Report - MG2028 & MG2128 - 2021-04-30

Respondents: 1
Answer Count: 1
Answer Frequency: 100.00%

Please note that there is only one respondent to this form: the person that performs the course analysis.

Course analysis carried out by (name, e-mail):

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DESCRIPTION OF THE COURSE EVALUATION PROCESS

Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.

LEQ-enkät (LEQ 22) aktiverades 2020-12-10 och var aktiv t o m 2021-01-31. Enkäten besvarades av 36 av de totalt 98 studenter som var aktiva deltagare i de två kursversionerna MG2028 & MG2128. Vi träffade dessutom varje student vid 5-10 tillfällen under handledning och redovisning av datorövningar och handledning av inlämningsuppgifter, och vid dessa tillfällen fick vi också återkoppling kring hur kursen fungerat.

Svarsfrekvensen var betydligt högre på MG2128, 19 av 38 aktiva studenter, än på MG2028, med 17 svar från 63 aktiva studenter. Detta tror vi beror på att de olika studentkategorierna i de två kurserna, där de som läser MG2128 huvudsakligen är direktantagna Masterstudenter, utländska utbytesstudenter och spridda studenter från andra KTH-program än M, P och BD, medan de som läser MG2028 i första hand är civilingenjörsstudenter, som kanske i större utsträckning känner en viss trötthet inför alla kursenkäter.

The course evaluation questionnaire was published on 2020-12-10 and was active until 2021-01-31. In total, 36 of 98 students who actively participated in the two course versions MG2028 and MG2128 answered the questionnaire. Besides this, we met every student at 5-10 times for supervision and presentation of computer exercises and help with homework assignments. During these meetings, we also got feedback from the students on how the course has been received.

The rate of answers was considerably higher in MG2128, with 19 answers from 38 active students, than in MG2028, where there were 17 answers from 63 active students. We believe that the reason for these differences is the different categories of students in the two courses. MG2128 has predominantly Master students who have been admitted directly to the Master programme, and some international exchange students and odd students from other 5-year engineering programmes, whereas the students of MG2028 are mostly 5-year engineering students in Mechanical Engineering, Design and Product Realisation and Materials Design, who may have a less positive attitude to course questionnaires, as they have encountered for a long time already.

DESCRIPTION OF MEETINGS WITH STUDENTS

Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)

Inga specifika möten för att inhämta studenternas synpunkter har arrangerats, utöver schemalagda övnings- och labbtillfällen.

No dedicated meetings with students have been arranged, besides the scheduled classes and exercises.

COURSE DESIGN
Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

MG2128 inleds med fyra övningar i Grundläggande CAD, som motsvarar kursmomentet Grundläggande CAD i kurserna MF1001, MF1061 & MG1028 innan den andra kursversionen MG2028 startar. Alla kursaktiviteter och alla examinationsmoment är därefter gemensamma för de två kurserna och desamma som under tidigare år. De gemensamma delarna är, efter en inledande fas där vi repeterar och bygger på CAD-kunskaperna, indelade i olika teman, kring olika slags IT-verktyg som används i en industriell produktframtagningsprocess, där varje tema åtminstone innehåller en föreläsning med introduktion till temat eller en gästföreläsning med föreläsare från industri eller forskning, som presenterar sin syn på ämnet, samt en eller i något fall två lärarledda datorlaborationer. Utöver dessa schemalagda aktiviteter ingår ett antal obligatoriska och betygshöjande frivilliga inlämningsuppgifter som utförs självständigt utanför schemalagd tid. Mycket av arbetet i kursen är praktiskt arbete vid dator, och detta har i första hand genomförts i institutionens egna datorsalar.

Med anledning av Covid-19 har alla föreläsningar genomförts online(kursintroduktionsföreläsning, temaföreläsningar och gästföreläsningar) eller spelats in i förväg och gjorts tillgängliga via Canvas (introduktion till och genomgång av datorövningar). Gästföreläsningar av inbjudna industrirepresentanter har bara kunnat följas direkt, och inte spelats in, då viss information som tas upp under dessa inte får spridas. Där har i stället presentationerna i efterhand redigerats av föreläsaren och gjorts tillgängliga via Canvas, efter föreläsningen.

Alla datorövningar som innebär praktiskt arbete med IT-verktygen har genomförts på Campus i våra egna datorsalar, med Covid-19-anpassning. Detta har inneburit att studenterna arbetat enskilt vid varsin dator, i stället för parvis, som varit det normala under tidigare kursomgångar. Inför varje övningstillfälle har studenterna fått skriva under ett intyg om att de känt sig helt friska och att de kan bli avvisade om de uppvisat några sjukdomssymtom. Dessutom har handsprit funnits tillgänglig i datorsalarna med uppmaning att använda den. Tack vare detta har vi kunnat förhindra att mer än en mindre grupp av studenter tvingats i katrantän, vid de fåtaliga konstaterade Covid-19-fall som vi haft under kursen. I ett fall var det en student deltog i en datorövning under förmiddagen, som senare samma dag fick sjukdomssymtom. De studenter och lärare som varit i samma sal som den smittade studenten tvingades då att stanna hemma minst en vecka.Detta innebar att vi fick förskjuta de praktiska inslagen i kursenen vecka framåt, men det fanns utrymme för detta i schemat utan att något annat kursmoment behövde ställas in.

I den mån det varit möjligt med hänsyn till avtal med programvaruleverantörer, har vi också tillhandahållit många av de programvaror/IT-verktyg som vi använder i kursen, för nedladdning och installation på egen dator. Detta har gjort att en del studenter kunnat göra datorövningarna och inlämningsuppgifterna utan att behöva komma in till Campus annat än för att redovisa dem. Flertalet har dock valt att komma in till Campus och arbeta på plats, för att få träffa kamrater och kunna få hjälp med övningarna snabbt och smidigt.

Vi har också genomfört några förändringar i kursinnehållet och kursupplägget jämfört med tidigare kursomgångar, i enlighet med vad vi pekade ut som prioriterad kursutveckling i kursanalysen för förra årets kursomgångar:

- CAM-programmet GibbsCAM har uppgraderats till senaste version, vilket innebar att instruktionerna för två av datorövningarna måste skrivas om helt och hållet, då användargränssnittet och funktionerna ändrats radikalt sedan tidigare versioner av programmet.
- Vi har haft två nya teman för gästföreläsningar av industrirepresentanter jämfört med tidigare år.
- Vi tidigarelade temat och datorövningen i produktkonfigurering för att kunna sätta igång den inlämningsuppgiften tidigare.

Vi hade också för avsikt att göra detsamma med CAM-temat och tillhörande inlämningsuppgift, men installation av den nya programvaruversionen och omskrivning av övningsinstruktionerna drog ut på tiden, så vi blev tvungna att senarelägga delar av detta tema, för att hinna med.

MG2128 starts with four exercises in Introductory CAD corresponding to the course module on Introductory CAD in courses MF1001, MF1061 & MG1028, before the other course, MG2028 starts. From then on, all course activities and all examination modules/assessments are common to the two courses. The common parts are, after an initial phase where CAD knowledge and skills are reviewed and extended, the course is divided into different topical themes, related to different IT tools used in industrial product realisation processes. Each theme includes at least one lecture with introduction to the theme or a guest lecture with invited speakers from industry and academia, talking about their views and experiences on the topic, and one or in one case two computer exercises with supervision by teachers and assistants. In addition to these scheduled activities, there are a number of compulsory and voluntary homework assignments, where the latter can be used to raise the final grade on the course, all of which have to be done outside scheduled classes. Much of the work in the course is practice in using different softwares/IT tools, and these sessions mostly have to be carried out in our own computer labs, due to licensing issues.

Covid-19 has forced us to give all lectures online (course introduction, theme and guest lectures), or been recorded in advance and distributed via Canvas (introduction to computer exercises). Guest lectures by invited speakers from industry have not been recorded, as they often present sensitive information. Instead, the presentations given at these lectures have been edited and subsequently published for download from Canvas, after the conclusion of the lecture.

All computer exercises where students work actively with different software packages have been carried out in our own computer labs, with measures taken with respect to Covid-19. Students have worked individually at each computer, not in pairs as have been the normal during previous course offerings. Prior to each exercise, students have signed a form certifying that they feel well, and that they can be asked to leave if they display symptoms of being ill. Bottles of hand sanitizer have been available in the computer labs and students have been encouraged to use it. Thanks to these preventive measures, we have been able to limit the consequences in the few cases of Covid-19 that have occurred during the course. In one case, students and teachers who had been in the same computer lab as a student who fell ill later that day, were quarantined for a week, which meant postponing all on-campus course activities for a week, but there was enough slack in the schedule to handle this delay without any consequences.

As much as possible, with respect to software agreements, we have made the different IT tools/software packages available to students for download and installation on their own computers. Thereby, students have been given the possibility to stay at home to carry out the exercise, and only come to Campus to have the result assessed. The majority of students have however opted to come to campus to see friends and to get instant help from teachers.

We have also made some changes to the course in accordance with the prioritised course developments stated in last year´s course analysis:

- The CAM software, GibbsCAM, has been uppgraded to the most recent version, which has meant completely re-writing the instructions for two of the computer exercises, as the user interface and functions of the software hade been given a major overhaul and update.
- Two new guest lecture topics were introduced this year, on "CAD data quality and communication" and on "Geometry assurance".
- The voluntary assignment in product configuration was distributed earlier.

The same was planned for the CAM voluntary assignment. However, due to the major changes in GibbsCAM, we had to delay that assignment and publish it a few weeks later than intended.

THE STUDENTS' WORKLOAD

Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If these is a significant deviation from the expected, what can be the reason?

I snitt ca 7-8h/vecka, med ett snitt för MG2028 på ca 7h/vecka, medan MG2128 har ett snitt på drygt 8h/vecka, Detta innebär om man räknar med alla kursveckor en arbetsbelastning som ungefär motsvarar 40h/1,5 hp. För att få ett godkänt betyg på kursen, så krävs förmodligen mindre tid än dessa genomsnitt, medan de studenter som siktar mot ett högt slutbetyg (A eller B), oftast lägger ner betydligt mer tid på kursen än genomsnittet.

