KUL2017 – ABSTRACT SUBMISSION (short presentation, workshop, round table)

Format: Round table

Learning plan before single-student final re-exam

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Keywords: examination, feedback, study techniques

SHORT SUMMARY

As a teacher, are you ever frustrated over being asked to create an extra exam for only one student, when "your" course is the only thing stopping this student from receiving their degree? I will provide one suggestion to help both you and the student, before creating this final re-exam. Together, we will discuss how else we can help the students best, in similar situations, without an unreasonable workload for the teachers.

ABSTRACT

Intended audience:

This round table discussion is mainly keyed for examiners, leaders of programs, and department vice-heads for undergraduate education. It will possibly also be relevant for student counsellors.

Problem statement:

When only one course remains before receiving their degree, Chalmers students have the right to request an extra exam (see link below, Reference 1, in Swedish). The examiner decides whether or not to provide this.

Often, the last course remaining for the student is the one that the student has most trouble with. Sometimes, the student will have a long history of failed exams in this course. In such a case, the student needs support in finding a better way of learning before it is useful to provide an extra re-exam.

Suggested solution:

The student can fill out a learning plan document, where previous exam attempts in this course are analyzed in a structured format. For each failed exam attempt, at least three specific "learning aspects" with identified "room for improved learning" and "plan to achieve learning" are noted. Each identified learning aspect is then keyed (by the student) to the learning goals and course content. Finally, a time schedule with checkpoint actions is created, with a plan for self-guidance and progress reporting to the examiner.

The learning plan document used in my recent pilot study (one student) is available for download at the address listed below under Reference 2.

Single student pilot study:

This method has be tested by me in an obligatory course within one of Chalmers master programs. The student for whom I designed this learning support tool had asked me to create another re-exam, after failing six exams in a row in this course. This was the only exam left before the degree could be requested. I provided the student with the instructions and template for the above mentioned learning plan.

Results:

The student's interpretation of the learning plan document differed substantially from that intended. After several rounds of returns, and pledged "proper" studying, the student was given a chance to be re-examined with a single-student written exam. The results of the seven exams, including the final one which has now been passed, as well as the student's subjective reflection on the usefulness of this learning support tool will be presented at the onset of the round table discussion.

Discussion:

It should be useful to get input from other Chalmers teachers as to how best to support student learning in challenging final re-exam situations. A revised version of this document, after the round table discussion at KUL would likely be a useful tool to make available to other teachers, possibly via the Education pages on Chalmers Insidan.

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References:

1. *in English:* Instructions for planning and implementation of First and Second-cycle Examinations academic year 2016/17, see page 8 section 2.3 Extra examination dates, available at:
http://document.chalmers.se/download?docid=91ce6170-5578-40e9-bdc1-830175233655&lang=en

in Swedish: Föreskrifter för planering och genomförande av examination på grund- och avancerad nivå läsåret 2016/17, se sidan 10, rubriken ”2.3 Extra tentamenstillfällen” på länken:
http://document.chalmers.se/download?docid=91ce6170-5578-40e9-bdc1-830175233655&lang=sv

2. Learning plan before single-student-exam, available as pdf and Word document at PingPong activity:
https://pingpong.chalmers.se/courseId/3024/content.do?id=3365566

Learning plan before single-student final re-exam

Sheila Galt – Round table discussion RT1 – KUL – Chalmers – 2017-01-12

Participants in round table discussion:

- Sheila Galt, MC2, Viceprefekt, Pedul at KFM – discussion leader
- Per Lundgren, MC2, Pedul at EDITI and ASAM – moderator
- Elsebeth Schröder, MC2, MPA for MPNAT
- Pernilla Ståhlberg, Education support
- Arne Linde, D&IT, PA for D-180hp

Discussion structure

- Single-student final re-exam
- Learning plan document
- One example of its use
- Revise this document?
- Other strategies?

- Similar frustrations?
- What do the rules say?
- Prioritizing our suggested actions

- learning support actions
- pedagogical support actions
- administrative support actions
- rules needing change
- rules needing compliance

Single-student final re-exam

- The situation:
  - Last exam (usually re-exam) before degree
  - Single student may request extra re-exam
- The problem:
  - Workload of creating unique single-student re-exam
  - Most challenging course left to the end?

