

DTU





Arnold Knott

Teaching Adventures

Spring 21: Normal use of DTU Learn

DTU 31003 Electric circuits 2 Spring 21

Course Admin My Course ▾ Activities ▾ Content Assignments Discussions Video & Streaming Help

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Overview

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Course Schedule

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Signals ▾

Add dates and restrictions...

Add a description...

Upload/Create ▾ Existing Activities ▾ Bulk Edit

Expand All | G

Week 1 ▾

Checklist

You are supposed to have checked of this list BEFORE the lecture time!

Time Domain ▾

Upload/Create ▾ Existing Activities ▾

- presentation_signals_time_domain ▾ ✓
 - PDF document
- Signals: Characteristics and Examples ▾ ✓
 - Video
- ?_?Signals characteristics and examples?_? ▾ ✓
 - Quiz
- Signals: Parameters ▾ ✓
 - Video
- ?_?Signals: parameters?_? ▾ ✓
 -

Examples

- YouTube
- Learn quizzes
- Learn chat ⇒ **NO** posts
- Learn checklists ⇒ popular

Spring 21: Evaluation

I've learned a lot in this course (all courses):

2021



What do you think about those tools? (2021)

DTULearn



Discord



MSForms



YouTube



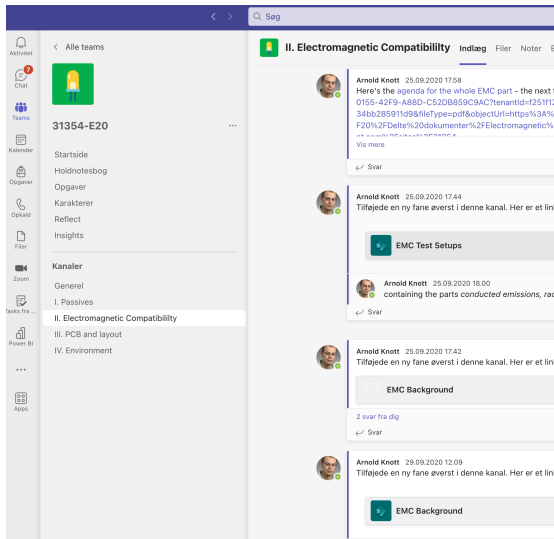
Lab



Fall 21: MS Teams with embedded Sharepoint sites


Examples







- Sharepoint to share learning material
- MS Teams chat ⇒ **very little** posts
- ⇒ not really a success!











The screenshot shows the MS Teams interface. On the left is a sidebar with navigation options like 'Alle teams', 'Chat', 'Teams', 'Kalender', 'Opgaver', 'Karakterer', 'Reflect', 'Insights', 'Kanaler', 'Generel', 'I. Passives', 'II. Electromagnetic Compatibility', 'III. PCB and layout', and 'IV. Environment'. The main area displays the 'II. Electromagnetic Compatibility' channel. It shows a list of posts by 'Arnold Knott' from 25.09.2020. The first post is a long text message about an agenda for the EMC part, followed by a 'Vis mere' link. The second post is a shorter text message about adding a new fan to the channel, followed by an embedded document titled 'EMC Test Setups'. The third post is another short text message about adding a new fan, followed by an embedded document titled 'EMC Background'. The interface also shows a search bar at the top and a user profile at the top right.

Spring 22: dissable Learn and embed version 1 of own interface.


Arnold Knott- Sandbox






Arnold Knott



My Course

Announcements

Peergrade

Assignments

Discord Channel

Content

KryddisboksAKN

Help

Week 1
Week 2
Week 3

Before Lecture

Please conduct all of these tasks before the lecture!


Literature

Read chapters 1 and 2 in textbook.

Feedback: What do you think about this?

Arnold would like to hear, what you think about this sandbox implementation! Please give me keywords below.

Put in your keywords here:



What do you think about this implementation?

You can submit multiple answers

Submit

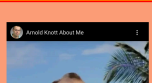
This is the feedback, collected so far:

What do you think about this implementation?

great
looks good

First section of this page

First subsection of this page



Are you awake?

Hej, Arnold. Når du indtaster denne formular, vil apparatet dit navn og din e-mailadresse.

June 14, 2023

DTU Elektro

Teaching Adventures

6

Integration of mainstream tools

First section of this page

First subsection of this page



Are you awake?

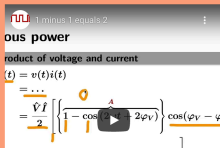
Hej, Arnold. Når du indsender denne formular, vil ejeren se dit navn og din e-mailadresse.

1. What's the name of the teacher?
(1 point)

Skriv dit svar

☐ Send mig en mailkvikering med mine svar

Send



Examples

- YouTube
- Microsoft Forms
- Discord channels
- Mentimeter
- PDF-preview
- slides, pictures, ...
- basically every tool, that has an `<embed>`, a `<iframe>`, API, CLI or similar.