Skillnaden mellan de två kurserna kan med stor sannolikhet förklaras av de olika student-kategorierna i respektive kurs. Studenterna på MG2028 är mestadels svenska civilingenjörs-studenter som fäster mindre vikt vid betyg än de studenter som läser MG2128, som mestadels är direktantagna Master-studenter, ofta från andra länder, och för dem är betygen vanligen viktigare. Detta visar sig också i de genomsnittliga betygen på respektive kurs, där medelbetyget för MG2128 är högre än för MG2028.

In average, students spend 7-8h/week on the course, with about 7 h/week for MG2028 and just over 8h/week for MG2128. This means that the average workload, reasonably well correspond to 40h/1,5 cr. To pass the course with the lowest passing grade, you probably need less hours than the average, but students who aim at a high grade (A or B), typically have to spend much more time than the average for the course.

The difference between the two courses can most likely be explained by the different student categories in the courses. MG2028 students are typically Swedish 5-year engineering students, who are less concerned about grades than the students of MG2128 that are mostly students that were admitted directly to a 2-year Master programme, and many of these students are from countries where the grades are usually more important. That is also shown in the average grades for the two courses, where students of MG2128 get higher grades than those in MG2028.

THE STUDENTS' RESULTS

How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?

Vid den tidpunkt då detta skrivs (30/4) är såväl examinationsgrad som prestationsgrad ungefär desamma som vid samma tidpunkt tidigare år. Samtliga 101 aktiva studenter på de två kurserna har slutfört alla obligatoriska datorövningar, och 91 av 101 studenter har fått sitt slutbetyg på kursen, och ytterligare en handfull har bara en enstaka komplettering av en inlämningsuppgift kvar att slutföra.

When this course analysis is written (April 30) both the number of students that have completed the course and share of possible credits reported are about the same as at the same time during previous year. All 101 active students in the two courses have completed all the compulsory lab exercises, and 91 out of 101 active students have had their final grade reported, and another handful, have submitted everything to get a final grade, but they have a single assignment to revise before they are finished.

STUDENTS´ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

På frågan om vad som var det bästa med kursen var de vanligaste svaren datorövningarna och de många programvaror som man får pröva på att använda. Ytterligare punkter som togs upp av flera som det bästa var lärarnas tillgänglighet och kursens organisation.

Det vanligaste förslaget till förbättringar var "Ingenting". Några studenter ville också att de betygshöjande uppgifterna skulle delas ut tidigare, men vi håller inte med, utom i fallet med CAM-uppgiften som blev försenad pga en stööre omarbetning orsakad av en ny programversion.

De vanligaste råden till framtida kursdeltagare var att delta i alla schemalagda aktiviteter och att påbörja de betygshöjande inlämningsuppgifterna så snart som möjligt - prokrastinera inte!

På frågan om de skulle vilja lägga till något var det vanligaste svaret ett tack till oss lärare för kursen.

The best aspects of the course listed were the computer labs and the variety of software encountered. Teacher's availability and the organisation of the course were other points that were stated to be the best aspects of the course.

The most common proposal for improvements were "Nothing". There were also some suggestions that the voluntary assignments should be delivered earlier. We do not agree, except for the CAM assignment which was delayed due to the major overhaul caused by a new software version.

The most common advice to future participants were to attend all classes, and start early with the voluntary assignments - don't procrastinate!

To the question if they wanted to add something, most students just said thank you to us teachers for the course.

SUMMARY OF STUDENTS' OPINIONS

Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

Den alldeles övervägande delen av fritextkommentarer var väldigt positiva, och studenterna instämmer i mycket hög grad med i storrt sett alla påståenden i LEQ-enkäten. Möjligen är instämmandegraden generellt en aning lägre än de närmast föregående årens kursomgångar, men å andra sidan är fritextkommenrtarerna mer positiva än någonsin förut. Vi har inte fått några klagomål på våra bedömningar, trots att vi begärt komplettering och ny inlämning av många av inlämningsuppgifterna.

The vast majority of the answers to the open questions were very positive, and the students agree to a very large degree with the statements in the LEQ questionnaire. It is possible that the degree of agreement is fractionally lower than for the course offerings of the latest years, but on the other hand, the answers to the open questions are more positive than ever. We have had no complaints about the assessments of assignments, in spite of requesting revision and completion for many of the homework assignments.

OVERALL IMPRESSION

Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.

Vi är som helhet väldigt nöjda med denna kursomgång och speciellt med att så många studenter slutfört kursen inom den ordinarie tiden. Studenternas betyg var i genomsnitt aningen lägre än under de närmast föregående kursomgångarna, vilket vi tror var en pandemieffekt, då färre studenter var på plats i våra datorsalar, där de annars haft nära till hjälp.

De två gästföreläsningsteman som var nya för året var lyckade, med många positiva kommentarer från studenterna. Närvaron under gästföreläsningarna, där sådan registreras, har vbarit extremt bra, med rekordhöga 85% närvaro under den sista gästföreläsningen, trots att de

flesta studenterna inte behövde närvara för att uppfylla kursfordringarna. De omarbetade CAM-labbarna, anpassade till den nya programvaruversionen, genomfördes utan några större problem, om än två veckor senare än planerat.

Anpassningen av kursen till pandemisituationen har fungerat helt utan problem. Studenterna har fått jobba en och en vid datorerna, mot tidigare två och två, men det har resulterat i att alla har tvingats att arbeta aktivt med programmen, och vår uppfattning är att detta är en av anledningarna till att så många studenter slutfört kursen inom utsatt tid. Datorövningarna fick ställas in under en veckas tid då vi lärare satte oss i självkarantän efter att ha tillbringat en förmiddag nära en stuudent som senare samma dag fick sjukdomssymtom.

Vi har i de flesta fall lyckats tillhandahålla de programvaror som används under kursen för installation på studenternas egna datorer, vilket gjort att de i större utsträckning än under tidigare år, kunnat arbeta hemma med övningar och inlämningsuppgifter, och i mindre utsträckning behövt komma till campus, annat än för att redovisa sina uppgifter. Vi har dock noterat att många av studenterna har tyckt att det varit bra att få komma in till campus och träffa studiekamrater och lärare.

Pandemin tvingade oss också att ge föreläsningar on-line eller att spela in dem i förväg. Det senare gjordes först och främst med introduktionsföreläsningarna till de olika datorövningarna, och detta har tagits emot väldigt positivt av studenterna, så det kommer vi att fortsätta med under kommande kursomgångar.

We are generally quite satisfied with the course offering, and especially with large share of students that have completed all course requirements on time. The grades of the students were in average slightly lower than during the nearest previous course offerings, but we believe that this is an effect of the pandemic, which has meant that fewer students have spent time in our computer labs, where they usually have help available readily.

The introduction of two new guest lecture themes were quite successful, with many positive comments from the students. Attendance during online guest lectures, where attendance was recorded, has been extremely large, with a record high 85% attendance at the last guest lecture, although the majority of students did not have to attend to fulfill the course requirements. The revised CAM lab exercises, adapted to the new software version, were introduced and run without any major problems, albeit two weeks later than intended.

We have had very little problems with adaptation of the course for Covid-19. The students have been forced to work individually at the computers, while previously working in pairs. However, this has resulted in everybody working actively with the softwares, which we believe is one reason for so many students being able to complete the course on time. One week of lab exercises had to be postponed, as we teachers self-quarantined after a close encounter with a student who fell sick later the same day.

In many cases, we have been able to provide software used in the course to students, for installation on their own computers. This meant that they have been given the option to work more at home with the assignments in the course, avoiding travelling to campus, except for presentation of the results to us teachers. We have however noticed that many students have appreciated the possibility to work on campus as they meet fellow students and teachers in real life.

The pandemic has forced us to give lecture on-ine or to pre-record them. The latter was the case for the introduction lectures to the different computer exercises, and that has been very much appreciated by the students, so we will continue with that.

ANALYSIS

Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant difference in experience between:
- students identifying as female and male?
- international and national students?
- students with or without disabilities?

Det korta svaret på alla dessa frågor är "Nej"! Vi tycker att allt fungerat bra, och studenterna har instämt i mycket hög grad till nästan alla påståenden om lärmiljön. Vi kan notera en skillnad i betyg mellan svenska och internationella studenter, där de senare fått betydligt högre betyg, men vi tror att detta främst beror på skillnader i hur viktiga betygen är i olika kulturer.

The short answer to these questions is "No"! We believe that everything has worked well, and students have strongly agreed to almost all the statements about the learning environment. We can see a difference in grades between Swedish and international students, where the latter category have received considerably higher grades in average. However, we believe that that is more a reflection of the differences in importance of grades in different cultures.

PRIORITIZED COURSE DEVELOPMENT

What aspects of the course should be developed primaily? How can these aspects be developed in short and long term?

Vi ser inget behov av större förändringar, men arbetar med ständiga uppdateringar och förbättringar av kursen.

We do not see any need for major revisions, but we work with continuous updates and improvements of the course.

OTHER INFORMATION

Is there anything else you would like to add?

