

## A2 Kursusevaluering

Du kan besvare evalueringen nedenfor. Hvis der er enkelte spørgsmål, der ikke er relevante, kan du undlade at besvare dem.

213 havde mulighed for at besvare dette skema.

68 har besvaret dette skema.

Svarprocenten er 31,92 % : 68 / 213

### 1

#### 1.1 Hvad fungerede godt ved kurset? Og hvad var grunden?

- *The material was relevant and the professors did a good job teaching the material.*
- *Some exercises were good.*
- *Great idea of starting with functional programming. Awesome idea about "Torbens nødder".*
- *Very good introductory course for first time programmers. Very good feedback and nice patience with the instructors.*
- *Øvelsestimerne har helt sikkert været dem der har givet mest læring. Jeg vil påstå at man først lærer programmering ved at gøre det i praksis*
- *The course introduced us slowly into programming which helped some people keep up. It also kept things interesting by not sticking on the same subject for too long.*
- *God instruktør, god feedback, forholdsvist let at bestå afleveringer*
- *I liked the assignments, they always worked as a way of practicing that week's theory.*
- *Øvelsestimerne er som altid perfekte. Tutor er klar og man lærer en del. Fedt at man laver gruppearbejde og deles om større projekter. God dynamik.*
- *Godt, at der en god del af tiden var fokus på funktionel programmering, da dette paradigme ikke er lige så kendt (og anvendt) som eksempelvis imperativ eller objektorienteret programmering. Yderligere var uge-nødderne interessante og signifikant mere udfordrende end de almindelige opgaver.*
- *God introduktion til principperne bag programmering, samt en god kurve op til de sværere dele af kurset.*
- *De store projekter var enormt lærerige.*
- *Jeg har været nødsaget til at have det meste af dette kursus som selvstudie, da jeg havde et andet fag i samme skemagrube, som dette kursus. Derfor har jeg ikke det største grundlag at tale udfra.*

*Det er også godt, at I stiller spørgsmål til de studerende ved forelæsningsne.*

*Den problembaserede undervisning - altså lær at kode ved at forsøge at gøre det, synes jeg var god. Øvelsestimerne fungerede også rimelig godt, dog foretrækker jeg personligt de øvelsestimer, som primært er 'kods selv' og ikke på tavlen.*

- *The assignments after each lecture, and having had a good "teacher" i can strongly agree to the previous statements.*
- *Øvelsestimerne og generelt opgaverne der blev stillet fungerede rigtig godt.*
- *Niveauet i mange af opgaverne har været udmærket og så eksploderer de lige pludselig.*
- *That we start out with functional programming in a highly relevant language like F#.*
- *Sammenhængen mellem forelæsning, øvelse og aflevering gjorde det en fornøjelse at arbejde sig igennem kurset*
- *Jeg finder det yderst interessant og spændende. Dette skyldes nok mest af alt, at mine kompetencer inde for dette fag er mere tilstrækkelige end inde for DMA.*
- *Programming!*
- *Interesting assignments, good notes for help.*
- *My instructor(s) gave good feedback.*
- *It was great to get some hands-on experience with programming*
- *It was great to get an introduction to the different types of programming and programming in general, as someone who has never programmed before.  
Also the TA's have been very good at helping and guiding all along the way, so that everyone was caught up if they put some work into it.*
- *får personligt mest ud af øvelser - man bliver tvunget til at koncentrere sig*
- *Easy to understand.*
- *der var god hjælp, hvis der var noget man ikke kunne forstå. Der var god Feedback og det virkede som om alle kunne følge med*
- *The instructors have been great. The bigger assignments were good.*
- *The problems that were given in the exercises were fun. The assignments increase in difficulty was at the right speed*
- *This course gave you a good idea about what the different parts of programming is about and made us realise various ways to solve a problem*
- *instruktør, feedback,*

