TEK/NAT Kursrapport

Kurs	*Kurskod*	*Poäng*	*År*	*Start v.*
Beröringsfria mätmetoder	5FY197	7,50	2020	45

Institution	*Antal registrerade (män/kvinnor)*	*Antal aktiva studenter (deltagit i minst en examinerande del)*
Institutionen för fysik	4 (2/2)	-

Genomströmning (i %) och betygsutfall efter första tillfälle för examination (för varje betyg som satts på kursen ange antal som uppnått detta på formen ???

Genomströmning: 75% Betyg: 4(3)

Hur mycket schemalagd lärar-/assistent-ledd tid har studenten tillgång till på kursen?

lectures - 26 KT, computer labs - 8 KT, labs - 4 weeks at 50%, student presentations - 6 KT

Hur är undervisningen upplagd?

Lectures, student presentations, supervision of experimental lab work

För vart och ett av lärmålen (FSR:en) i kursplanen, beskriv kortfattat hur det examineras.

definiera och ingående redogöra för optiska mättekniker för beröringsfria mätningar av läge, avstånd, förflyttning, hastighet, vibrationer, och brytningsindex

on the exam and in the lab assignments

ge en fördjupad förklaring om induktiva, kapacitiva och akustiska mättekniker för beröringsfri materialanalys och mätning av läge, hastighet, vinkel, tjocklek, elektrisk konduktivitet, magnetiskt flöde, vätskeflöde, tryck och temperatur

on the exam and in the lab assignments

självständigt implementera kunskaper om instrumentering, t.ex. för ljuskällor och detektorer, datainsamling och dataanalys.

in the lab assignments

visa förmåga att självständigt planera och med adekvata metoder genomföra experimentella arbetsuppgifter

in the lab assignments

lösa avancerade uppgifter i laboratoriemiljö

in the lab assignments

självständigt konstruera elektroniska system och datainsamlingssystem

in the lab assignments

skriva vetenskapliga rapporter

in the lab assignments

muntligt redovisa resultat av vetenskapligt arbete.

during student presentations

genomföra ett självständigt projektarbete

in the lab assignments

samarbeta med andra personer

in the lab assignments and during student presentations

kritiskt resonera kring och värdera sin egen insats i laborations- och projektarbete

in the lab assignments and during student presentations

på ett korrekt sätt citera andras vetenskapliga arbete

in the lab assignments

uppvisa medvetenhet om etiska aspekter på vetenskapligt arbete som t.ex. ett korrekt förhållningssätt till fusk och plagiat.

in the lab assignments and during student presentations

Beskriv hur betygssättningen på kursen fungerar. (Vilka betyg ges på kursen och hur sker bedömningen, dvs vilka delar betygssätts och hur vägs de samman? Finns det skrivtliga betygskriterier och/eller lärmål (FSR) för de olika betygen?)

Laboratory part (3.5 hp) is graded based on the reports written by students after each assignment and the oral presentation of the last assignment, the maximum number of points is 13, the grade limits are: 5 points for 3; 8 points for 4; and 10 points for 5.
Theoretical part (4 hp) is graded based on a written exam, maximum number of points is 17, the grade limits are: 7 points for 3; 10 points for 4; and 14 points for 5.
Final grade: The maximum number of points in the course is 30 (13 for the laboratory part and 17 for the written exam). The limits for the final grade are: 12 points for 3; 18 points for 4; and 24 points for 5. However, of these at least 5 points must be from the labs and 7 points must be from the written exam.

Samläses denna kurs med andra kurser??

Nej

Om ja, hur många?

Hur stor andel av kursen samläses?

Samläser flera program denna kurs?

Ja

Om ja, hur många?

3

Arbetar studenterna i projektform på kursen?

Ja

Om ja, uppskattad omfattning i poäng på projektdelen:

3.5

Antal projekt som varje student deltog i:

3

Antal studenter i projektgrupp:

1-2

Förväntades studenterna använda en projektmetodik för dokumentation och styrning (tex LIPS)?

Nej

Hur skedde indelning av studenter i projektgrupper?

Kursledning gjorde indelning

Har studenterna uppmanats föra projektdagbok?

Nej

Om ja, Har dagboken utgjort grund för examination?

