

## Teaching Portfolio

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## Formal pedagogical education

Currently part of the Lecturer Training Program at SDU

Course on "Interactive lecturing" (1/2) ECTS (SDU, 2019)

PhD Supervision – Regulation, Recruitment and Expectations (SDU, 2018)

## Teaching and supervision

### **BAFY501: Bachelor Project in Physics, 15 ECTS**

& Peter Jensen Husen

01/02/2019 → 30/06/2019

### **BMB834: Proteinstruktur, -dynamik og -modellering**

Ole Nørregaard Jensen & Peter Jensen Husen

01/02/2019 → 30/06/2019

### **FY504: Klassisk mekanik**

Francesco Sannino & Peter Jensen Husen

01/09/2009 → 31/01/2010

### **FY521: Indledende kvantemekanik**

& Peter Jensen Husen

01/02/2010 → 30/06/2010

### **FY544: Kvantemekanik I**

Peter Jensen Husen

01/09/2019 → 31/01/2020

### **Fysik på science-året (FY501)**

Peter Jensen Husen &

01/09/2006 → 31/01/2007

### **Fysik på science-året (FY502)**

& Peter Jensen Husen

01/02/2006 → 30/06/2006

### **IAFY501: Individuel studieaktivitet i fysik**

& Peter Jensen Husen

01/09/2015 → 31/01/2016

## Medicinsk biofysik

& Peter Jensen Husen  
01/02/2009 → 30/06/2009

## Methods, materials and tools

I have experience with teaching in traditional lecture format, either by use of the blackboard, PowerPoint or a combination, depending on the material, as well teaching based on mathematical exercises, either presented by the students in plenum or in the form of group work. I have also used project work as part of teaching, which has largely been based on computational physics, including simulations on the supercomputer using the software suite VIKING (viking-suite.com) for simulations of biomolecules etc.

## Reflection

I consider it very important for successful learning that the student work actively with the material. This can be achieved in various ways:

- The teacher involves the students actively in a discussion during a lecture (especially for smaller groups)
- (Mathematical) exercises: May seem old fashioned, but depending on the material, it may be quite crucial for internalizing methods and concepts before moving on to the next part.
- Project work: This element has a great potential for learning, as the student will actively search for the material and methods needed to solve a concrete problem. It should be noted, though, that project work can also be quite time consuming, so it needs to be balanced with other elements.

I generally avoid speaking in a monologue during an entire double lecture, since it is clearly too long to maintain concentration as a passive receiver of information. If possible (depending e.g. on the group size), I split classes between lecture and exercises or project work. If double lectures are unavoidable, I will attempt to break the monologue through small reflection exercises or other activities during the lecture.

Involving your own research in teaching can be beneficial in several ways:

- Examples from "real research" can help to motivate the teaching (what can this be used for?), and it provides the teacher with an opportunity to add their own touch to the material.
- Hands-on experience with research methods can be an efficient tool to boost learning.
- If some students get actively involved in the work of a research group, it can contribute to maturing them as future researchers (if they strive for such a career), and as a bonus, it can contribute to further the teacher's own research projects.

The relevance of the above points depend on the context: For teaching elementary courses in the first study years, I sometimes superficially mention examples from current research, but I don't allow it to disturb the teaching of fundamental concepts. For this purpose, classical experiments are typically more relevant to study. When teaching more senior students, there is typically better room for critical discussion of modern methods and current research. Here, I typically use my own and my colleagues' research projects as examples in teaching, and project work as part of teaching will often use some of the same methods.