- *Øvelsestimer med en god instruktør, som stod klar til at hjælpe. Oftest gode og udfordrende afleveringsopgaver. Feedback på opgaver, som er uundværlig, hvis man skal blive bedre.*
- *Hurtige feedback af afleveringer. Sjovt øvelser og afleveringer opgaver.*  
*Fine sammenarbejde mellem instruktører og underviser.*
- *You always feel like you're learning something.*
- *The exercise classes were really good and the instructor did a great job at explaining when we made mistakes and teaching us helpful tips.*
- *Very good introduction to programming with zero background*
- *Kurset var meget bredt. Inden jeg startede havde jeg kun stiftet bekendskab med imperativprogrammering, men ikke funktions- og objektorienteret programmering. Det synes jeg bestemt jeg fik efter kursets slutning. Jeg har fået en god forståelse for de andre to paradigmer, som jeg føler jeg kan arbejde videre med. Derudover lærte det alt hvad man havde behov for, for at skrive små til mellemstore programmer.*  
*Især i det sidste forløb, hvor vi har haft med objekt orienteret programmering at gøre, har øvelserne være gode. Øvelserne var løst defineret, og du skulle selv komme på med løsningsmetoder (klasser, nedrivning af nogle klasser, etc.).*
- *Generic note*
- *The course was scheuled greatly so that the progression made sense at all times*
- *Ikke let at svare på, læste et eller andet sted (på interwebs, ikke i en bog): "something working as intended is the measure of it going unnoticed", altså må alt jeg ikke har bidt mærke i været perfekt.*
- *I learned to be more organised*
- *Turning in weekly assignments with pretty fast feedback was a great chance of getting into a good university rythm, especially for the students learning Latex, Vim/emacs, FSharp, terminals, KU assignment standards at the same time. I think the instructor we had, was very very skilled aswell, and had good humour, i think that its great that KU pays a guy like him to come and tutor us.*
- *I think this course gave me a great base for programming and how to move forward and teach myself how to become a better programmer. It was very broad which has given a good idea of the different areas within programming.*
- *The learning experience. It has been fun overall.*
- *The exercises in the imperative and functional parts of the course were really good.*
- *Jeg synes i det hele taget bare kurset var godt planlagt. Niveauet blev hele tiden en smule sværere sådan at det aldrig blev for nemt.*

- *Christina's lectures were really good, and you got to participate in another way, that made it interesting to participate in lectures. However, if you were to read her powerpoints on your own, they could be hard to understand, as they were intended to be used, while she explained.*

*Jon is probably the only teacher not to use a microphone while teaching, which sometimes meant, that there were words you could miss. While his notes on F# were really good, the lectures could quickly become hard to follow, as the screen contained a lot of text - making it hard to focus on individual code.*

- *Informativt og spændende introduktion til programmeringssproget F#.*
- *I learned a lot, especially during the project work on the mastermind assignment and the functional programming part of the course.*
- *you learned the basics of coding.*
- *Very competent instructor, good feedback, help and guidance when needed. Also having the "exam" spread out across 12 hand-in assignments as it is now seems really good, though there is a little room for improvement.*
- *Kurset var meget interessant, fordi opgaverne vi skulle løse var gode. Forelæsningerne var også håndterlige.*
- *I like how we, for the most part, focused on functional programming. That meant that most students were almost on the same level (because even experienced programmer seldom have any functional experience).*
- *Generally quite informative*
- *Åbnede meget godt op for de forskellige paradigmer i programmering.*
- *A very fun course. Great assignments.*
- *The course was overall pretty great. I love how it is structured by weekly assignments.*  
*For people who learn by the concept of "learning by doing", this course is perfect.*  
*Also pretty exciting to learn F#.*
- *Niveau alt for højt - svært ved at følge med. Men kurset var godt og meget lærerigt.*
- *Øvelsestimerne!*  
*At forelæsningerne kun varede 45 min. af gangen.*
- *The extra access to help in form of study cafes were really helpful in order to get introduced to the subject og programming.*

*Christina: Great lecturer, with good and precise explanations. Too bad the lecturers dont last longer, because we didn't reach to finish everything. But really nice with the short introduction of what the goal of the specific lecture was, and the conclusion at the end.*