Kursens samverkan med forskning

Lärare som bedriver forskning (>25% av tjänsten) är aktiva på kursen

Annan samverkansform, nämligen:

Kursens samverkan med näringsliv eller offentlig verksamhet

Ingen samverkan med näringsliv/offentlig verksamhet förekommer på kursen

Annan samverkansform, nämligen

Genomförda förändringar till detta kurstillfälle

Because of restrictions caused by the Covid-19 pandemic most of the interaction with students (lectures, lab supervision, seminars, exam) was digital.

Förändringsförslag från föregående kursrapport

If the pandemic continues, we will adjust the course to the restrictions.

Lärare

Information om inblandade lärare

Kursansvarig

Aleksandra Foltynowicz-Matyba

Antal övrig personal som ej föreläser

5

Antal övriga föreläsare

1

Hur stor del av den schemalagda tiden på kursen undervisas av forskande lärare (dvs lärare med mer än 25% forskning i sin tjänst)?

100%

Hur stor del av den schemalagda tiden på kursen undervisas av lärare verksamma i näringsliv/offentlig verksamhet (dvs lärare med mer än 25% av sin tjänst förlagd till näringsliv/offentlig verksamhet)?

0

Kursvärd.

Totalt antal svarande

5

Sammanställningsdatum

2021-01-14

När genomfördes kursvärderingen?

Efter genomfört första examinationstillfälle

För varje lärmål på kursen ange hur stor del av de studerande som uppger att det har behandlats på kursen - ange svaret i procent på formen
har behandlats/har inte behandlats/vet ej

definiera och ingående redogöra för optiska mättekniker för beröringsfria mätningar av läge, avstånd, förflyttning, hastighet, vibrationer, och brytningsindex

100/0/0

ge en fördjupad förklaring om induktiva, kapacitiva och akustiska mättekniker för beröringsfri materialanalys och mätning av läge, hastighet, vinkel, tjocklek, elektrisk konduktivitet, magnetiskt flöde, vätskeflöde, tryck och temperatur

100/0/0

självständigt implementera kunskaper om instrumentering, t.ex. för ljuskällor och detektorer, datainsamling och dataanalys.

100/0/0

visa förmåga att självständigt planera och med adekvata metoder genomföra experimentella arbetsuppgifter

100/0/0

lösa avancerade uppgifter i laboratoriemiljö

100/0/0

självständigt konstruera elektroniska system och datainsamlingssystem

100/0/0

skriva vetenskapliga rapporter

100/0/0

muntligt redovisa resultat av vetenskapligt arbete.

100/0/0

genomföra ett självständigt projektarbete

100/0/0

samarbeta med andra personer

100/0/0

kritiskt resonera kring och värdera sin egen insats i laborations- och projektarbete

100/0/0

på ett korrekt sätt citera andras vetenskapliga arbete

100/0/0

uppvisa medvetenhet om etiska aspekter på vetenskapligt arbete som t.ex. ett korrekt förhållningssätt till fusk och plagiat.

100/0/0

Sammanf.

Sammanfattning av åsikterna i kursvärderingen - positivt och negativt kring föreläsningar, seminarier, grupparbeten, laborationer, examination etc

The overall quality of the course was rated 4.2/5.
The students spent on average 30 hours per week on the course.
The students gave 4.4/5 on how they were treated during the course.

Lectures:
100% of students had sufficient prior knowledge to follow the lectures.

How has the teaching been?
- Good, the zoom lectures have worked well.
- Online, but quite good.
- Very good that problems for each lecture were provided.
- Good.

Course literature:
Course literature was rated 3.4/5.

Comments:
- haven't used it

The availability of information and material was rated 4.4/5.

Examination form:
- A bit tricky but since it is a special year it feel okay.
- Understandable to do it that way, but it will probably take quite longer than a "normal" exam.
- Reasonable to have exam + reports/seminar in this type of course. The online corona-exam worked just fine.

Suggestions for improvements:
- Lecture slides: Sometimes it was confusing that the lecture notes were screenshotted on the slides, because it is only possible to see a really small part of the theory. On the whiteboard it is possible to look at steps that were made a few minutes ago. It would be easier to follow, if the whole handwritten lecture notes were shared during the lecture instead of the presentation.
- Some of the variables that are connected in the laboratory part are referenced to as different thing in the lectures and never really connected. This made it harder to connect them in the lab repport. If one follows the variables in the equations form the lectures and tries to directly implement them into the repport one gets different variables for the same things. I found it quite hard to trust that they where the same thing when its never mentioned on the lectures but I understand if that's something that happen because of my lac of knowledge in the subject.
- But if you need to give another online exam we (students) shouldn't need to hear each other, maybe the breakout-rooms feature could be used in zoom to separate student environments? Personally I think it would be enough just to monitor the students with their computers out of reach, to avoid most cheating, but I understand your solution is more safe.