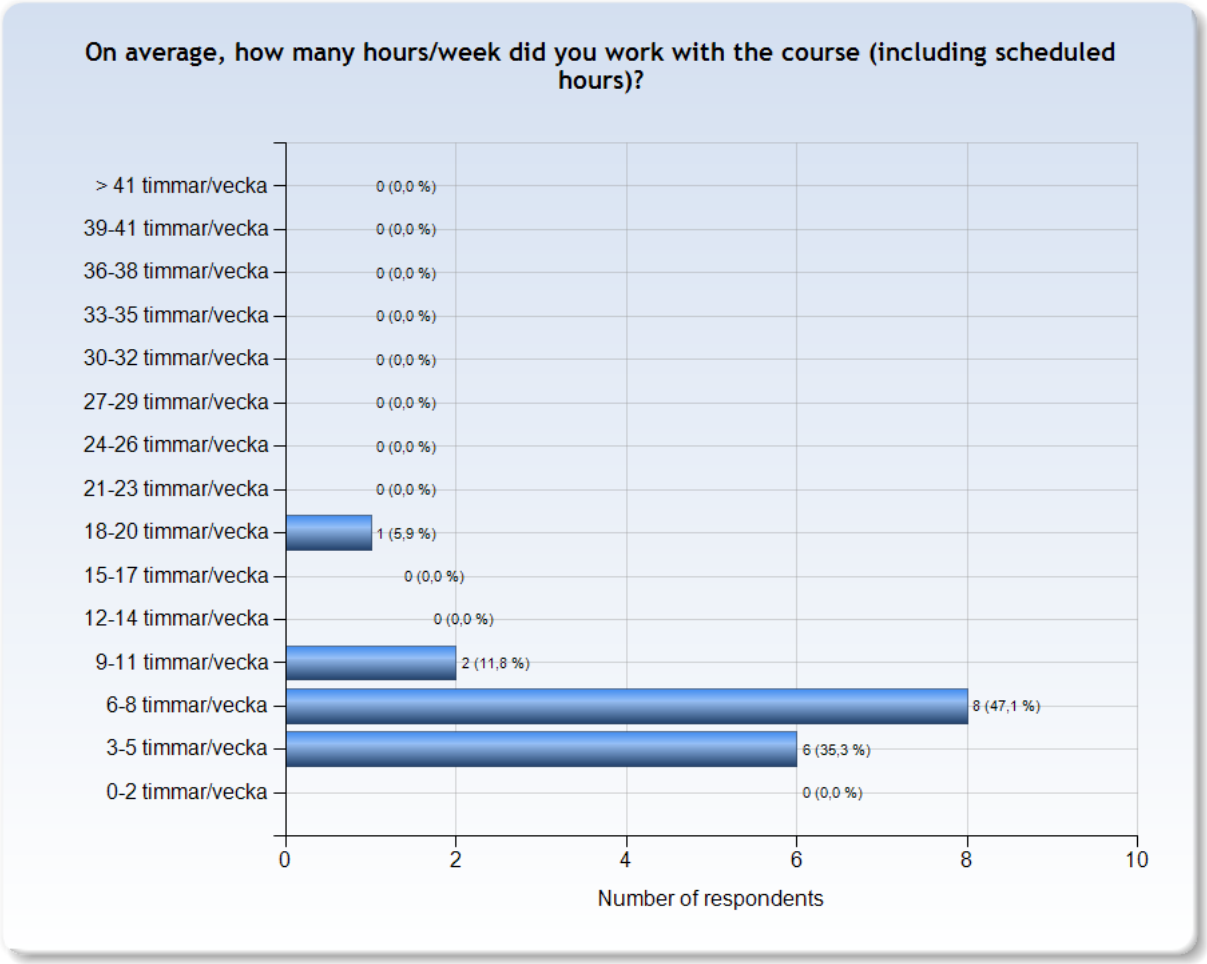
Det blev en mer omfattande kursanalys än avsett!

This course analysis became more extensive than intended!

MG2028 - 2021-01-31

Antal respondenter: 65
Antal svar: 17
Svarsfrekvens: 26,15 %

ESTIMATED WORKLOAD



Comments

Comments (I worked: 6-8 timmar/vecka)
Lagom belastning!
Tog inte mycket tid i början, 2 h föreläsning och 2-4 h laborationer. Veckan innan inlämning av Tacton uppgiften fick jag lägga ned väldigt mycket tid, men samtidigt kunde jag ha börjat lösa uppgiften tidigare.
Depending on how many voluntary assignments you fulfill, it is slightly higher.
About one lab and one lecture a week plus some assignments. most weeks I worked about 4 hours and others around 7-8 hours.

Comments (I worked: 9-11 timmar/vecka)
I studied this course for about 105 hours excluding the introduction for MG2128.

Comments (I worked: 18-20 timmar/vecka)
I genomsnitt gick 4 h per vecka till obligatoriska moment. Utöver det gick resterande för att göra betygshöjande uppgifter.

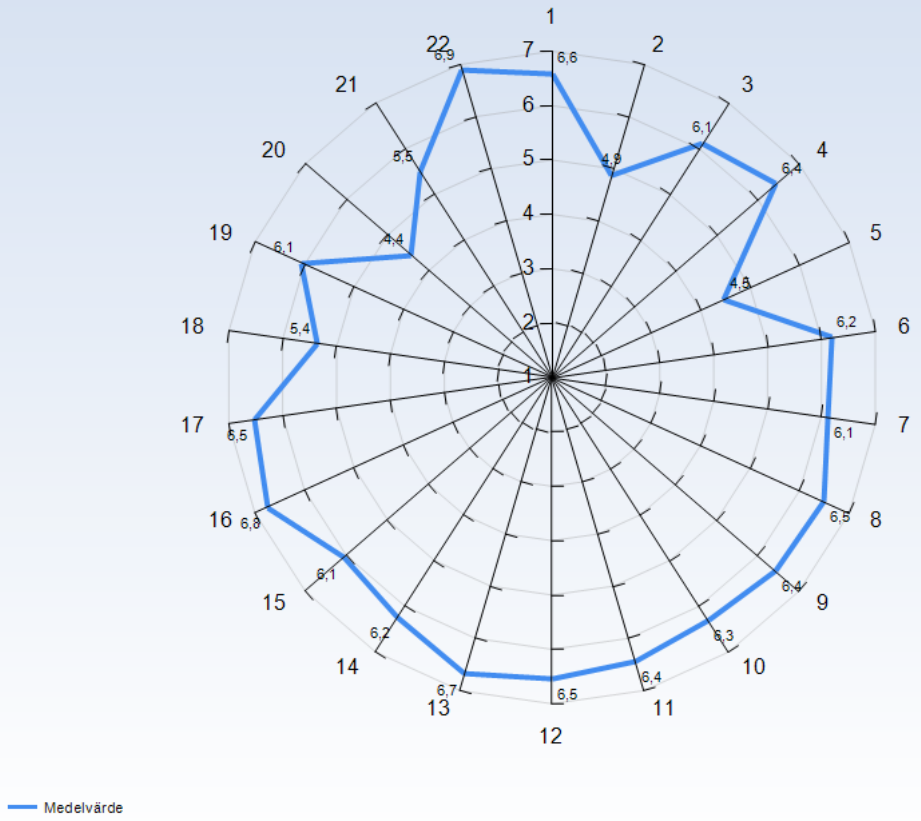
LEARNING EXPERIENCE

The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

1 = No, I strongly disagree with the statement
4 = I am neutral to the statement
7 = Yes, I strongly agree with the statement

Note! A group has to include at least 3 respondents in order to appear in a diagram.

Average response to LEQ statements - all respondents



KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

1. I worked with interesting issues (a)

Exploration and own experience

2. I explored parts of the subject on my own (a)
3. I was able to learn by trying out my own ideas (b)

Challenge

4. The course was challenging in a stimulating way (c)

Belonging

5. I felt togetherness with others on the course (d)
6. The atmosphere on the course was open and inclusive (d)

Comprehensibility - cognitive level

Clear goals and organization

7. The intended learning outcomes helped me to understand what I was expected to achieve (e)
8. The course was organized in a way that supported my learning (e)

Understanding of subject matter

9. I understood what the teachers were talking about (f)
10. I was able to learn from concrete examples that I could relate to (g)
11. Understanding of key concepts had high priority (h)

Constructive alignment

12. The course activities helped me to achieve the intended learning outcomes efficiently (i)
13. I understood what I was expected to learn in order to obtain a certain grade (i)

Feedback and security

14. I received regular feedback that helped me to see my progress (j)
15. I could practice and receive feedback without being graded (j)
16. The assessment on the course was fair and honest (k)

Manageability - instrumental level

Sufficient background knowledge

17. My background knowledge was sufficient to follow the course (f)

Time to reflect

18. I regularly spent time to reflect on what I learned (l)

Variation and participation

19. The course activities enabled me to learn in different ways (m)
20. I had opportunities to influence the course activities (m)

Collaboration

21. I was able to learn by collaborating and discussing with others (n)

Support

22. I was able to get support if I needed it (c)

Learning factors from the literature that LEQ intends to examine

We tend to learn most effectively (in ways that make a sustained, substantial, and positive influence on the way we think, reflect, act or feel) when:

a) We are trying to answer questions, solve problems or acquire skills that we find interesting, exciting or important

b) We are able to speculate, test ideas (intellectually or practically) and learn from experience, even before we know much about the subject

c) We are able to do so in a challenging and at the same time supportive environment

d) We feel that we are part of a community and believe that other people have confidence in our ability to learn

e) We understand the meaning of the intended learning outcomes, how the environment is organized, and what is expected of us

f) We have adequate prior knowledge to deal with the current learning situation

g) We are able to learn inductively by moving from concrete examples and experiences to general principles, rather than the reverse

h) We are challenged to develop a true understanding of key concepts and gradually create a coherent whole from the content

i) We believe that the work we are expected to do will help us to achieve the intended learning outcomes

j) We are able to try, fail, and receive feedback before, and separate from, each summative assessment of our efforts

k) We believe that our work will be considered in an honest and fair way

l) We have sufficient time for learning and devote the time needed to do so

m) We believe that we have control over our own learning, and not that we are being manipulated

n) We are able to collaborate with other learners struggling with the same problems

