

Virtual aspects of teaching



Our most important principles

- A well organised Absalon page
- Online elements are supplementary
 - Should not detract from the teaching on location
- Centralized communication
 - (preferably on absalon)
- Record lectures or parts
 - But not in place of live lectures!



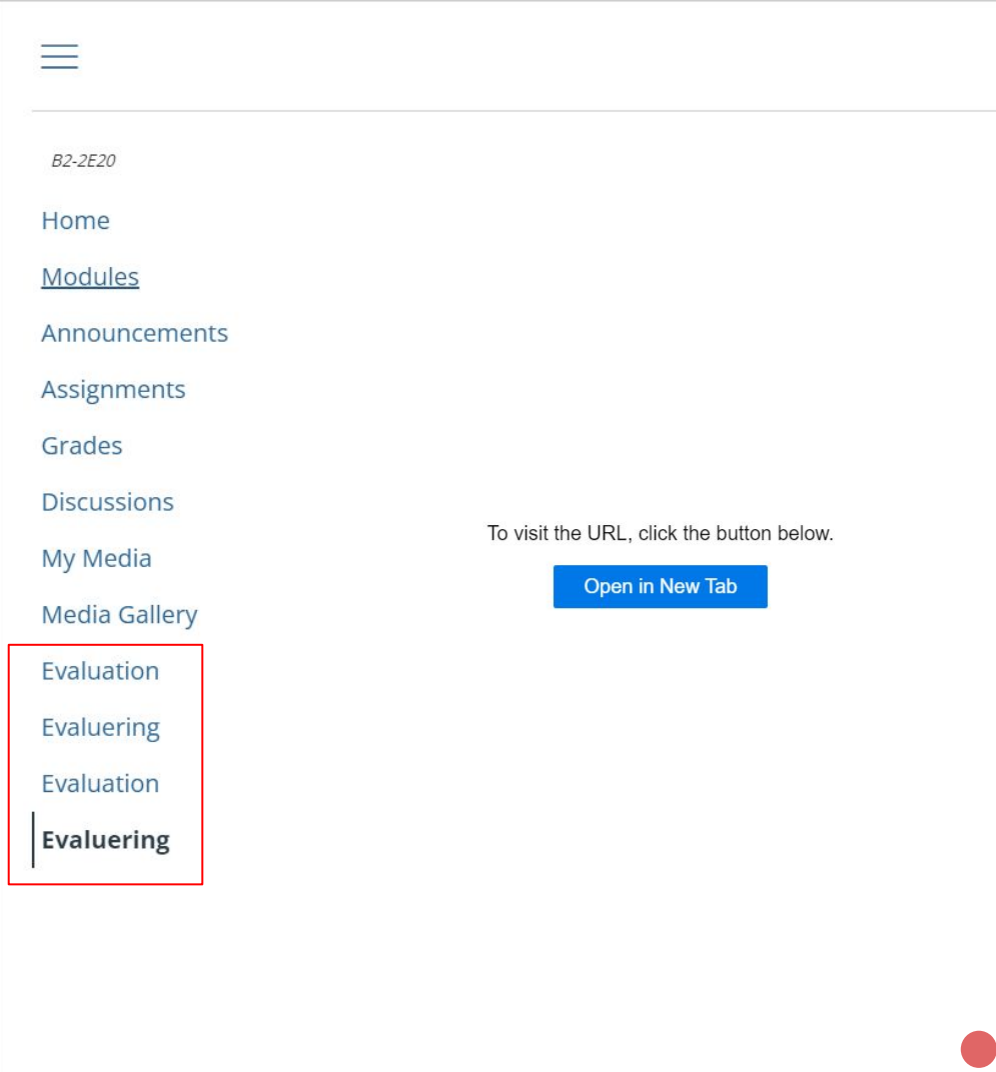
The right Absalon page

- Absalon is a really powerful tool
- A course's absalon page is the students' first impression of the course
- It is currently not utilised to its full potential



Examples:

- Reminding your students to evaluate is really important.
 - But is it this important?
- Editing which tabs your students can access is a BBM