Learning plan document

- Intended to help student's learning before final re-exam
  - to be filled in by the student, with feedback from the teacher
- Part 1: Analysis of previous failed exam attempts
  - choose 3 learning aspects from each exam
  - identify room for improved learning
  - make plan to achieve learning
- Part 2: Learning goals and course content
  - from course plan, keyed to above learning aspects in need of improvement
- Part 3: Time schedule for achieving identified learning aspects
  - dates, learning aspects, study plan activities, checkpoint actions

Learning plan before single-student exam

Chalmers, MC2, Sheila Galt

Document created 2016-09-07

Introduction to the learning plan document:

This document is intended for use before the examiner creates a single-student exam, upon request of the student (for example when only one course remains to be passed before all degree requirements are fulfilled.

The purpose of this document is to help the student analyze and fulfill the remaining learning goals required in order to pass the exam. The student should do the analysis of breaking down the learning goals into sub-goals, specific to the identified difficulties in their own previous attempts at exams in the same course. The document will help the student to make and follow a plan which increases the chance of learning enough to actually pass the requested single-student exam.

This method of supporting the student's own analysis and subsequent learning will be suggested over a broader range of Chalmers courses if the results are shown to be successful in the ongoing pilot study at MC2.

Instructions to the student:

For each of your previous attempts at passing the written exam in this course, find three different important aspects of your "room for improved learning". These may for example be a concept you misunderstood, a calculation you did incorrectly, a section of subject material you previously skipped in your study, or some other learning you see was missing in that attempt at the exam.

Be as specific as possible, and fill in the table below with your identified "room for improved learning" and your "plan to achieve learning" connected to each specific point. For your plan, you might for example want to read specific pages in a textbook, calculate specific exercises, write specific summaries, or use some other study method that you know would help your learning.

If you have attempted and failed at more than one written exam in this course, try to identify three new specific learning aspects in your list of “room for improved learning” for each of the exams in the table. These specific aspects are numbered in the table, so that you easily can refer to them.

After filling out the table, look at the learning goals and course content as specified in the course plan which you can find on the Student Portal. Copy the learning goals and course content lists into this document, and indicate where your own identified learning aspects fit into the course plan (using your learning aspect code from your table).

Finally, write a specific and realistic time schedule for achieving the aspects that you have identified as “room for improved learning”. Identify suitable checkpoints if the amount of work is large. Send this document to your examiner, and send a short progress report at the identified checkpoint(s). When you are convinced that you have fulfilled your learning plan, contact the examiner to request a date for the single-student-exam.

Student name: e-mail:

Course code: Course name:

Analysis of previous exam attempts:

Exam date	P1 P2 P3	Q	L	room for improved learning	plan to achieve learning
			A1		
			A2		
			A3		
			B1		
			B2		
			B3		
			C1		
			C2		
			C3		

P1: points achieved

P2: points required to pass the exam

P3: maximum points on the exam

Q: question number on the exam

L: learning aspect code

Learning goals and course content:

(copied from course plan and keyed to learning aspect codes).

Time schedule for achieving identified learning aspects:

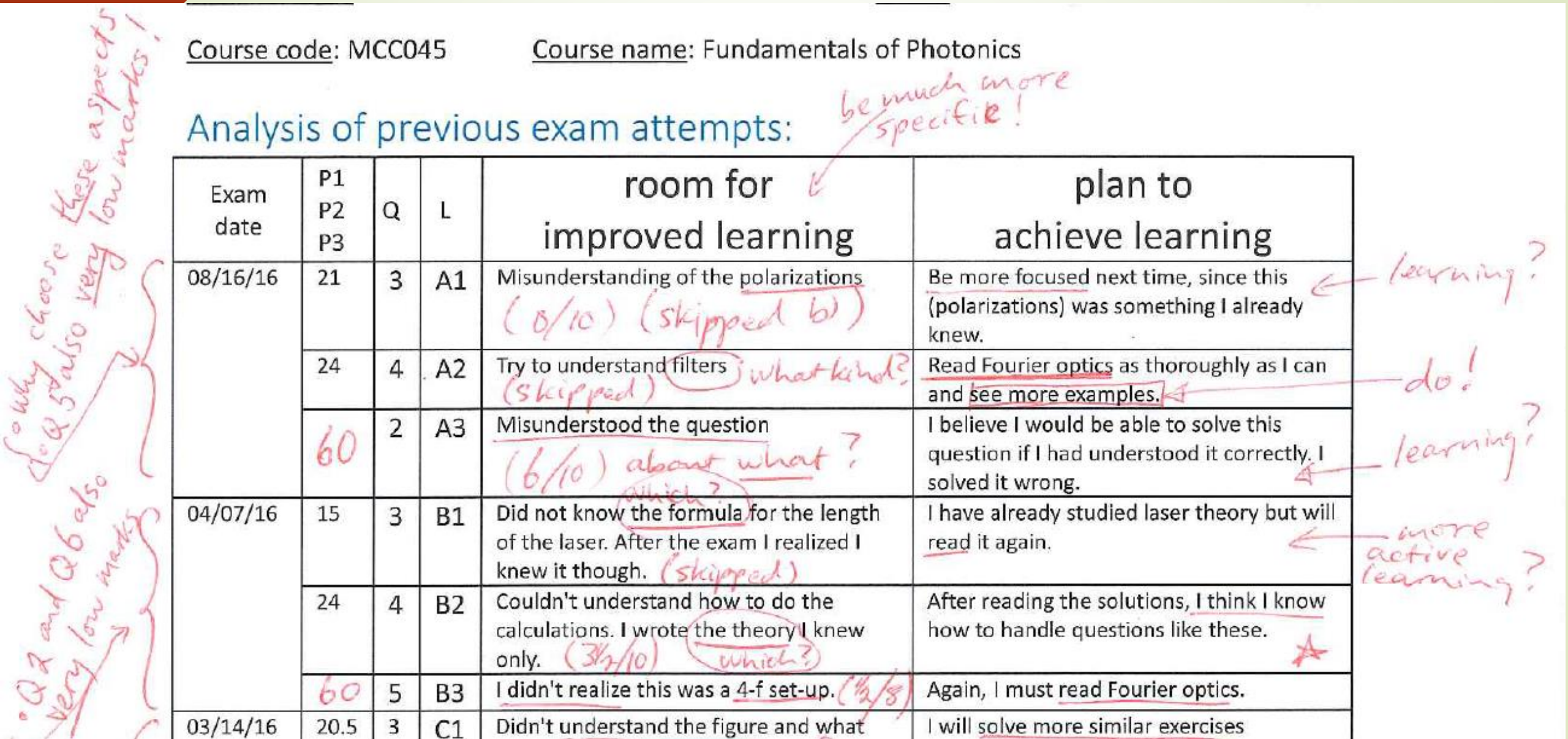
Date	L	Study plan activity finished	Checkpoint action

L: learning aspect(s) achieved (code)

One example of use of learning plan

Exam date	P1 P2 P3	Q	L	room for improved learning	plan to achieve learning
08/16/16	21	3	A1	Misunderstanding of the polarizations	Be more focused next time, since this (polarizations) was something I already knew.
	24	4	A2	Try to understand filters	Read Fourier optics as thoroughly as I can and see more examples.
		2	A3	Misunderstood the question	I believe I would be able to solve this question if I had understood it correctly. I solved it wrong.
04/07/16	15	3	B1	Did not know the formula for the length of the laser. After the exam I realized I knew it though.	I have already studied laser theory but will read it again.
	24	4	B2	Couldn't understand how to do the calculations. I wrote the theory I knew only.	After reading the solutions, I think I know how to handle questions like these.
		5	B3	I didn't realize this was a 4-f set-up.	Again, I must read Fourier optics.