- *God idé at starte med et sprog som (næsten) ingen har forhåndskendskab til.*
- *Det fungerer godt at have øvelsesopgaver, som mere eller mindre direkte gør en klar til at lave afleveringsopgaverne.*
- *It was good at explaining the basics, while not becoming too boring for people who had done programming before*
- *Kurset var velstruktureret og der var gode muligheder for at få hjælp.*
- *For det meste af tiden er forelæsningerne og øvelsestimerne om præcis det samme, og jeg synes dette er den rigtige måde at gøre det på. Det gør det meget lettere at huske forskellige ting.*

1.2 Jeg vil foreslå følgende forbedringer (OBS! Kommentarer vedr. individuelle undervisere angives på evalueringsskemaet for den pågældende underviser)

- *I would appreciate if there was not such a big difference between the different TAs. There's a pretty large gap between how good your assignment has to be to pass.*
- *The material was sometimes not finished, and the teachers were bad at communicating together. We could have learned a lot more!!*
- *Learn Haskell instead of F#. In addition, learn imperative and object oriented features with Python, and use this to implement algorithms presented in DMA.*
- *Jeg mener ikke at forelæsningerne lærer en ret meget jeg vil klart foretrække flere øvelsestimer*
- *Don't have any ideas.*
- *Gerne mere fokus på øvelsesopgaver. Og studiecafén om tirsdag var et elendigt tidspunkt, gerne en dag hvor vi ikke har været i skole i 10 timer først.*
- *A bit more focus on functional programming and what it is.*
- *Undervisningsmaterialet kunne godt forbedres. Fx. Jon's "Noter", som er hans draft til sin egen bog om F# var gode idet de berørte netop de ting, som vi skulle bruge til de enkelte afleveringer. Problemet var han skrev dem undervejs og det var ofte svært at få læst forud. Torben er sindssyg klog - men han siger alt for mange gange "øøh" i hans sætninger, starte en sætning godt ud og mumler så resten af vejen. Nogle af de mere komplicerede emner får han ikke forklaret 100% da han selv er så klog at det formegentlig er svært for ham at se det fra vores synsvinkel. Jon burde bruge mikrofon. Han siger den ikke virker, men 80% af tiden bruger de andre undervisere dem.*
- *En del mere om funktionel programmering. I stedet for at gøre det obligatorisk at lære og aflevere en opgave i Scratch, så gør det valgfrit for dem, som allerede kan programmere. Det kunne også være en god ide at dele kurset op efter programmeringserfaring, således at man ikke behøver at få undervisning i ting, som man allerede kan. I forlængelse af dette kunne det ligeledes være rart, hvis eksamensformen ikke var løbende bedømmelse, men i stedet en 'rigtig' eksamen (f.eks. projektaflevering (evt. med efterfølgende mundtlig eksamen i dette),*

*skriftlig eksamen (som kunne være løsning af et eller flere specifikke programmeringsproblemer)) således at dem, som allerede er et godt stykke foran pensum ikke behøver at lave opgaver undervejs, men bare kan gå op til eksamen.*

*Der måtte gerne være flere uge-nødder.*

*Specifikt til den objektorienterede del: Det ville være meget bedre, hvis de begreber, som bliver brugt i undervisningen rent faktisk stemte overens med hvad undervisningssproget (i dette tilfælde F#) kalder tingene. Som et eksempel kan det nævnes, at der er brugt ordet "attributes" for at benævne det, som normalt kaldes for "member variables" (eller kort "members"), men i F# er "attributes" måder at angive visse typer metadata til ens kode, altså noget helt andet. Dette er problematisk både hvis man kender sproget i forvejen, men det er også et problem, hvis man senere skal kommunikere eller skrive kode sammen med andre, hvor det kan føre til misforståelser.*

- *Generelt mange logistiske problemer: Afleveringer som ikke bliver uploaded til tiden, som er tvetydige eller ikke gennemtænkte.  
Undervisningsmaterialet er i mange tilfælde af lav kvalitet, mangelfuldt og/eller sparsomt.*
- *Under forelæsningsne bør der bruges mere tid på generelle programmerings koncepter, i stedet for F# syntaks.  
Ud over dette bør sværhedsgraden skrues op, da mange af opgaverne er for banale.*
- *Bedre overensstemmelse i mellem ugesedlerne og Canvas. Der er flere gange, hvor datoerne på afleveringsfristen ikke har stemt overens de to steder.  
  