Literature

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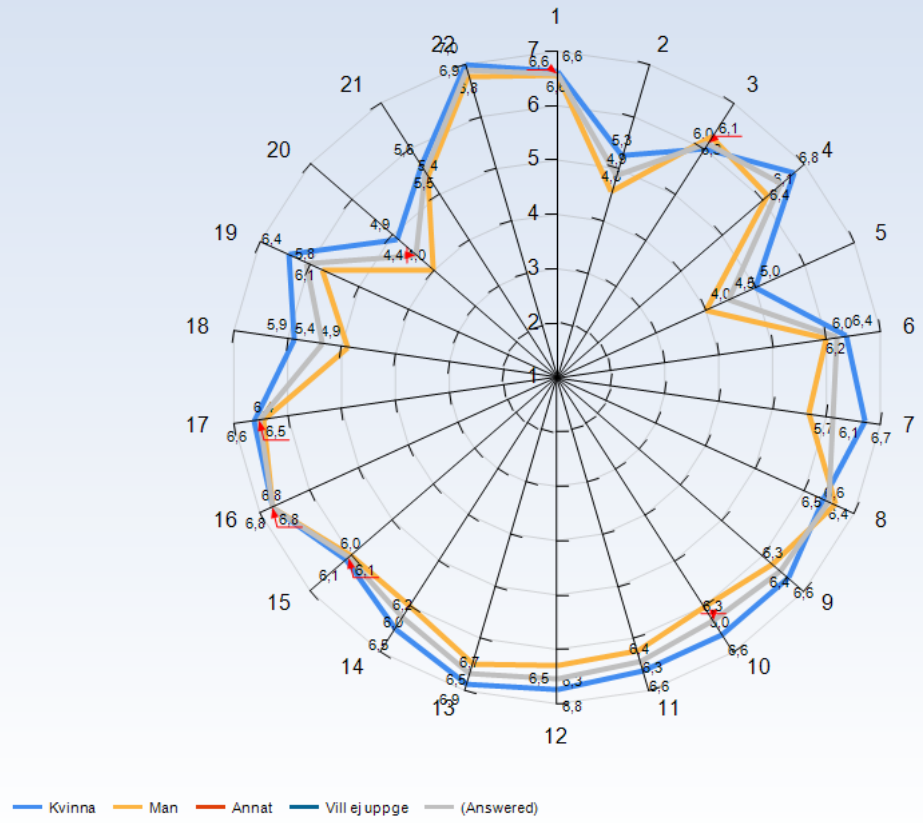
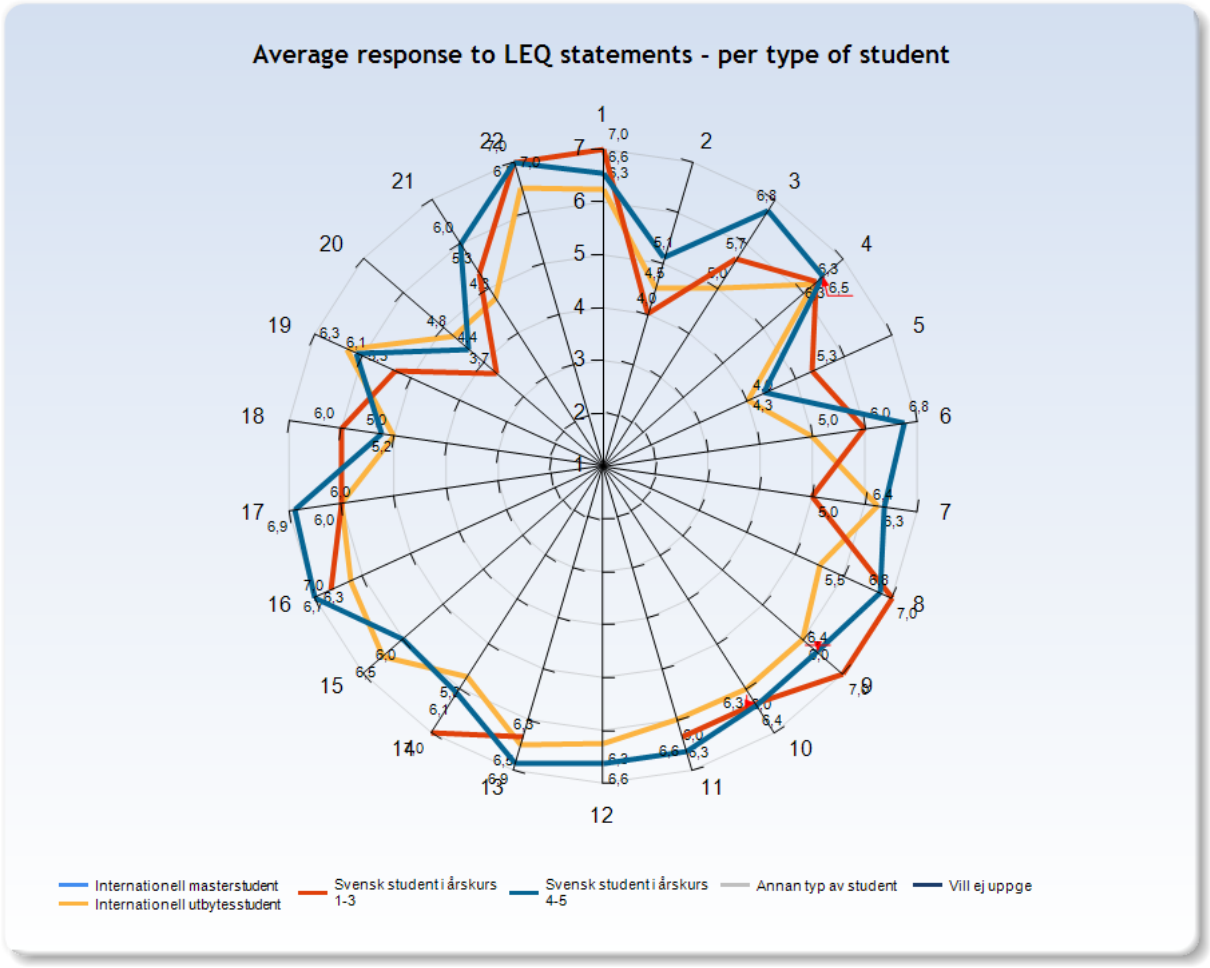
Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

Average response to LEQ statements - per gender

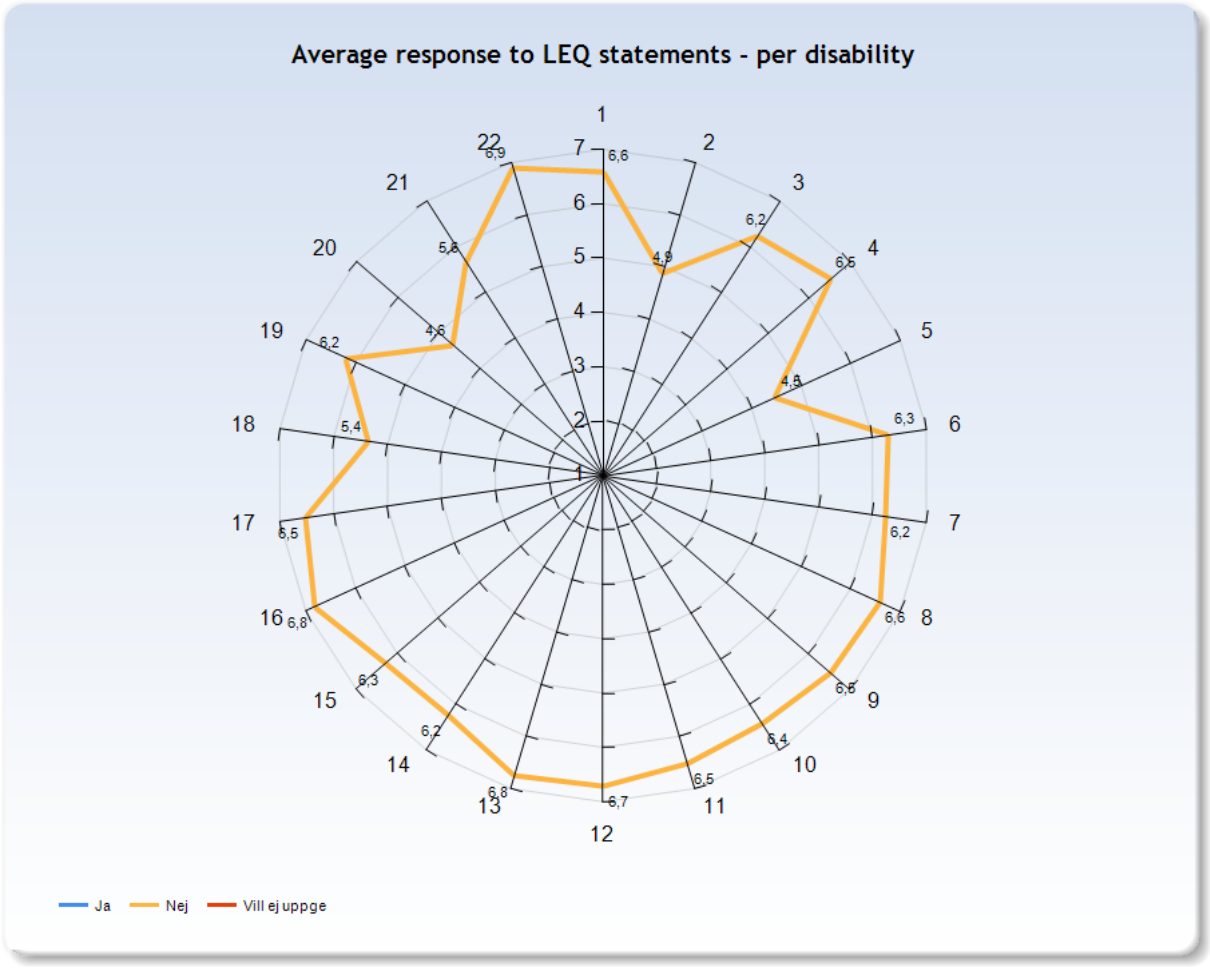


Comments



Comments

Comments (I am: Svensk student i årskurs 4-5)
Var väldigt rädd för cad innan från mina tidigare år då jag kände att jag inte kunde cad. Nu efter kursen kan jag inte förstå varför jag varit så rädd för cad innan, utan tycker det är kul!