Teacher feedback – round one



Course code: MCC045 Course name: Fundamentals of Photonics

Analysis of previous exam attempts:

Exam date	P1 P2 P3	Q	L	room for improved learning	plan to achieve learning
08/16/16	21	3	A1	Misunderstanding of the polarizations (0/10) (skipped b)	Be more focused next time, since this (polarizations) was something I already knew.
	24	4	A2	Try to understand filters (skipped)	Read Fourier optics as thoroughly as I can and see more examples.
	60	2	A3	Misunderstood the question (6/10)	I believe I would be able to solve this question if I had understood it correctly. I solved it wrong.
04/07/16	15	3	B1	Did not know the formula for the length of the laser. After the exam I realized I knew it though. (skipped)	I have already studied laser theory but will read it again.
	24	4	B2	Couldn't understand how to do the calculations. I wrote the theory I knew only. (3½/10)	After reading the solutions, I think I know how to handle questions like these.
	60	5	B3	I didn't realize this was a 4-f set-up. (½/8)	Again, I must read Fourier optics.
03/14/16	20.5	3	C1	Didn't understand the figure and what	I will solve more similar exercises

Exam date	P1 P2 P3	Q	L	room for improved learning	plan to achieve learning
03/16/15	18	2	A1	Try to visualize what the question asks. I remember, I could not visualize and consequently solve the question. I definitely know snell's law.	Through solving exercises but trying to visulaize them first and them apply formulas.
	30	3	A2	Understand the given figure and how it should work and what its meaning is, so that I can interpret it correctly and solve the question.	By looking at non-linear optics theory in more detail and by solving more examples (I have already solved a few though on non-linear optics).
		4	A3	I miscalculated the w0 term and I didn't know the formula of the peak intensity either.	Through gaussian beam theory and exercises on gaussian beams. I am comfortable now on solving those kind of questions.
	60	5 & 6	A4	I had not read well the numerical tutorials theory and I did not know the answers.	I have already studied the numerical tutorials in detail and the theory that is related to them.
04/16/15	20.5	2	B1	I did not know the theory for this question.	I have drwan a few sketches that utilized beam optics to understand how they work.
	30	3	B2	Could not relate W_{rec} / W(z) to A_{rec} / A_{beam} and so could not calculate Wo.	I have checked and undrstood the solution for this question.

Background and results for pilot study using learning plan document for one student

- 6 failed written exam attempts before learning plan document introduced
- collected marked exams after learning plan document feedback
- revised learning plan document still without time schedule
- 7th written exam passed (squeezed through)
- comments from student requested after exam but before marking
  - (see next slide)

Reflections from one student

- **Introduction to the learning plan document:** This introductory section is consistent and explains thoroughly its goal and usability, so i would say that it's useful.
- **Instructions to the student:** I was a bit misled by the title "room for improved learning". Nonetheless, the following explanation sentence was very helpful. What i mean by "i was a bit misled" is that i had some difficulties to fill in the table ("analysis of previous exams attempts"). I think if there was a title like "What went wrong or What is that you haven't understood completely" that would be easier for me to understand. The same applies for the "plan to achieve learning" but not in this extent.
- **Analysis of Previous exams attempts:** This was very good as an idea, because it helps the student to analyze his studying in subcategories (divide and learn). My only problem were the titles, but it is not something that important.
- **Time schedule for achieving identified learning aspects:** This is also very helpful, since you can write down everything you have studied and have a more clear image of what you have done and what you haven't done.

Revise this learning plan document?

- How can we make this tool more useful?
- Will this tool suit any "generic" course at Chalmers?

Other strategies for final re-exams?

- Oral exam?
- Wait for regular re-exam?
- Extra home assignment or home examination?
- Exam at other university?

Similar frustrations?

- learning support needs?
- student requests?
- frustrating situations?
- teacher workload?
- pedagogical support needs?

What do the rules say?

Instructions for planning and implementation of
First and Second-cycle Examinations academic year 2016/17

see page 8 section 2.3 Extra examination dates

available through Chalmers Insidan at:
http://document.chalmers.se/download?docid=91ce6170-5578-40e9-bdc1-830175233655&lang=en

"When only one examination remains until graduation, extra examination dates should be offered to the student during the semester period. It is up to the examiner to decide whether the student is to be offered extra examination dates."