Lidt mere struktur og klarhed ville være rart.*
- *Der skal meget mere styr på de praktiske dele i kurset. Der var et par uger hvor vi slet ikke fik ugeseddel, og mange hvor vi først fik den senst søndag aften.  
  
Der var desuden mange forelæsninger, der føltes som ren og skær 'fyld', da vi egentlig ikke gennemgik noget nyt.*
- *Måske bruge et andet sprog end F#? Stadig behold semesterstruktur, eller lade være, men skift til to forskellige sprog. Måske scala i blok 1 og c++ i blok 2. Alt andet end F#!*
- *Jeg synes at "Functional programming using F#" kunne være upræcis og det virkede ikke som om den var gennearbejdet. Efterfølgende studerende vil være bedre stillet ved kun at bruge Jons bog.*
- *It's frustrating when a few of the teachers don't send out the exercise tasks and the assignments. We had a week where there were no exercise tasks.*
- *Der var en periode hvor der ikke var styr på ugesedler og til dels undervisningen*
- *practice-assignments could have been more precise and had fewer mistakes*
- *Assignments to be uploaded on time*
- *A couple of times the skill levels of the assignments increased drastically, and some was a great setback in terms of difficulty. So maybe make them a bit more consistent in terms of this. That doesn't mean that the harder assignments shouldn't be there, because I also think it's great that they come in between to really challenge the students*

- *There were some poorly formulated exercises, particularly during the OOP part of the course.*
- *The assignments and the weekly work have to be out on time.  
The weekly plan could look more like the weekly plan from DMA.*
- *The course lacked a general solid structuring. The weekly exercises were late, the lectures were sometimes unrelated to the exercises we would work with right after. The assignments were often evidently thrown together in hurry. We were taught functional before OOP programming. F# is a bad starter language.*
- *That the lectures be more relevant to the exercises given. Often we would have lectures about a topic we would first have exercises in a week or two after. For example has the tutoring in Win.Forms first been made into an assignment several weeks later, after we've been told that it Win.Forms wouldn't appear in any assignments.*
- *bedere styr på fil navngivning og mappestruktur på absalon evt. brug af modules som i DMA.*
- *Fjern Functional Programming using F# fra pensumlisten. Vi har stort set ikke brugt bogen og den smule vi har læst, var ikke specielt brugbart. Det ville være bedre med en introduktion til at udnytte de resourcer, som findes på nettet hos Microsoft.  
Fsharpnotes trænger til grundig revision, men er ellers meget brugbar på kurset.  
Generelt set har forelæsningsne ikke været så givende fagligt set, om end vi har haft mulighed for at se de mange ting man kan med Fsharp. Man kunne sagtens koge stoffet ned og reducere antallet af forelæsninger, mens man øger antallet af øvelsestimer - jeg tror man lærer mest, når man arbejder med kode.  
Eftersom man ikke kan evaluere alle forelæsere:  
Christina: God struktur i forelæsninger. Godt med inddragelse af studerende. Igen ville det dog være rarere at sidde med nogle øvelsesopgaver for at lære om objektorienteret programmering, frem for at se 120 powerpointslides.  
Torben: Savner struktur og lidt tempo. Har alt for meget stof/tekst på sine powerpoints - han kunne med fordel koge stoffet ned til nogle centrale pointer. Igen ville det være bedre at have mere tid til at lave øvelser. Godt, at han bruger mikrofon.*
- *mindre stavfejl på f# note*
- *The assignments have to be our earlier since there was several times they got delayed and had problems, and the lectures have to be more consistent in their difficulty since they sometimes were really hard and sometimes far too easy.*
- *Better teaching in winforms.*
- *Meget af kursusmaterialet var lidt rodet. Filerne lå lidt hulter til bulter, og ugesedlerne kom ofte sent op. Derudover lidt mere konsistens i sværhedsgraden af øvelsesopgaverne. Nogle af opgaverne tog meget kort tid at lave, andre meget lang tid.*
- *Generic note*
- *Using the book recommended for the course and not the notes written by the teacher for his upcoming book. These were sometimes late and was overall quite disjointed which made reading them quite annoying*
- *1. Meget svært i starten, og blev ikke indført gennem undervisningen i hvordan man egentlig*