Average response to LEQ statements - per disability
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6,2
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6,8
6,5
5,4
6,2
4,6
5,6
6,9
4,9
Ja
Nej
Vill ej uppge

Comments

GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 3-5 timmar/vecka)
All the lectures have been closely connected to the labs, which makes them more interesting and you want to actively participate the lectures to learn since it will help you understand and do the lab.
The labs were a good way to learn

What was the best aspect of the course? (I worked: 6-8 timmar/vecka)
I like that you had the chance to try many different softwares. You are able to receive a lot of help both during the exercises and afterwards. Very appreciated!
Per och Lasses engagemang!
Be able to relate the guest lectures with the labs.
Laborationerna var bra, väldigt tydliga instruktioner som var lätta att följa!
The organization on the course. Good topics and exercises.
Some of the guest lectures were really good (e.g. Tacton Design Automation) as well as the computer exercises.
I believe that Lasse and Per did a great job at showing us the potential of not just cad but a lot of other IT-Tools as well. I believe that these systems will dominate the industry in the future.

What was the best aspect of the course? (I worked: 9-11 timmar/vecka)
The grading and how it more hours = more learning and higher grade

What was the best aspect of the course? (I worked: 18-20 timmar/vecka)
Innan kursen började var jag väldigt osäker på att använda CAD och kände mig orolig över hur jag skulle klara kursen. Men övningarna som var en gång i veckan var väldigt bra då man fick sitta vid en dator och hade möjlighet till att få hjälp och stöttning genom hela övningen. Samt att man fick testa själv och hade då möjligheten att verkligen få lära sig programmen.

What would you suggest to improve?

What would you suggest to improve? (I worked: 3-5 timmar/vecka)
It was not easy to follow the online classes because many times we didn't have the programs, so we were just listening without trying out anything that was explained. Also, the scripts for the labs were useful to complete the task, but they didn't enhance thinking why we did each step.

What would you suggest to improve? (I worked: 6-8 timmar/vecka)
-
Inkludera de betygshöjande labbarna lite mer i föreläsningar kanske. Nu blev de liksom lite bortglömda.
I know that now because of the covid situation in cannot be done, but maybe it could be better to have guest lectures on campus, in the lab computers, so that we can try what they were explaining.
Maybe it would be good to include a little context about the coming lectures, like a short video or text we can watch/read during the week before the lecture, to have a better understanding of the topic.
Release of the voluntary assignments and better timeslots for the computer exercises.
Nothing at all. it was god from every aspect.

What would you suggest to improve? (I worked: 9-11 timmar/vecka)
nothing

What would you suggest to improve? (I worked: 18-20 timmar/vecka)
Inget

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 3-5 timmar/vecka)
Try to think why you do what you do on the scripts on the labs

What advice would you like to give to future participants? (I worked: 6-8 timmar/vecka)
Do not be afraid to try out the volontary assignments!! Some might look ”scary” at a first glance, but by executing some of them was when I really learned the different softwares.
Det är kul, stressa inte, och var noggrann! Spara dina filer ofta!!!
Om du ska göra de icke obligatoriska uppgifterna, börja i god tid!
Start working on the assignments as early as possible so you can ask for help if needed.
Attend to the lectures and start early with the voluntary assignments
Take notes and be active during the lectures. Then the labs will be easier.

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)
Do everything in time and start early with the voluntary assignments

What advice would you like to give to future participants? (I worked: 18-20 timmar/vecka)
Denna kurs är väldigt bra och välstrukturerad. Och testa även på att gör de betygshöjande uppgifterna, de gör att ni får testa programmen mer på egen hand. Ni kommer lära er mycket mer och de är inte allt för svåra.

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 3-5 timmar/vecka)
I think you have solved the course structure very well, with the lectures online and that each lab takes place three times a week so that the computer room does not become too crowded

Is there anything else you would like to add? (I worked: 6-8 timmar/vecka)
Great course!!
Tack för en kul kurs!
Trevligt och bra att Per och Lasse tog sig tid att lära sig alla namnen på oss elever. Det bidrar nog till hur mycket man känner sig välkommen! Mycket roligare att höra "Hej Pelle" än "Hej du".
Thanks to Per and Lasse for their effort to create an interesting and diverse course with different topics and guest lectures. As well thank you for your fast replies to questions and emails.

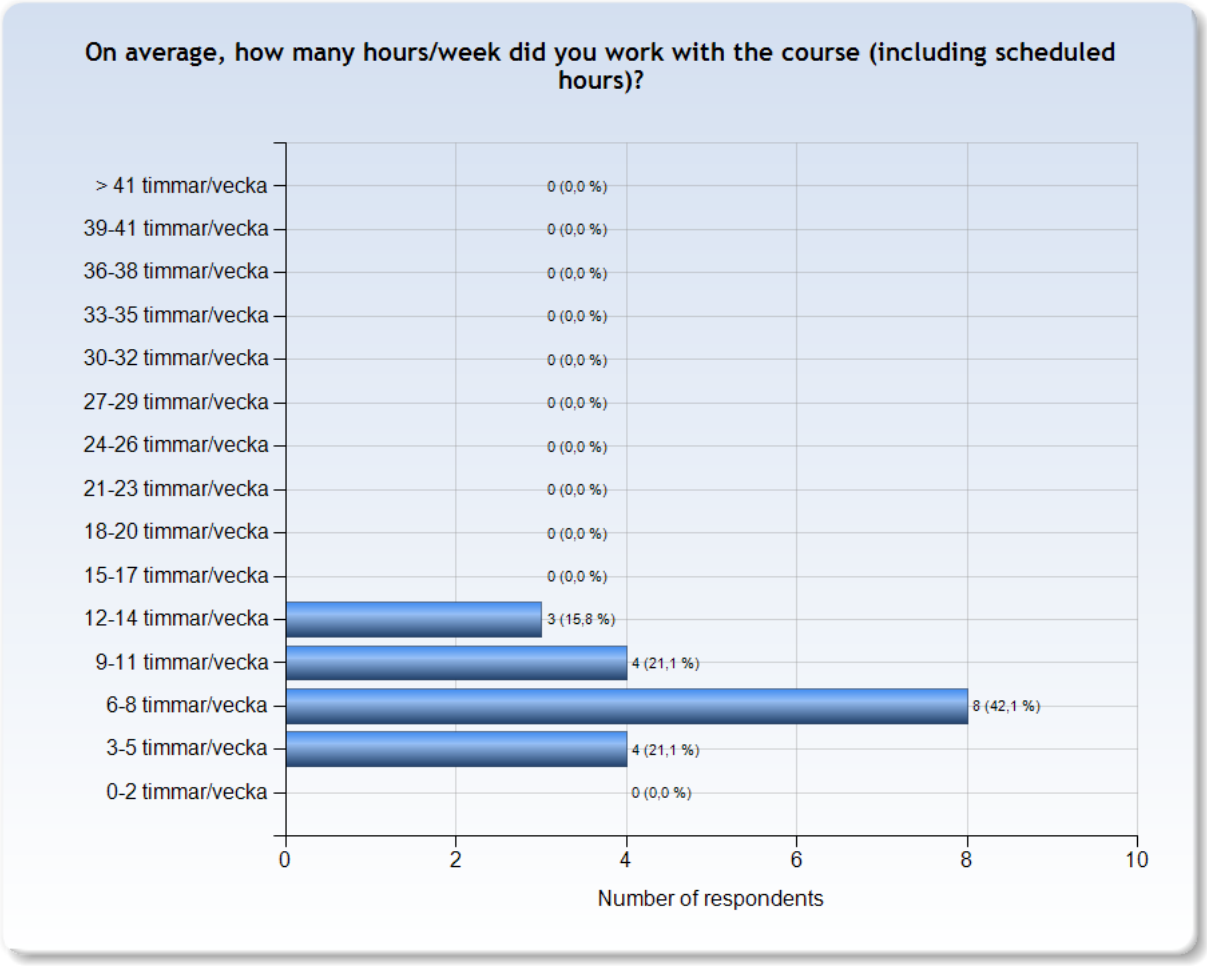
Is there anything else you would like to add? (I worked: 9-11 timmar/vecka)
good job!

Is there anything else you would like to add? (I worked: 18-20 timmar/vecka)
Tack för en riktigt bra kurs!

MG2128 - 2021-01-31

Antal respondenter: 40
Antal svar: 19
Svarsfrekvens: 47,50 %

ESTIMATED WORKLOAD



Comments

Comments (I worked: 3-5 timmar/vecka)
With a bit of experience on 3D modelling software all exercises can be done during the scheduled hours and the homeworks are not that time consuming if you listened well during the scheduled hours.

Comments (I worked: 6-8 timmar/vecka)
The course is well balanced over the two periods. I don't have any "rush" period, and I work every week in this course.
This course gives the perfect combination of self and assisted study, giving the possibility for the students to face it in the best way possible.
The exercises were very helpful in order to build up the basics of new software and then the voluntary exercises helped to get detailed insight on the course.
I would say, that I worked about 5-7 hours on this course during a normal week. However, the weeks before Christmas I spent significantly more time, since the voluntary assignments were very time-consuming.

Comments (I worked: 9-11 timmar/vecka)
The time used is little bit uneven divided because of the voluntary assignments in the end. It would have been nice to get a change to complete one little bit earlier, now it feels like alot of work needs to be done during christmas if I want a change to ger my grade up.
The hours I spent varied between weeks, fewer during the semester and more during the voluntary assignments.
The course was very informative and productive. Teachers were very helpful in every aspect of the course. Even though I did not have previous experience with CAD/CAM software, teachers managed to teach me in a way that helped me not to fall behind my studies. I was working for additional hours for better results.