Prioritizing our suggested actions

- learning support actions
- pedagogical support actions
- administrative support actions
- rules needing change
- rules needing compliance

- Note: In the following slides, short comments and phrases from the round table discussion are added to these "presentation slides" after the discussion.
- The discussion was held in Swedish, so the comments are here noted in Swedish.

learning support actions?

- Learning plan doc – men den kräver lärarfeedback från läraren. Dock kan det vara snabbare för läraren att ge denna feedback än att behöva göra om en helt ny tenta! (…underförstått att studentens analys och extrafokus på lärandet innan man skapar extratentan gör det troligt att studenten klarar extratentan.)
- Skulle kunna krävas redan efter andra eller tredje misslyckade tentaförsöket.
- Viktigt i så fall att studenten sparar misslyckade tentaförsök för att senare kunna analysera dessa. Information till alla studenter skulle behövas!
- En omarbetad version av ”Learning plan doc.” skulle kunna tas fram för andra examinationsformer än salstentor.

pedagogical support actions?

- Att ta fram varianter av fungerande "extraexamination" för olika typer av kurser, med hänsyn taget till att spara lärarresurser, skulle kunna hjälpa flera.
- Exempel: Ett fungerande alternativ till extra salstenta: Hemtentamen eller samling av uppgifter med enbart 3:a möjlig, 24 timmar att genomföra, och krav på att kunna förklara muntligt.
- Lärarnas samlade röster har svårt att höras i diskussionen om regelverk kring examination. Vem för deras talan? Fakulteten? Viceprefekter? Deras gruppering är inte något beslutsorgan på Chalmers, men bör kanske stärkas i sin roll som samtalsledare mellan lärarna och regelmakarna (processledaren för grundutbildningen?) som påverkar deras möjlighet att examinera på ett effektivt sätt.

administrative support actions?

- amanuenser som kan hjälpa med t.ex. enklare rättning och/eller administration kring undervisningen – skulle kunna frigöra tid för lärarna att ägna mera tid åt själva undervisningsmomenten och examinationsmomenten.
- Skriv om Learning plan document på Insidans nyheter, publicera men länk på Insidan, informera viceprefekterna, och låt fler lärare test och anpassa idéen, kanske med sina erfarenheter samlade i en tillhörande lärarblogg???

rules needing change?

- Gör det tydligt att "bör" inte innebär skyldighet. Skall ett "nej" accepteras? Orsakar detta inte bara problem för kollegorna som då blir tillfrågade om byte av examinator?
- Samtal med studentkåren krävs! I valet mellan att fortsätta erbjuda tre tentatillfällen per år för obligatoriska kurser, eller att erbjuda extratentor väljer kåren att prioritera ordinarie omtentor.
- När examinatorns tid ("examinationsresursen") är slut för kursen – får man säga konsekvent nej – och utstå mycket negativa kommentarer från studenterna.
- Det är otydligt för flera vad som gäller i detaljnivå för publicering av lösningar efter tentor. Påpekades att det kan räcka att hänvisa till ett avsnitt i läroboken där liknande lösningar finns. Var står reglerna?

rules needing compliance?

- Informell ömsesidighet med hjälp till och från studenterna … “hygglopoäng!” En vision om att man som lärare kan tänkas ställa upp lite extra om studenterna har gjort något bra först …
- Oklart för oss om det bara är på Chalmers som man får tentera obegränsat antal gånger.
- Informationsflödet fungerar inte väl gällande tentander som beviljats extra tid på salstentor. Examinator behöver informationen i god tid för att planera besöken till tentasalen.

Any other notes on this topic

- Oklart om utdelning av kopierat material fysiskt istället för elektroniskt på kurshemsidan.
- Angränsande fråga: när kommer vi att kunna skicka tentamensteser elektroniskt? Att skrivningarna med studenternas svarsblad skickas öppet i internposten och läggs i brevfack är också möjligt att ifrågasätta.
- Noterat i efterhand att Sjöfart och Marinteknik har en egen policy som skärper regelverket kring sista omtentan. Viktigaste punkterna:
  - En student kan högst beviljas en extra omtentamen per läsår
  - Om mindre än en månad återstår till ordinarie tentamen eller ordinarie omtentamen kommer ingen extra tentamen att beviljas

Thank you for participating!