*opbygger kode med if-statements og syntaks osv (jeg havde ikke kodet før). Der manglede lidt noget basis for logik, en gennemgang af hvad der er tilladt, hvad der er smart, osv. Jeg kan mærke at mange af dem som faldt fra, gjorde sådan fordi at programmerings-kurset føltes lidt som at blive smidt ud i et koldt hav for at lære at svømme. Måske lidt ekstremt eksempel, men fremover, spring scratch over og bare ræk russerne en A4 side med loops, if statements, anonyme funktioner, handy biblioteksfunktioner, og deres syntaks til implementation. Scratch er cool men i forhold til hvad vi fik ud af det var det ikke 2 uger værd. Bedre at bruge tiden på at indføre os i syntaks og text-editors/compilers osv. (evt ekstra timer eller nogle notes skrevet af instruktore?). Ingen klager til undervisningen efter de første 1-2 måneder, det var super godt.*

*2. Ryk mandag og fredag sammen så vi har 3 lange dage, og 4 dage fri. Mandag og fredag er SUPER flabede dage for os som bor hjemme længere væk. En 9.15-12.00 dag varer fra 7 om morgenen til 14 om eftermiddagen når man bor udenfor KBH. Jeg respekterer selvfølgelig at forelæsernes skemaer muligvis ikke passer, men gør alligevel en indsats for at undgå de korte 2-timers dage.*

*3. Genovervej grupperingerne efter hvor meget man har kodet før.*

- *Not much, i think it was overall a pretty great experience.*
- *I think that the material used for this course could have been better. As a completely new programmer it would have been nice to get a much better introduction to the subject. I was placed on a team and a group with very advanced students, so the first three months were really tough and not very useful. Afterwards I was placed in a new group on a new team with a teacher that did an amazing job on explaining and teaching the subjects. I think that was the absolute best learning place for me during this whole course and I think it could be improved if more teams taught students more and that the lectures and the material were better written and spoken, better organized and better prepared. A lot of the weeks we experiences delays on assignments and study material.*
- *It would be much better if there were exercises every week and that they were available before the week started.*
- *The "Files" folder on Absalon is an absolute mess. This needs to be cleaned up, as the contents are really useful, but it can be hard to find what you're looking for at times.*

*Use Christina's lecturing methods, as they were fun and made the students participate more. To everyones surprise, she even gave us a 'coding challenge' where we had to try and code something in 5 minutes. This is a really great way to make sure everyone is participating and understanding what is going on.*

- *Nogle emner blev gået meget let hen over hvor at man ikke fik mulighed til at fordybe sig i det. Bedre planlægning af ugesedler.*
- *I would have liked for the assignments to be based on some of the problems from DMA. We learn about all these interesting algorithms and datastructures, yet in PoP we are tasked with simulating races between mammals.*
- *There were sooo many obstructions in this course.. From the top:  
1. If you had no coding experience you had no idea of figuring out what the professors talked about or what they said. you had no understanding of basic computer skills like bash, compilers, frameworks, editors and so on.  
The canvas page was wildly unorganised and difficult to navigate in.*



*The link between lectures, lab work and assignments were sometimes non-existing. There was hardly any link, meaning you didn't learn what you need in lectures to do the lab work and many times the lab work didn't make sure you could complete the assignment.*

*The whole course was a mess and uncoordinated.*

*Often you were taught things that you didn't understand how worked or why so there was no logic learned as of how to use it. Resulting in things learned couldn't be used in other connections.*

*The assignments were poorly described, and often times the reading material was bad or unrelated. (many issued with Jon's own book)..*

*Assignments would repeatedly be altered and updated, and often released too late.*

- *Improving the structure of the Course.*

*The idea of going through the 3 paradigms were really good. The way it was done could be improved. First of all, when teaching a paradigm, it would be really nice, the first thing being taught was the definition of the paradigm. It seemed very strange that the first time a lecturer told us the definitions of the 3 paradigms, was when we reached Object Oriented Programming, the last of the 3 we are being taught.*