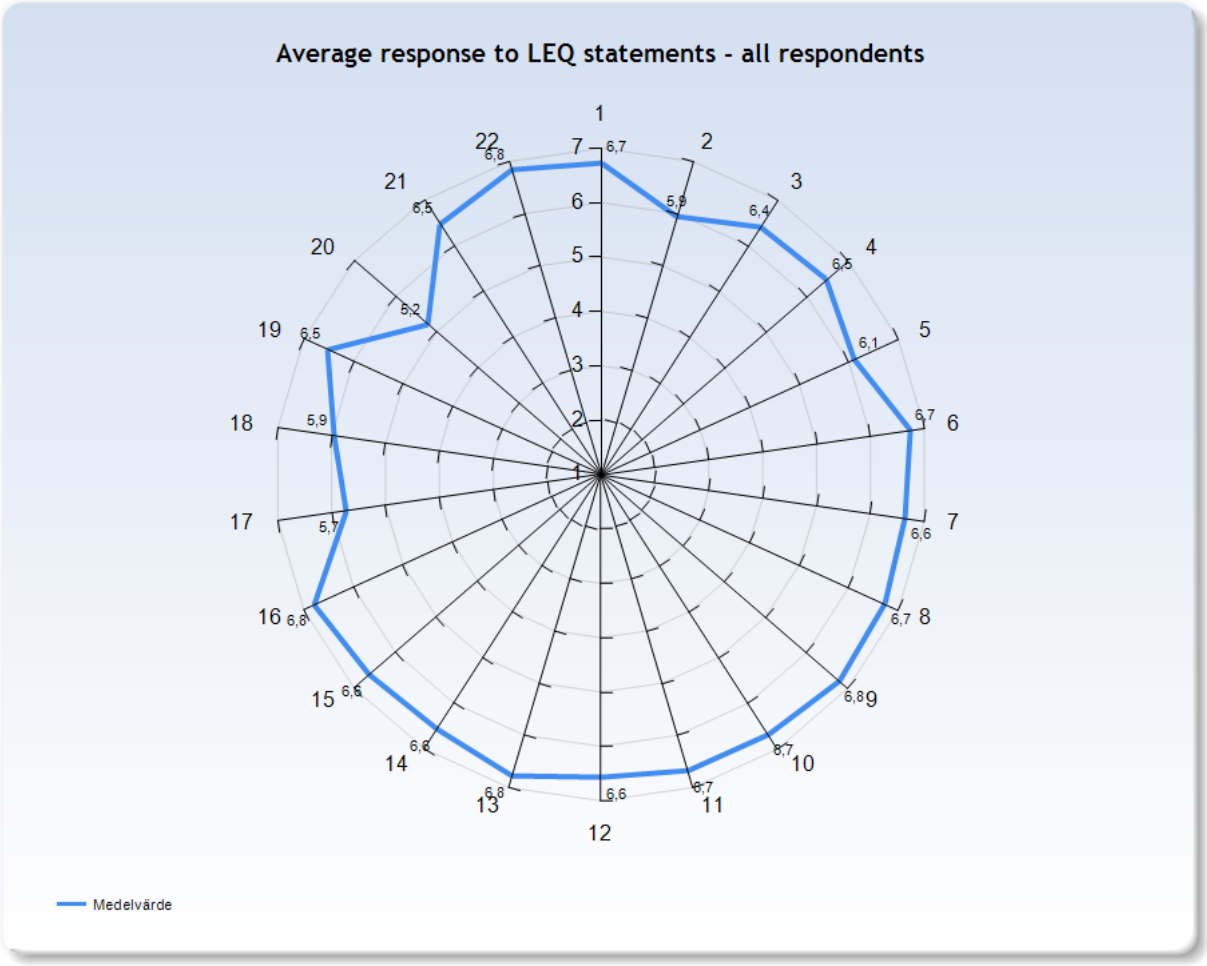
Comments (I worked: 12-14 timmar/vecka)
The course helped me understand basics of CAD and using the principles involved in them via multiple assignments.

LEARNING EXPERIENCE

The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

1 = No, I strongly disagree with the statement
4 = I am neutral to the statement
7 = Yes, I strongly agree with the statement

Note! A group has to include at least 3 respondents in order to appear in a diagram.



KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

1. I worked with interesting issues (a)

Exploration and own experience

2. I explored parts of the subject on my own (a)
3. I was able to learn by trying out my own ideas (b)

Challenge

4. The course was challenging in a stimulating way (c)

Belonging

5. I felt togetherness with others on the course (d)
6. The atmosphere on the course was open and inclusive (d)

Comprehensibility - cognitive level

Clear goals and organization

7. The intended learning outcomes helped me to understand what I was expected to achieve (e)
8. The course was organized in a way that supported my learning (e)

Understanding of subject matter

9. I understood what the teachers were talking about (f)
10. I was able to learn from concrete examples that I could relate to (g)
11. Understanding of key concepts had high priority (h)

Constructive alignment

12. The course activities helped me to achieve the intended learning outcomes efficiently (i)
13. I understood what I was expected to learn in order to obtain a certain grade (i)

Feedback and security

14. I received regular feedback that helped me to see my progress (j)
15. I could practice and receive feedback without being graded (j)
16. The assessment on the course was fair and honest (k)

Manageability - instrumental level

Sufficient background knowledge

17. My background knowledge was sufficient to follow the course (f)

Time to reflect

18. I regularly spent time to reflect on what I learned (l)

Variation and participation

19. The course activities enabled me to learn in different ways (m)
20. I had opportunities to influence the course activities (m)

Collaboration

21. I was able to learn by collaborating and discussing with others (n)

Support

22. I was able to get support if I needed it (c)

Learning factors from the literature that LEQ intends to examine

We tend to learn most effectively (in ways that make a sustained, substantial, and positive influence on the way we think, reflect, act or feel) when:

a) We are trying to answer questions, solve problems or acquire skills that we find interesting, exciting or important

b) We are able to speculate, test ideas (intellectually or practically) and learn from experience, even before we know much about the subject

c) We are able to do so in a challenging and at the same time supportive environment

d) We feel that we are part of a community and believe that other people have confidence in our ability to learn

e) We understand the meaning of the intended learning outcomes, how the environment is organized, and what is expected of us

f) We have adequate prior knowledge to deal with the current learning situation

g) We are able to learn inductively by moving from concrete examples and experiences to general principles, rather than the reverse

h) We are challenged to develop a true understanding of key concepts and gradually create a coherent whole from the content

i) We believe that the work we are expected to do will help us to achieve the intended learning outcomes

j) We are able to try, fail, and receive feedback before, and separate from, each summative assessment of our efforts

k) We believe that our work will be considered in an honest and fair way

l) We have sufficient time for learning and devote the time needed to do so

m) We believe that we have control over our own learning, and not that we are being manipulated

n) We are able to collaborate with other learners struggling with the same problems

Literature

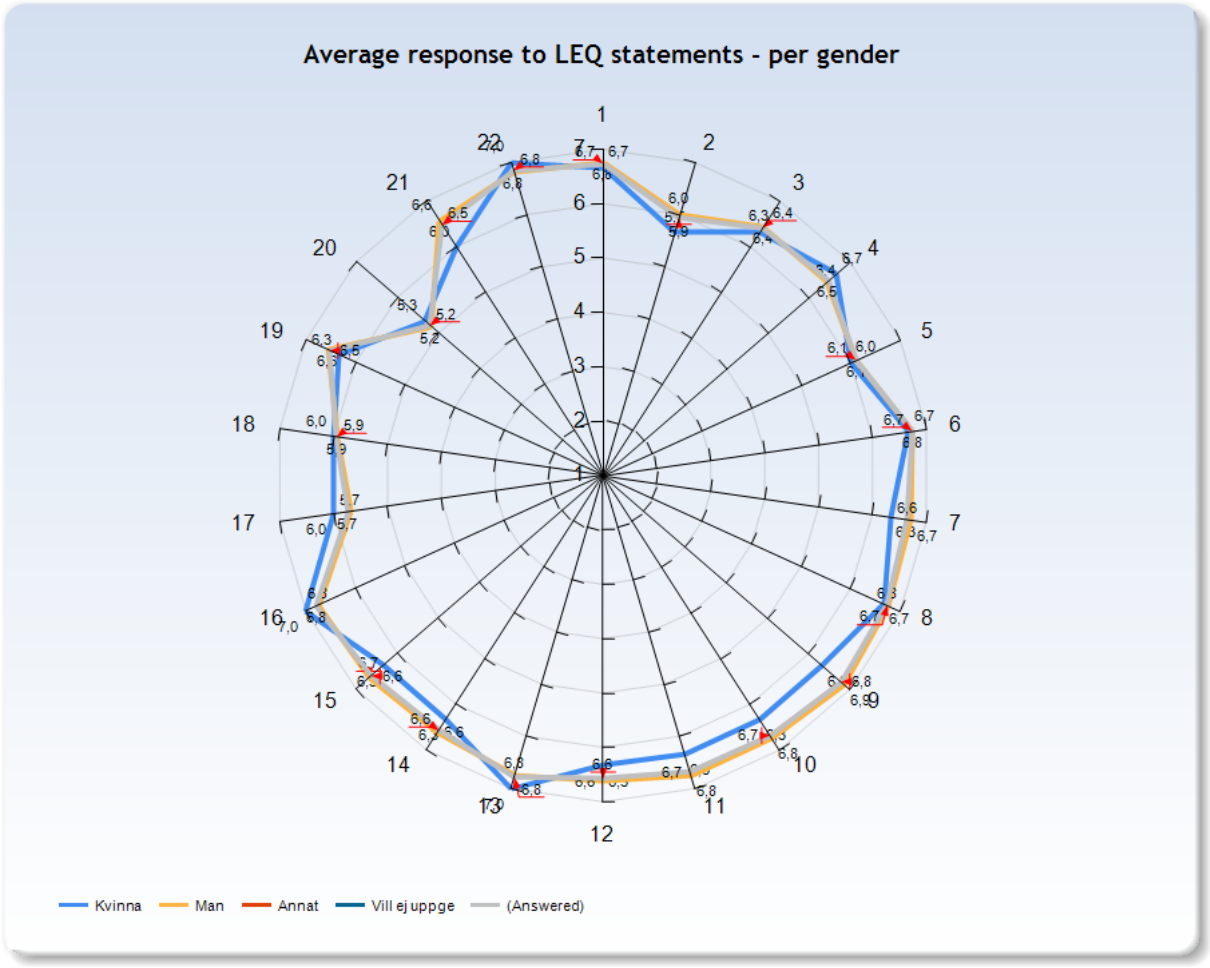
Bain, K. (2004). *What the Best College Teachers Do*, Chapter 5, pp. 98-134. Cambridge: Harvard University Press.

Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

Elmgren, M. & Henriksson, A-S. (2014). *Academic Teaching*, Chapter 3, pp. 57-72. Lund: Studentlitteratur.

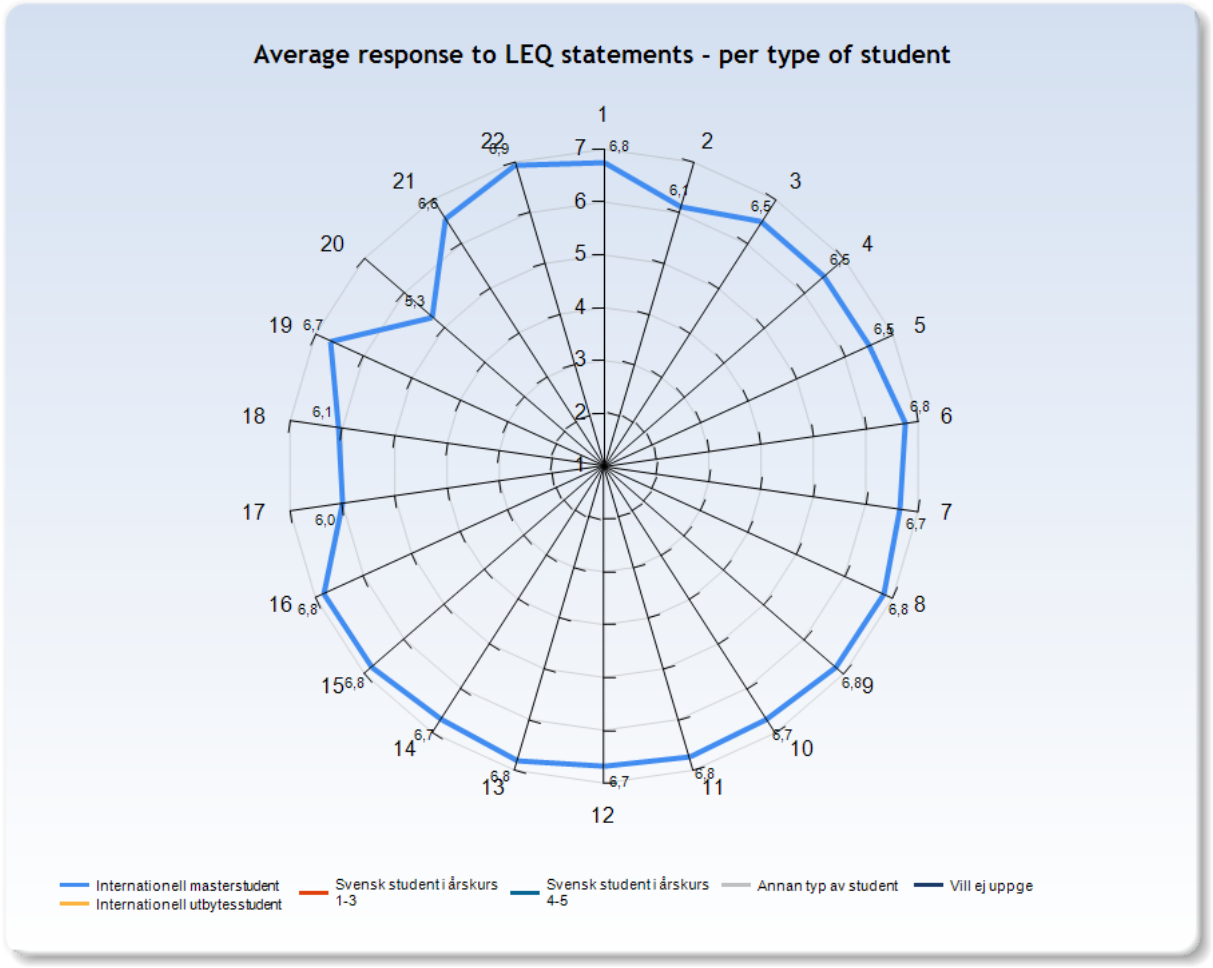
Kember, K. & McNaught, C. (2007). *Enhancing University Teaching: Lessons from Research into Award-Winning Teachers*, Chapter 5, pp. 31-40. Abingdon: Routledge.

Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.



Comments

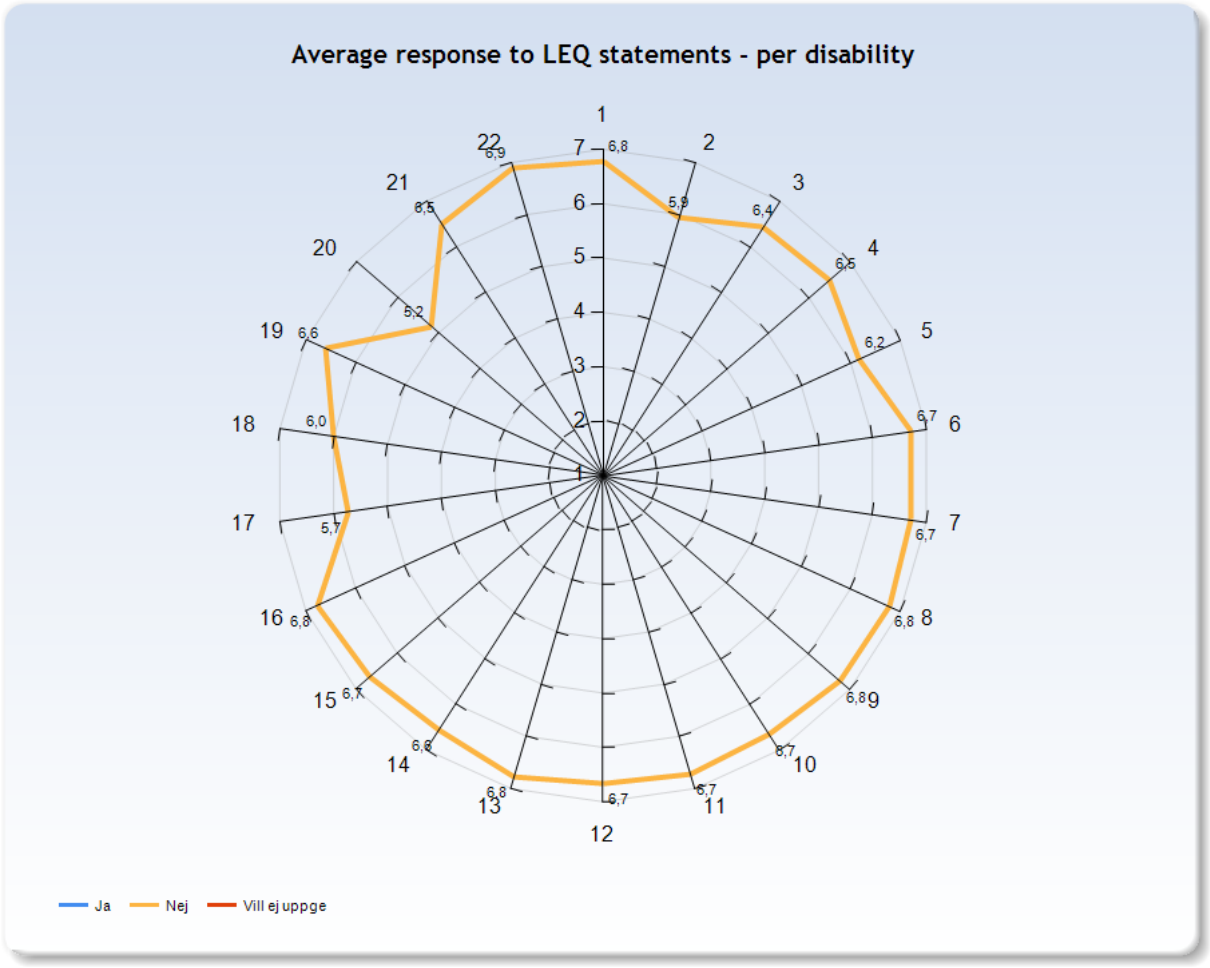
Comments (I am: Man)
There was no discrimination on grounds of gender and everyone was helped when needed.
The gender did not have any influence on the teachings during this course.



Comments

Comments (I am: Internationell masterstudent)
It was really easy to follow the course thanks to the teachers. They take us into consideration during their course and they know our names, I really appreciate it.

Comments (I am: Svensk student i årskurs 4-5)
Proudly international and Swedish :) ....


Average response to LEQ statements - per disability
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Ja
Nej
Vill ej uppge

Comments

GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 3-5 timmar/vecka)
The teachers attitude of course, always helpful and happy to answer to any questions.
The interaction and laboratories with the different IT tools.

What was the best aspect of the course? (I worked: 6-8 timmar/vecka)
The lab which are very interresting to understand how things works
The best aspect of the course is the different lab sessions. In addition, the videos done by the teachers were really useful.
To get to know about new software's in the course with the current industrial software like Tacton which is used by many companies, so it is real-time with the current trend.
Professors' availability, friendly environment, clear lectures, immediate assistance
The readily help that was available to students when in doubt.

What was the best aspect of the course? (I worked: 9-11 timmar/vecka)
Assignments were interesting and challenging in a good way. Also, many different aspects and working methods were taken up during lectures.
I think it is very good to have a lot of compulsory assignments like in this course, they can be used to get help from the teachers or TAs without being afraid of making mistakes. I also think the voluntary assignments are interesting and give you the opportunity to decide for yourself how much effort you want to put into the course.
Learning a new program and get a small view about addative manufacturing
The best aspect of the course was lab sessions where we were working on CAD/CAM software and teachers were helping to advance our skills.

What would you suggest to improve?