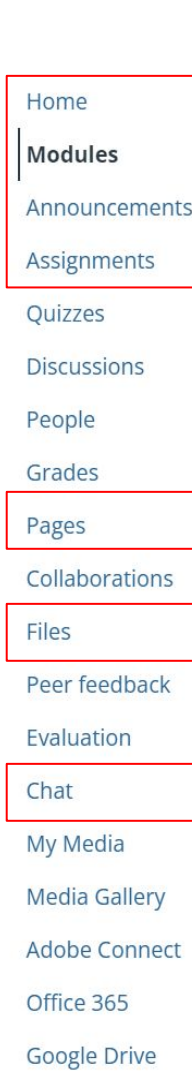
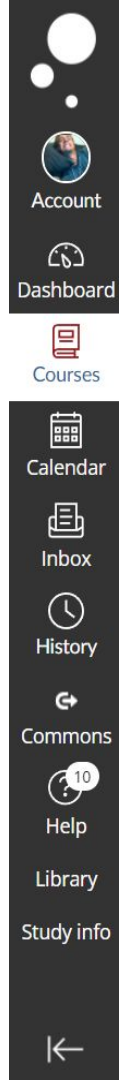


To visit the URL, click the button below.

Open in New Tab

Examples:

- Good: modular week based structure that makes it easy to prepare each week
- Bad: All possible tabs available, only the framed ones are used



Account

Dashboard

Courses

Calendar

Inbox

History

Commons

Help

Library

Study info

Home

Modules

Announcements

Assignments

Quizzes

Discussions

People

Grades

Pages

Collaborations

Files

Peer feedback

Evaluation

Chat

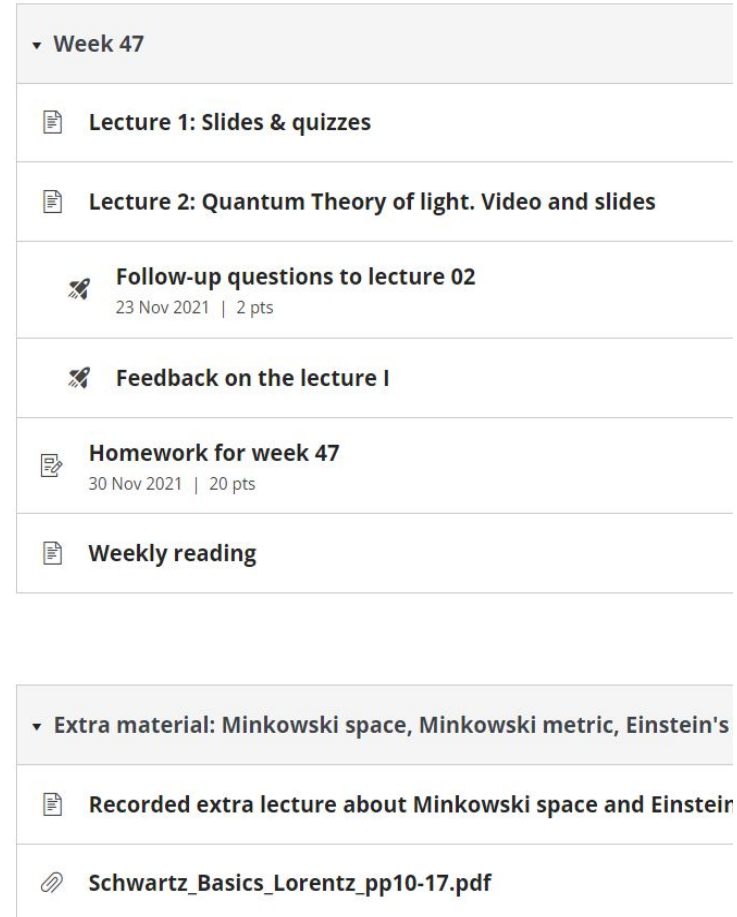
My Media

Media Gallery

Adobe Connect

Office 365

Google Drive



▼ Week 47

- 📄 Lecture 1: Slides & quizzes
- 📄 Lecture 2: Quantum Theory of light. Video and slides
- 🚀 Follow-up questions to lecture 02
23 Nov 2021 | 2 pts
- 🚀 Feedback on the lecture I
- 📄 Homework for week 47
30 Nov 2021 | 20 pts
- 📄 Weekly reading

▼ Extra material: Minkowski space, Minkowski metric, Einstein's

- 📄 Recorded extra lecture about Minkowski space and Einstein
- 📎 Schwartz_Basics_Lorentz_pp10-17.pdf



Examples:

- Files are important since it's the go-to-solution independent of course

Account
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Study info

- Home
- Modules
- Announcements
- Chat
- People
- Pages
- Assignments
- Files**
- My Media
- Media Gallery
- Collaborations
- Evaluation
- Office 365
- Google Drive
- Grades



