that comes on the exam, since it's a pretty wide area overall. At least key points, and key excersizes should be recomended.
The assignment was great for the learning. But (with a capital B) the assignments was too time demanding. For 2 week I had to skip lectures and assignments in other courses just to get finished with the assignments in FEM.
Maybe it could be useful to spend a bit more time in relating the theory with the computer implementation.
I missed quite many lectures due to schedule collisions, and I think it would have been nice with some notes on the student portal from every lecture - at least a list of everything that you brought up in each lecture. Now it was quite difficult to know what was important in the book and sometimes it seemed like we were supposed to learn things that were not well explained in the book. Some additional notes for these topics would have been good to have on the student portal (e.g. artificial diffusion). For the assignments, more detailed explanations would have been good in some cases (e.g. Assignment 2: It was really hard to understand how to implement the RV method and how to calculate the gradient of u for the residual in the third part.) I did not like the structure of the exam: The G-questions were not very difficult, but it took a lot of time to solve them and it is very easy to make a mistake somewhere in the calculations, and therefore I think it's not fair to require 100% on these questions to pass the exam. Also, since it took very long time to solve the G-questions, I had very little time left to solve the other questions.

Learning Outcomes

To pass, the student should be able to

- explain fundamental concepts in mathematical modeling with partial differential equation, and fundamental properties for elliptic, parabolic and hyperbolic equations;
- formulate and with a computer solve second order elliptic boundary value problems in one spatial dimension for Dirichlet, Neumann and Robin boundary conditions using the finite element method;
- formulate and with a computer solve second order elliptic boundary value problems in two spatial dimensions with Dirichlet, Neumann, and Robin boundary conditions, using the finite element method;
- derive a priori and a posteriori error bounds for elliptic equations in one and two spatial dimensions, and be able to use these error bounds to construct adaptive algorithms for local mesh refinement.
- solve parabolic and hyperbolic partial differential equations using the finite element method in space and finite differences in time, and to compare different time stepping algorithms and choose appropriate algorithms for the problem at hand.
- use finite element software to solve more complicated problems, such as coupled systems of equations;
- evaluate different techniques for solving problems and be able to motivate when to use existing software and when to write new code.

11: Have you been informed about the learning outcomes during the course? Answers: 12

Answer options: Median: 5 Mean: 4.5 / 5

0. Do not know/not relevant/do not wish to answer	4 responses	33%	
1. No, not at all	0 responses	0%	
2.	0 responses	0%	
3.	1 responses	8%	
4.	2 responses	17%	
5. Yes, to a high degree	5 responses	42%	

12: In your opinion, the learning outcomes were met? Answers: 12

Answer options: Median: 4 Mean: 4.1 / 5

0. Do not know/not relevant/do not wish to answer	4 responses	33%	
1. Not agree at all	0 responses	0%	
2.	0 responses	0%	
3.	1 responses	8%	
4.	5 responses	42%	
5. Fully agree	2 responses	17%	

13: Comments related to learning outcomes: Answers: 1

Det är klart inom tentan att alla grunder skulle vara uppfyllda, och asignmenten tog väldigt mycket tid, som tog fokus bort från de viktiga teoridelarna.

Teaching

14: The teacher-student communication and cooperation has worked well? Answers: 12

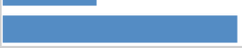
Answer options: Median: 4 Mean: 4.0 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not agree at all	0 responses	0%	
2.	1 responses	8%	
3.	3 responses	25%	
4.	3 responses	25%	
5. Fully agree	5 responses	42%	

Main Teacher: Murtazo Nazarov

15: The teaching was clear and well structured? Answers: 12

Answer options: Median: 4 Mean: 3.8 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not agree at all	1 responses	8%	
2.	1 responses	8%	
3.	3 responses	25%	
4.	2 responses	17%	
5. Fully agree	5 responses	42%	

16: The teaching was engaging — Answers: 12

Answer options: Median: 4 Mean: 3.8 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not agree at all	0 responses	0%	
2.	2 responses	17%	
3.	2 responses	17%	
4.	4 responses	33%	
5. Fully agree	4 responses	33%	

17: The teacher did get the course content across? — Answers: 12

Answer options: Median: 4 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not agree at all	0 responses	0%	
2.	0 responses	0%	
3.	2 responses	17%	
4.	5 responses	42%	
5. Fully agree	5 responses	42%	

Main Teacher: Emilie Blanc

18: The teaching was clear and well structured? — Answers: 12

Answer options: Median: 4.5 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not agree at all	0 responses	0%	
2.	1 responses	8%	
3.	0 responses	0%	
4.	5 responses	42%	
5. Fully agree	6 responses	50%	

19: The teaching was engaging — Answers: 12

Answer options: Median: 4 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not agree at all	0 responses	0%	
2.	0 responses	0%	
3.	1 responses	8%	
4.	6 responses	50%	
5. Fully agree	5 responses	42%	

20: The teacher did get the course content across? — Answers: 12

Answer options: Median: 4.5 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not agree at all	0 responses	0%	
2.	0 responses	0%	
3.	2 responses	17%	
4.	4 responses	33%	
5. Fully agree	6 responses	50%	

21: What did the teachers do particularly well in this course? — Answers: 4

- Emilie put all the solutions online, she is really good!!!
- Stort area, men man har fått bra lösningar på problem och hur man ska tänka.
- Very good and well paced explanations with lots of examples.
- Good with the fact that students could come to the offices and ask for personal help.