Student activation

During Lecture

We do all of this, during the lecture. If you can't finish it, please catch up after the lecture! 🙌

Introduction to Electronics from Arnold

Welcome - examples of applications - questions?

Results from your inputs above

Go to www.menti.com and use the code 2047 5093


What do you think about this implementation? Mentimeter

great
looks good

Introduction
Properties

Exercise 1.1 Properties of power converters

What would you, as a user and/or as a coming engineer expect from power converters?



1_1_properties_pw...

Arnold: signal on another side after skills tabs?!

Arnold: and now from another tab within DTU Learn

Messages

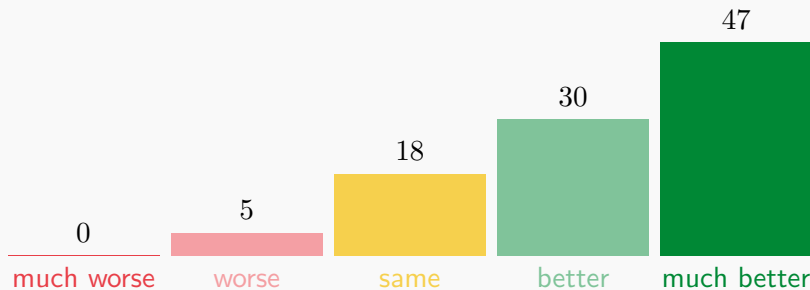
Evaluation Spring 22: before and after

What do you think about those tools?



Evaluation Spring 22: Comparison to other courses

Compared to other courses at DTU - how do you like my setup of DTU Learn, with the frames on the frontpage, the integration of videos, quizzes, and so on?



77% out of 66 students think, that my setup is better or much better!

Version 2: still most of learn disabled and learned Typescript, Cloud, ...



34601 Electric circuits 2 Spring 23



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15. Feb

SIGNALS

[Time Domain](#) [▼](#)[Frequency Domain](#) [▲](#)[📖](#) Readings for Fr...[📺](#) Fourier Series[🔍](#) Quiz: Fourier S...[📺](#) Spectrum[🔍](#) Quiz: Spectrum[Sources](#) [▼](#)[Power](#) [▼](#)[Three Phase](#) [▼](#)

COMPONENTS

[Resistor](#) [▼](#)[Inductors](#) [▼](#)[Coupled Inductors](#) [▼](#)[Capacitors](#) [▼](#)[Impedances](#) [▼](#)[chapter 8.2 in textbook](#)

Video

Components: Impedance and admittance

Complex Impedances and Admittances

Components, Signals, Impedances and Admittances

Component	Ohms law	Impedance	Admittance
	$V_R = RI_R$	$Z_R = R$	$Y_R = \frac{1}{R} = G$
	$V_L = j\omega LI_L$	$Z_L = j\omega L = jX_L$	$Y_L = \frac{1}{j\omega L} = jB_L$ with $B_L = -\frac{1}{\omega L}$
	$V_C = \frac{1}{j\omega C} I_C$	$Z_C = \frac{1}{j\omega C} = jX_C$ with $X_C = \frac{1}{\omega C}$ $j = \sqrt{-1}$	$Y_C = j\omega C = jB_C$

Se på [YouTube](#)

Quiz

Components: Impedances and admittances

Hej, Arnold. Når du indsender denne formular, vil ejeren se dit navn og din e-mailadresse.

1. What's the real part of impedance? (1 point)

- ☐ conductance
- ☐ susceptance
- ☐ resistance

Power and Energy in Components

Literature

[chapter 8.6 in textbook](#)

Version 2: still most of learn disabled and learned Typescript, Cloud, ...



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Course Home My Course ▾ Announcements Assignments Dis

≡ Slides Week

1 2 3

SIGNALS

Time Domain ▾

Frequency Domain ▴

Readings for Fr...

Fourier Series

Quiz: Fourier S...

Spectrum

Quiz: Spectrum

Sources ▾

Power ▾

Three Phase ▾

COMPONENTS

Resistor ▾

Inductors ▾

Coupled Inductors ▾

Capacitors ▾




Impedances ▾

chapter 8.2 in textbook

Video

Complex Impedances and Admittances

Components, Signals, Impedances and Admittances

Component	Ohms law	Impedance	Admittance
 $R i_R(t)$ $v_R(t)$	$V_R = R I_R$	$Z_R = R$	$Y_R = \frac{1}{R} = G$
 $L i_L(t)$ $v_L(t)$	$V_L = j\omega L I_L$	$Z_L = j\omega L = jX_L$	$Y_L = \frac{1}{j\omega L} = jB_L$ with $B_L = -\frac{1}{\omega L}$
 $C i_C(t)$ $v_C(t)$	$V_C = \frac{1}{j\omega C} I_C$	$Z_C = \frac{1}{j\omega C} = jX_C$ with $X_C = \frac{1}{\omega C}$	$Y_C = j\omega C = jB_C$

Se på YouTube

Power and Energy in Components

Literature

chapter 8.6 in textbook

Examples

adds

- professional design
- table of contents
- navigation
- automatically switches to relevant material based on date
- mobile and tablet version
- hosted in Microsoft Azure cloud

☐ resistance

Version 2: other view



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Before Lecture

During Lecture

Reflection

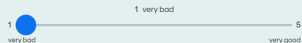
What do you think about the setup in DTU Learn?