Search for files 0 items selected

▼ 5030-B3-3F22;Kvantemekanik 1(KI)

- ▶ course_image
- ▶ Frontpage
- ▶ Hand-ins
- ▶ IBM Q
- ▶ Lab
- ▶ Numerical

Name ▲
course_image
Frontpage
Hand-ins
IBM Q
Lab
Numerical

0% of 15.7 GB used



Examples:

- KU has a guide to how to organise your absalon page



<https://kUNET.ku.dk/arbejdsomraader/undervisning/absalon/Sider/default.aspx?searchHitHighlight=absalon>

KUnet

Telefonbog | English front page | Hjælp | Log af | Freja Amalie Nørby

Søg...



Forside | Nyhedsrum | Selvbetjening | Studieinformation | Grupperum | Om KU

Du er her: [Forside](#) > [Arbejdsområder](#) > [Undervisningsportal](#) > Absalon



Undervisningsportal

Undervisningsportal

- ▣ Absalon
- ▣ Eksamen
- ▣ Guidelines til online undervisning
- ▣ Undervisningsudvikling
- ▣ Kurser til undervisere
- ▣ Persondata
- ▣ Plagiatkontrol
- ▣ Biblioteksressourcer
- ▣ Nyheder

Absalon

"Det er meget nemmere at forberede sig, når underviseren har tænkt over kursusrummets opbygning" – Josefine Sinkjær Søndergaard, studerende

"En god og intuitiv struktur på Absalon giver en god kursusstart for de studerende" – Tina Møller Sørensen, underviser

KU sætter spot på Absalon kursusrum

Det skal være lettere for studerende, undervisere og kursusansvarlige at anvende kursusrummene på Absalon, KU's digitale læringsplatform. Derfor sætter KU i

Fremhæv søgeord


KONTAKT

SAMF: [Kontakt Pædagogisk Center Samfundsvidenskab](#)

SCIENCE: [Kontakt IT Læring](#)

Examples:

- Overview documents are ALWAYS appreciated
- So is an early, general structure
- They are really good for the pre-exam week



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Week	Monday (13:15–15.00 & 15.15-17.00)	Wednesday (9:15–12.00 & 13.15-17.00)
1 (22+24/11)	<p>Session 01</p> <p>Quantum fields and second quantization I</p> <p>Reading: Coleman Ch. 1, 2.</p> <p>Topics: Introduction to quantum fields. Quantization of specific collective fields, harmonic oscillators and strings. Recap of statistical physics.</p> <p>Exercises: 2.1, 2.4.</p>	<p>Session 02</p> <p>Quantum fields and second quantization II</p> <p>Reading: Coleman Ch. 3.</p> <p>Topics: Fermions and bosons in second quantization. Commutation relations. Field operators. Vacuum and connection to standard wavefunctions.</p> <p>Exercises: 2.7, 2.2, 3.1, 3.2.</p>
2 (29/11-1/12)	<p>Session 03</p> <p>Quantum fields and second quantization III</p> <p>Reading: Coleman Ch. 3 + Ch. 4.2.</p> <p>Topics: Operators in second quantization. Example of wavefunctions derived from second quantization. Momentum space representation. Interactions in second quantization. A bit about the Hubbard model.</p> <p>Exercises: 3.3, 3.5, 4.3(a-c).</p>	<p>Session 04</p> <p>Examples of 2nd quant + Green's functions I</p> <p>Reading: Coleman Ch. 4.1, 4.3.1, 5.1.</p> <p>Topics: Non-interacting fermions in second quantization framework. Spin chains. Jordan-Wigner transformation. The interaction representation and time-evolution.</p> <p>Exercises: 4.1, 4.2, 4.4</p>
3 (6+8/12)	<p>Session 05</p> <p>Green's functions II</p> <p>Reading: Coleman Ch. 5.1.</p> <p>Topics: The interaction representation and time-evolution. Generating functional and Wick's theorem (bosons). Greens functions.</p> <p>Exercises: 5.1, 5.3.</p>	<p>Session 06</p> <p>Green's functions III</p> <p>Reading: Coleman 5.2-5.4</p> <p>Topics: Greens functions. Generating functional and Wick's theorem (fermions). Many-body Greens functions and contractions.</p> <p>Exercises: 5.2, Worksheet 1.</p>

Other platforms

- 🎪 Discord, Facebook, Slack, Gather-town, Zoom, Skype, Microsoft Teams, Self-owned websites, Erda, Github
- It is often unnecessary and confusing for the students. Absalon is mandatory but don't force anything else on them.
- Absalon also already has most of the function other platforms have



Virtual aspect of actual teaching

- This question →
Has been on the Course
evaluation since corona
started.