*The distribution of time during the course to the different subelements should also be improved. I felt it was a waste of time using 2 weeks doing things in scratch, when at the same time, I really felt I lacked a proper introduction to the syntax of F# and definitions of the paradigms we were going to be taught. Furthermore the time given to learn OOP seemed a little excessive as long as we didn't have a lot of assignments to do, which was sad as that seemed to be the best structured part of the course.*

*Lastly the "exam" hand-ins. They are really good, but the part with a week or two weeks break with no hand-in seemed strange. Furthermore, it would be really good if the hand-ins were all done before Christmas, so when coming back from the holidays everyone could just concentrate on learning a little more, and maybe even have time to go through some interesting and less course relevant. i.e. the lecturer could show what they are researching when not teaching.*

- *Siden faget kører sideløbende med DMA, synes jeg, det kunne være smart, hvis man fik brugt nogle af de algorithmer, der gennemgås i DMA i nogle af opgaverne.*
- *The Canvas page is very unorganized. The F# book is not very useful. Not all topics were explored deeply enough.*

*Better coordination between lecturers would be very much appreciated.*

- *It was so confusing (and this cannot be overemphasized!) what the assignments should contain from week to week.  
- I found it highly annoying that there was not a clear manner in how to submit the assignment - it is frankly just inconvenient to use your time on knickknacks.*
- *Bedre hjælp til folk med et lavt programmeringsniveau.*
- *Det skal være et krav, at forelæser bruger mikrofon!!!*

*For Gud's skyld skift til en anden tekst editor end Emacs. Jeg har brugt Visual Studio Code hele semesteret, der er udviklet af Microsoft (Det er ikke et IDE, men en tekst editor). Det fungerer til alle tre styresystemer og er perfekt til F# programmering.  
Emacs er en god editor, men har en ekstrem stejl "learning curve" i forhold til dets udbytte.*

*Når man starter ud med at programmere er der rigtig mange nye ting at holde styr på. En svær editor bør ikke være en af dem.*

*VS Code bør være den understøttede editor på dette kursus fremover.*

*Bedre feedback på opgaver. "Fint" er ikke et acceptabelt svar respons på en aflevering. Man kan altid forbedre sig.*

*Når der laves programmerings-klasser, så brug .fs og .fsi filer til at lave en .dll. Det at alt skrives i en .fsx fil er sjusk og gør det hele mere uoverskueligt.*

- *Jon and Torben: It would be great, if you did not always expected the students to know a lot of what you are teaching at each lecture. So more wrap up at the beginning, and maybe more specification and more explanation. And to help the students get an overview, a short introduction in the beginning and conclusion at the end, would really be helpful.*
- *Anden halvdel føltes væsentlig "langsommere" end første del. Mange forelæsninger føltes som repetition.*
- *Undervisningsmaterialet burde have været færdigt og ligget klar fra studiestarten. Vi oplevede at tekster først blev skrevet "færdige" og lagt op midt i den uge de var til. Der var derudover stadig mange fejl i selve materialet, hvilket det ikke kan forventes at nye studerende der læser om emnet første gang skal kunne gennemskue. Øvelserne var heller ikke altid klar til tiden, og der var flere uger hvor man selv måtte finde på noget at lave til øvelsestimerne. Derudover var de ofte dårligt formuleret, hvorfor for meget tid gik på at forstå opgaven fremfor at tænke over hvordan vores nye viden kunne bruges til at løse opgaven. At denne uklarhed skulle være en øvelse i sig selv virkede mere som en undskyldning. Og om ikke andet synes jeg ikke det er i løbet af vores første programmeringsfag at vi skal træne løsning af uklare opgaver. Kort sagt har kurset ikke virket særligt forberedt eller gennearbejdet, hvilket var noget skuffende.*
- *Det går for langsomt en stor del af tiden. Så meget at det ikke bare føles let, men så meget at jeg bliver i tvivel om der er noget fuldstændig overseer.*