What do you think about the setup in DTU Learn in this course...

... compared to other courses?

Skip



Submit

Please rate your experience.

Here's how others rated:

Join at www.menti.com/jd74r421w8pp

Mentimeter

What do you think about the setup in DTU Learn in this course...

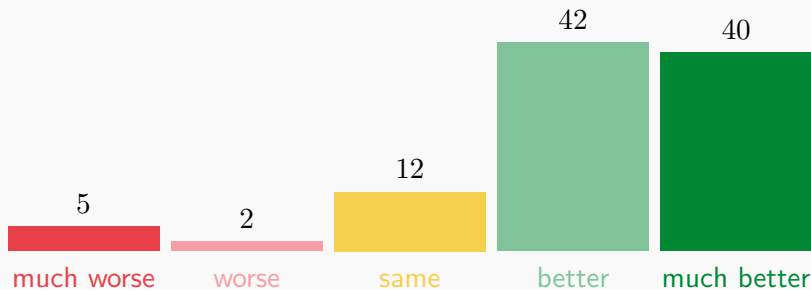
Something went wrong.



Thanks for contributing and please: keep the feedback coming!

Evaluation Spring 23: Comparison to other courses

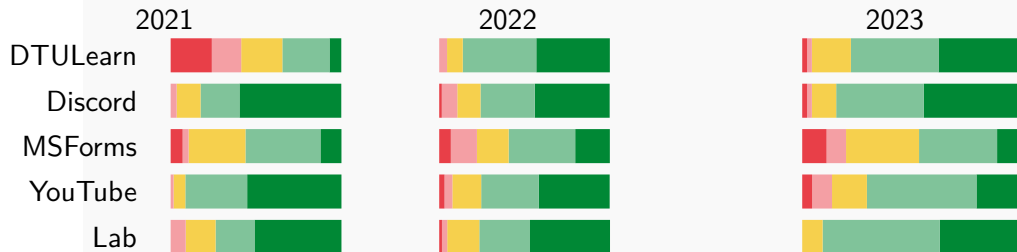
Compared to other courses at DTU - how do you like my setup of DTU Learn, with the frames on the frontpage, the integration of videos, quizzes, and so on?



82% out of 43 students think, that my setup is better or much better!

Evaluation Spring 21, 22 and 23: normal Learn, 1st version and 2nd version

What do you think about those tools?



What students say...

- “Ombygningen af Learn har gjort det meget nemmere at finde rundt i kurset og brugen af Discord har gjort det nemmere at spørge om hjælp samt bare at arbejde.”
- “Arnolds programmering af dtu learn er fremragende og gør faktisk at det kan anvendes til noget fornuftigt! Det giver et meget bedre overblik end man ellers ville kunne få.”
- “Et godt struktureret kursus, og kan godt lide layoutet på Learn da det er intuitivt og mere spændende end den normale side.”
- “Jo mindre Learn jo bedre. Til næste kursushold, bare uploadede din hjemmeside til dem i stedet, ville højst sandsynligt være lettere at bruge.”
- “Baren med logoer i toppen af Learn fylder for meget..! Kan ikke altid se hele videoen og lign. (Og farverne er lidt voldsomme ;)). Men kan godt lide opsætningen, bedre end almindeligt DTU Learn.”

Future work - target spring 24

- Create a backend to enable individual progress tracking
- Rework automated exams and couple with student engagement
- Expand to more courses: 1st round with JSON input from teachers
- Expand to more courses: 2nd round with teacher frontend

Potential new features

- couple students' efforts on quizzes (and other tasks) with amount of exam questions => less formative assessments and more fully automated individualisation
- add transcript of YouTube videos to page (makes the videos searchable) and available in any language (use API to YouTube and API to google translate)
- collapse content based on students to-do-list
- auto-translate all content
- add search to course page: search in videos (via transcripts), quizzes, chats, documents, ...

Sources...

... of slides:

https://gitlab.gbar.dtu.dk/ELE_group/teaching/teaching_adventures.git

... of web front end (version 2):

<https://lab.compute.dtu.dk/knott/knottcoursesweb>

... of web front end (version 1):

<https://gitlab.gbar.dtu.dk/knott/AKNcoursesWeb.git>

(login with your DTU credentials as LDAP user.)