22: Is there anything in the teacher performance that should be improved? Answers: 3

Lecture notes by Murtazo Nazarov could be put online and it would also be good if a exam written by him was solved with commentary on a lecture and also put online.
Gärna lite bättre struktur med kommunikationen, då några lektioner/föreläsningar blev inställda. Och kanske bättre använding av tavlan, splittat och kaos är inte bra.
A bit more time for a recap of the course in the end lectures.

Learning activities

Different kinds of learning activities has been used througout the course. Evaluate how valuable these activities has been for your learning.

23: To what extent has the lectures contributed to your learning? Answers: 12

Answer options: Median: 4 Mean: 4.0 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not at all	0 responses	0%	
2.	1 responses	8%	
3.	2 responses	17%	
4.	5 responses	42%	
5. To a very high extent	4 responses	33%	

24: To what extent has the computer labs contributed to your learning? Answers: 12

Answer options: Median: 3 Mean: 3.3 / 5

0. Do not know/not relevant/do not wish to answer	1 responses	8%	
1. Not at all	1 responses	8%	
2.	2 responses	17%	
3.	4 responses	33%	
4.	1 responses	8%	
5. To a very high extent	3 responses	25%	

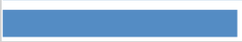
25: To what extent has the problem solving classes contributed to your learning? Answers: 12

Answer options: Median: 4 Mean: 3.8 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not at all	1 responses	8%	
2.	0 responses	0%	
3.	3 responses	25%	
4.	4 responses	33%	
5. To a very high extent	4 responses	33%	

26: To what extent has the assignments contributed to your learning? Answers: 12

Answer options: Median: 4 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	0 responses	0%	
1. Not at all	0 responses	0%	
2.	0 responses	0%	
3.	1 responses	8%	
4.	6 responses	50%	
5. To a very high extent	5 responses	42%	

27: Comments related to learning activities Answers: 2

Inlämningarna gjorde det mesta
Good combination.

Text books and course material

The text book *Larson, Mats G. and Bengzon, Fredrik: The Finite Element Method: Theory, Implementation and Applications* has been used in the course.

28: Has the text book been useful? Answers: 12

Answer options: Median: 5 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	1 responses	8%	
1. No, not at all	0 responses	0%	
2.	1 responses	8%	
3.	1 responses	8%	
4.	3 responses	25%	
5. Yes, to a high degree	6 responses	50%	

29: Has handouts such as slides been useful? Answers: 12

Answer options: Median: 4 Mean: 4.0 / 5

0. Do not know/not relevant/do not wish to answer	3 responses	25%	
1. No, not at all	0 responses	0%	
2.	1 responses	8%	
3.	2 responses	17%	
4.	2 responses	17%	
5. Yes, to a high degree	4 responses	33%	

30: Comments related to text books and course material Answers: 3

- It would be convenient to have the lecture notes as PDFs on studentportalen. There is a lot of math on the blackboard and it would help understanding if you did not have to write everything yourself.
- Inga slides, men lektionsuppgifter fanns alla fall. Slides på tursen vore bra att ha.
- The text book is excellent. Very useful and extremely comprehensible. I really liked that it had many references to details and code examples. I used it extensively and found it very helpful throughout the course.

Examination

31: Examinations accorded well with the content of the course. Answers: 12

Answer options: Median: 4 Mean: 4.1 / 5

0. Do not know/not relevant/do not wish to answer	2 responses	17%	
1. Do not agree at all	0 responses	0%	
2.	0 responses	0%	
3.	1 responses	8%	
4.	7 responses	58%	
5. Agree completely	2 responses	17%	

Innehöll exakt allt, fastän det kan vara svårt att studera för den då.

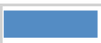
32: Examinations have given me fair opportunities to demonstrate my knowledge. Answers: 12

Answer options: Median: 3 Mean: 3.3 / 5

0. Do not know/not relevant/do not wish to answer	2 responses	17%	
1. Do not agree at all	0 responses	0%	
2.	1 responses	8%	
3.	6 responses	50%	
4.	2 responses	17%	
5. Agree completely	1 responses	8%	

33: What was the degree of difficulty of the examinations ? Answers: 12

Answer options: Median: 4.5 Mean: 4.3 / 5

0. Do not know/not relevant/do not wish to answer	2 responses	17%	
1. Very easy	0 responses	0%	
2.	0 responses	0%	
3.	2 responses	17%	
4.	3 responses	25%	
5. Very hard	5 responses	42%	

Grundsaker var ok nivå, men man visst inte direkt vad man skulle kolla på. Så man gav upp då man inte studerat ett av områdena/uppgift innan tentan då man ändå failar.

The questions did cover the material in the course, but kind of a shock as it did not cover the same material as last years exam, which where were me and my friends put most of their efforts in learning.

34: Comments related to examinations Answers: 4

havent done exam yet.
Maybe have a point based exam and not passing questions, since mastering all areas is good, but you should be able to learn the weak areas through the assignments.
Some of the problems to pass were difficult and some of the problems for a higher grade was really easy. I think one should just have a simple point system for the exam. No special problems to pass.
I think the exam was difficult since it seems very difficult to get 100 % on the G-questions, even if each question was not very difficult.

Summary of free-text responses/comments for the whole course evaluation