Laboratory sessions:
80% of students had sufficient prior knowledge to follow the lab sessions.

What was missing:
-information about the equipment, but it was easy to google it.

The availability and function of equipment was rated 4.4/5.

Comments:
-I would have preferred to have safety glasses for the HeNe laser labs.

Lab supervision was rated 3.6/5.

Comments:
- Hard to get ahold on the supervisior some times. The correction of the repport were quite harsh at times. Some of the comments are repeated throughout and sometimes seems a bit sassy. Since the sentences are handwritten the where hard to read and some times overlapped. Inconsistence is using squares or underline to reference to the text. How to reference to a webbadress is laking in the examples, need to be updated to include authors. Also got some pointers on pictures and calibrations that were missing from the report but aren't present in the template.
- It's quite difficult to have the supervision via Zoom/online and not in person, because most of the time it's a lot easier if the supervisor can just have a look.
- Slow response from the supervisor during "fiber length lab". One day we had no response during the whole day. The day after he was also very late for two appointed meetings. There was a problem in the LabView-program which we hardly could have found by ourself, with our limited LabView-experience.

Overall opinion about the laboratories was 3.8/5.

Comments:
- stressful and a lot to do in short time, fun experiments that one would want more time with to do go back and improve the measurement and play around with a bit. Especially the ones where you could measure in different ways.

Suggestions for improvement of the laboratory sessions:
- Sometimes we made some small mistake that caused that we needed much more time. Probably the supervisors would have seen these mistakes directly when looking at the setup in person. Maybe it would be a nice idea, if the supervisors have a short look on the
setup in person while the students are not on campus.
- Would be fun to be able to redo a lab after the exam. In our case we have the exam om Wednesday, to redo the second lab on Thursday and Friday after getting the feedback from the other groups would be a fun exercise, but count hard to find the time.
- It would be nice to revise the provided templates or just delete them if the students are not supposed to follow them (partly). Esp. if the structure is not as wished/stated in the lab information talk.
- The schedules are quite tight, so it's worth a lot with a relatively fast response from the supervisors.

Lärarnas synpunkter på kursens innehåll och genomförande

Concerning comments to the lectures:
1. The hand-written lecture notes are put on Cambro before each lecture, so the students can follow them while listening to the online lectures. Moreover, all lectures are recorded, so one can always go back and listen again to the parts that were not clear.
2. The comment about the difference between variables used on the lectures and in the labs is not clear to us.

Concerning the exam:
We understand that the format of the exam was not optimal, but at that point we believed it is better go have it via Zoom than postpone it. One teacher cannot manage multiple break-out rooms.

Concerning the lab supervision:
We are sorry to hear that the students found the laboratory supervision insufficient. The supervision was done mostly by Zoom to limit the number of physical meetings between the supervisors and students. This is not optimum, but again, it is dictated by the pandemic. We will try to improve that next time. If one supervisor is not responding, we ask the students to contact the other supervisor, or the lecturer. I (Aleksandra) could have helped, but I was never contacted by any student.

Concerning the reports:
The reports are corrected according to the rules outlined in the document 'Grading of the reports'. I have re-checked the templates, and do not find discrepancies between what is in them and how the reports are graded. Some level of flexibility is left to the students, since they perform the tasks in different ways, which require different ways of presenting.

We are glad that some students would like to continue working on the projects. We find this request hard to incorporate into the course, but we do hope the students will be able to apply the knowledge gained in this course in their future work.

Förslag till nästa kurstillfälle - ange vem som ansvarar för förändringen

Laser goggles will be provided.
Comments to the reports in the optical labs will be provided in digital form.

Bör kursplanen ändras till nästa kurstillfälle - vem ansvarar i så fall för att förändringen görs?

no

Granskn.

Granskare lärare (CAS-identitet)

alafoz03 [Aleksandra Foltynowicz Matyba]

Granskare student (CAS-identitet)

fres0006 [Fredrik Wall Eskilsson]

Granskare studieadministratör (CAS-identitet)

cana0007 [Carolina Näslund]

Eventuella kommentarer på granskningsprocessen