3.5 Har du forslag til hvordan digitale værktøjer kan forbedre undervisningen? Nævn gerne digitale elementer i den undervisning du har deltaget i, som du synes enten bør bruges fremover eller ikke bør bruges fremover.

- One answer is recurring →

It was beneficial to be able to see the lecture online
if one could not attend





Recorded lectures

- Excellent extra offer
- It mustn't have a negative effect on the on-site lectures
- Technical difficulties are common
 - Possibly no questions directly form online



Exercise Classes

- Blended exercises do usually not work well
- Many methods to accommodate:
 - Extra online Class on Zoom (break-out rooms)
 - Have a waiting list on google docs
- Video examples of calculations
(Shout out to Albert for winning the TA-price)

Eksempel på Laurent-række

Opgave 2d, Uge 4. (Laurent-række 1)
 Find Laurent-rækken om punktet $z_0=2$ for

$$f(z) = \frac{z}{(z-2)(z+3)}$$

$$= \frac{z-2+2}{(z-2)(z-2+3)} = \frac{(z-2)+2}{(z-2)(z-2+5)}$$

$$= \frac{1}{z-2} \left[\frac{1}{(z-2)+5} + 2 \frac{1}{(z-2)+5} \right] = f(z-z_0)$$

Notes side 1:
 • Om skriv $f(z) \rightarrow f(z-z_0)$
 • Undersøg $\lim_{z \rightarrow z_0} f(z-z_0)$

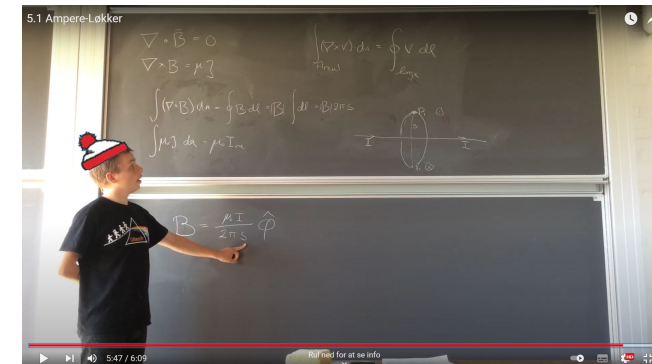
Taylor af $g(z-z_0)$ om $z-z_0=0$.
 $g(z-z_0) = g(z-z_0)|_{z-z_0=0} + \frac{2g'(z-z_0)}{1!(z-z_0)} \Big|_{z-z_0=0} + \frac{1}{2!} \frac{d^2 g(z-z_0)}{dz^2} (z-z_0)^2 + \dots$

Vi får:
 $\frac{1}{(z-2)+5} = \frac{1}{5} - \frac{1}{5^2} (z-2) + \frac{2}{5^3} (z-2)^2 - \dots = \sum_{n=0}^{\infty} \frac{1}{5^{n+1}} (-1)^n (z-2)^n$

Så:
 $f(z-z_0) = \frac{1}{z-2} \left(\sum_{n=0}^{\infty} \frac{1}{5^{n+1}} (-1)^n (z-2)^{n+1} \right) + 2 \left(\sum_{n=0}^{\infty} \frac{1}{5^{n+1}} (-1)^n (z-2)^n \right)$



Video af Jonas S. Juul.





Quizzes

- Pre lecture quiz
 - 5-10 questions for the assigned reading
 - One 'what did you find difficult?' question
- Post lecture quiz
 - Evaluation of the day-quiz
 - Test-yourself-quiz
- During lecture quiz
 - Creates engagement
 - Also those who don't like public speaking
- If quizzes are implemented:
 - Take into account how many are there
 - Graded quizzes are very time consuming
 - Are relevant to the material
- Quizzes are more difficult to find if indexed by date.
 - Consider naming after week or subjects





Quizzes

- We have made a Kahoot:
 - Kahoot.it
 - Where you can tell us your opinion of socrates:
 - Socrates.com
 - The winners gets to answer the pool on Zoom:
 - Zoom.com
 - Why everybody doesn't just use Absalon for quizzes:
 - Absalon.ku.dk



Thank you

And did you find Waldo?