What would you suggest to improve? (I worked: 3-5 timmar/vecka)
Not so much actually, maybe having some exercises (or part of them) to get more autonomy and know if we really understood. Because following the instructions without asking questions can be done without really understanding the point.
Not really, i think the course was great giving the pandemic circumstances.

What would you suggest to improve? (I worked: 6-8 timmar/vecka)
Nothing, it was really good.
If the groups can be made anonymously by the professors it would be great since it will help student to know and work other students of different ethnicity and can share ideas.
there doesnt seems much improvement needed considering to be a basic course

What would you suggest to improve? (I worked: 9-11 timmar/vecka)
Publish some voluntary assignment earlier
Nothing keep it like this

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 3-5 timmar/vecka)
Ask as much questions as you want and be curious, they will try to answer to as much as they can (it means all of them basically), listen carefully during the corrections to get a lot of tips and tricks.
Dedicate enough time to the labs, it is important so the knowledge really sinks in.

What advice would you like to give to future participants? (I worked: 6-8 timmar/vecka)
Go to all the labs and enjoy the course.
Learn some basics about CAD modelling before taking this course since it will take a lot of time if you do not have idea about it.
Follow the lectures and go to the mandatory exercise labs
Do not procrastinate, and try to finish the exercises on time so that one could follow the class

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)
Be well prepared when going to the lab sessions, then you will get more out of it.
Ask all the questions you can think of during the compulsory assignments, that way you don't have to figure everything out on your own later!
Just listen and follow the instruction
I would suggest to actively work by staying after lessons in computer labs. As I did not have experience with CAD/CAM software, this will especially be helpful for students of my situation.

What advice would you like to give to future participants? (I worked: 12-14 timmar/vecka)
Be regular, practise regularly

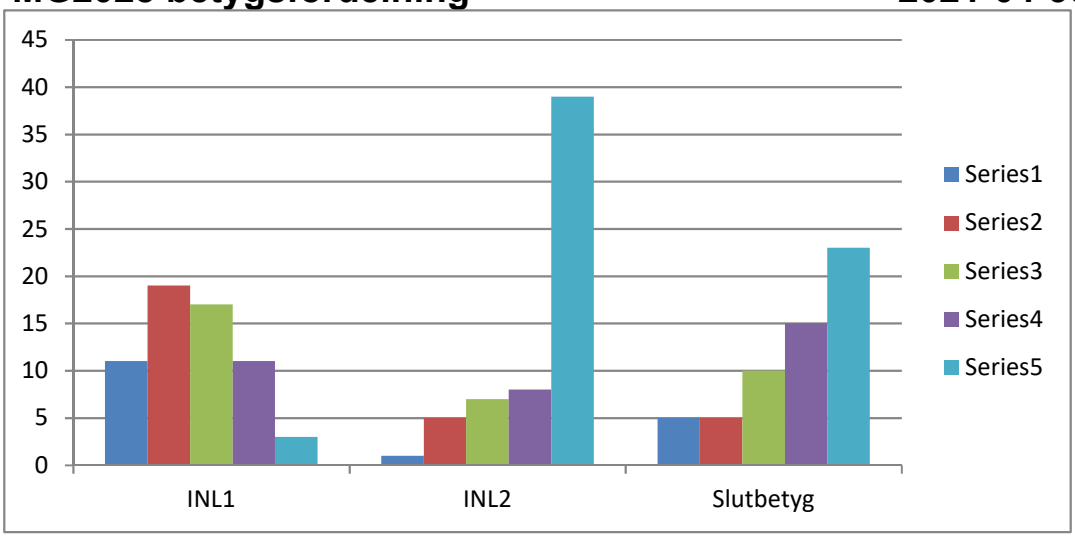
Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 3-5 timmar/vecka)
Thanks a lot to both of you !!!
Would like to extend my gratitude to both Per and Lasse, for putting so much time so we can get a well structured and complete course.

Is there anything else you would like to add? (I worked: 6-8 timmar/vecka)
No
The guest lectures in the period 2 were clashing with another course which also had guest lectures all the time. It seemed biased for us considering with other courses like Advanced CAD and Automation since they did not clash with this one. Please look into it for future. Also, the lectures were not recorded so had to compromise on one of the course lecture since it was on same day same timing.
Thank you Per and Lasse for this course
Thank you!

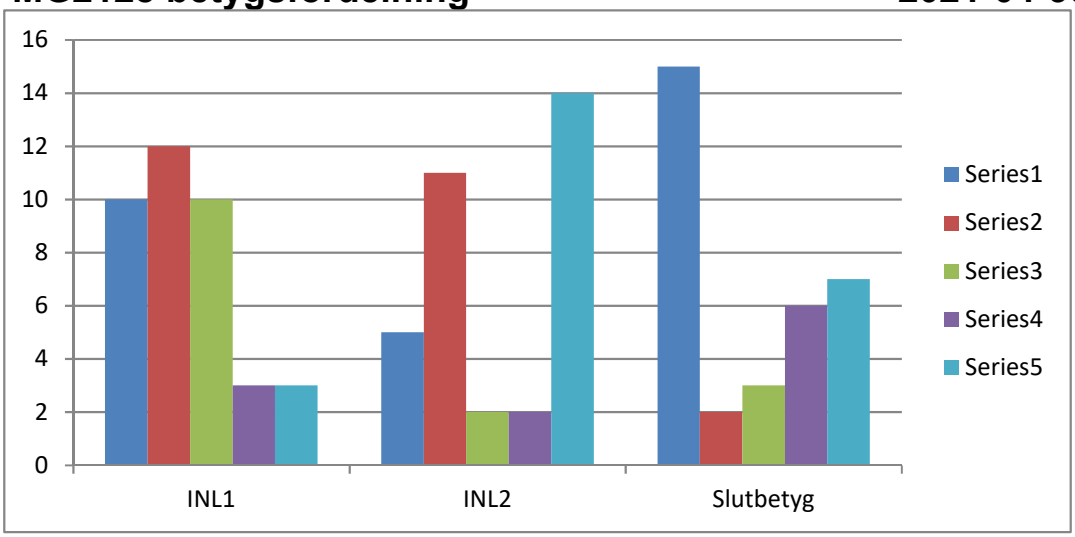
Is there anything else you would like to add? (I worked: 9-11 timmar/vecka)
Thank you for a great course Lasse and Per!! You are really engaged and good teachers and provide support when ever needed. Merry Christmas!
I like working in groups and I think it would be a good idea to have maybe one voluntary assignment which could be done in bigger groups

MG2028 betygsfördelning 2021-04-30



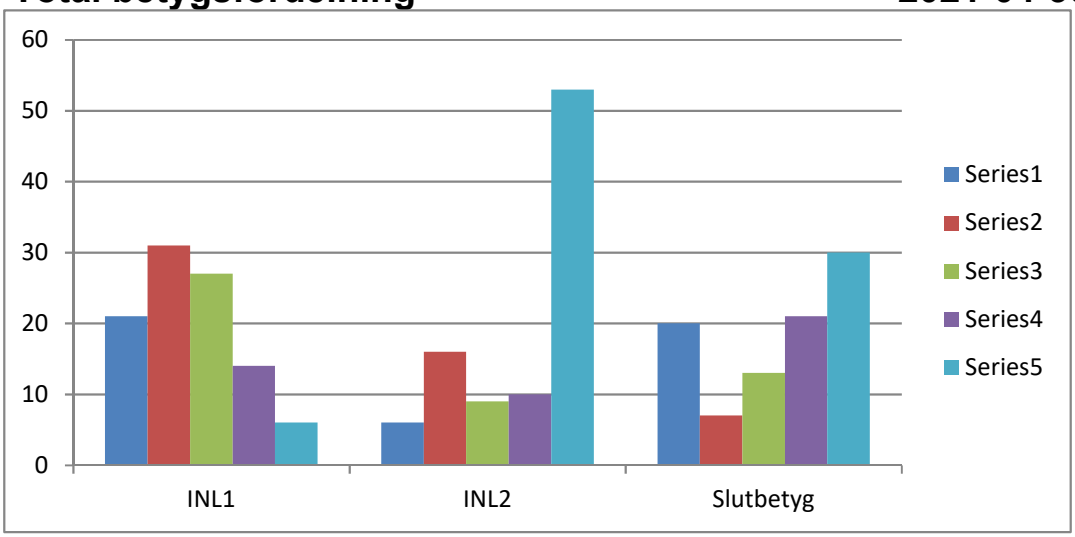
		REG	LAB1	LAB2	LABA	INL1	INL2	Slutbetyg	
Antal stud		63			63	61	60	58	
	A					11	1	5	8,6%
	B					19	5	5	8,6%
	C					17	7	10	17,2%
	D					11	8	15	25,9%
	E					3	39	23	39,7%
	P				62				
Poäng					94,5	91,5	180	366	
Prestation					100,0%	96,8%	95,2%		**96,8%**
Examination								**92,1%**	

MG2128 betygsfördelning 2021-04-30



		REG	LAB1	LAB2	LABA	INL1	INL2	Slutbetyg	
Antal stud		38	37	38		38	34	33	
	A					10	5	15	45,5%
	B					12	11	2	6,1%
	C					10	2	3	9,1%
	D					3	2	6	18,2%
	E					3	14	7	21,2%
	P		37	38					
Poäng			55,5	57		57	102	271,5	
Prestationsgrad			97,4%	100,0%		100,0%	89,5%		**95,3%**
Examinationsgrad								**86,8%**	

Total betygsfördelning 2021-04-30



		REG	LAB1	LAB2	LABA	INL1	INL2	Slutbetyg	
Antal stud		101	37	38	63	99	94	91	
	A					21	6	20	22,0%
	B					31	16	7	7,7%
	C					27	9	13	14,3%
	D					14	10	21	23,1%
	E					6	53	30	33,0%
	P								
Poäng			55,5	57	94,5	148,5	282	637,5	
Prestationsgrad						98,0%	93,1%		**96,2%**
Examinationsgrad								**90,1%**	