

Undervisningsportfolio

1. Undervisnings-CV: Oversigt over undervisnings- og vejledningsopgaver med angivelse af fagområder, omfang, undervisningsniveau (bachelor, kandidat, efter-/videreuddannelse, ph.d.). Type af undervisningsform angives, f.eks. forelæsning, holdundervisning, øvelse, vejledning, eksamination, censur, fjernundervisning, internetbaseret undervisning og evaluering af undervisning. Undervisningssprog angives.

Lecturer of the following courses:

B.Sc. course (5th semester) for all M&P students + Energy students + Indoor Climate students (1st semester M.Sc.): Numerical Methods in Aalborg. The course is given together with Tom Condra (he gives the first 8 lectures – I give the last 8). Typically, there are 110-125 students following the course in Aalborg. It is evaluated with an individual oral examination. The text book “Notes and Exercises for Numerical Methods” by Erik Lund and Tom Condra, 282 pages, is updated every year. Rather big updates of the notes have been done in 2017-2020, as the previous courses on mathematics no longer use the “Advanced Engineering Mathematics” by Kreyszig, which we previously used as reference for some of the lectures.

The M.Sc. course “Finite Element Methods” is given together with Esben Lindgaard. I have developed the course, and since 2010 Esben Lindgaard has taught the second part of the course on nonlinear methods. The first part has focus on linear problems, and this part of the course is followed by all 1st semester students with mechanical and manufacturing engineering (DMS1, EMSD1, VT1). The slides for the course have an extent of 398 slides. It is evaluated with an individual oral examination. There are typically 40-65 participants in the course.

The M.Sc. course “Mechanics of Composite Materials and Structures” for DMS2. I teach more than half of the course (282 slides is part of the course material). Johnny Jakobsen and Jørgen Kepler are the two other lecturers of the course. There are typically 15-25 students following the course, and quite often there are also participants from industry. It is evaluated with an individual oral examination.

The M.Sc. course “Engineering Optimisation – Concepts, Methods and Applications” is followed by all students with mechanical and manufacturing engineering (DMS2, EMSD2, VT2) on the 2nd semester. I teach the first 4 lectures and the last 2. The first part of the course contains 8 lectures and is given together with Henrik Clemmensen Pedersen. The first part of the course is also followed by all students within energy engineering, such that the number of participants for the first part of the course is around 120-130. Benny Endelt and Michael Skipper Andersen are also giving 2 lectures in the second part of the course. It is evaluated with a written examination (2020-2021: Moodle Quiz exam).

Every second year we offer a Ph.D. course on analysis and optimization of laminated composites. The first version of the course was given in 2004. In 2016 I made a major revision of the course that was given the new name “Analysis and Gradient Based Optimization of Laminated Composite Structures”. It is a 5 ECTS course with 5 days of lectures and exercises, and half of the course was completely remade in my revision in 2016. This revision was necessary because Lars Overgaard was on leave and Ole Thybo Thomsen was in the process of leaving AAU. In the current version I teach 4 days of the course, Johnny Jakobsen ½ day, and Esben Lindgaard ½ day. My course material for the Ph.D. course exceeds 600 slides. Typical number of participants is 25 including industrial participants.

I am normally supervising 1-3 M.Sc. projects and the same number of student projects on the 3rd semester for students within Design of Mechanical Systems. Due to my many courses and many Ph.D. students in recent years, I have had a relatively low number of student projects. In total I have been advisor of 43 M.Sc. thesis at AAU.

In total, I have been advisor for 27 Ph.D. students (24 completed) and three post doctoral fellows. I’m currently (2021) advisor for 2 Ph.D. students.

I am regularly examiner of M.Sc. and B.Sc. courses and theses at DTU and AU (typically 7-10 times per year).

I have been member of 9 Ph.D. evaluation committees at AAU, 11 at Technical University of Denmark, 1 at Aarhus University, 1 at Linköping University, 1 at KTH Royal Institute of Technology, 1 at Chalmers University of Technology, 1 at Technical University of Munich, 1 at Tampere University of Technology, 1 at Delft University of Technology, 1 at Nanyang Technological University (NTU), Singapore, and 1 at University of Bristol.

2. Administration og ledelse af uddannelse: Erfaring med uddannelsesledelse og –koordinering. Oversigt over studieadministrative opgaver, eksempelvis medlem af studienævn, studieleder, semesterkoordinator, fagkoordinator, akkreditering m.v. Erfaringer med planlægning af uddannelsesafvikling. Erfaring med udvikling af uddannelser. Deltagelse i udvalg, kommissioner m.m. vedr. uddannelse.

I'm coordinator of the 2nd semester of the M.Sc. study "Design of Mechanical Systems". I was member of the Industry and Global Business Development (M) Study Board, AAU (1999-2000 and 2002-2012). I was also coordinator of all semesters of the M.Sc. "Design of Mechanical Systems", Industry and Global Business Development (M) Study Board, AAU (2002-2011).

I am course responsible for the courses mentioned above, but we don't allocate resources for course coordination in the courses (agreed among the lecturers of the courses).

3. Formel pædagogisk uddannelse: Oversigt over gennemførte universitetspædagogiske kursusforløb, PBL-kurser, workshops, udviklingsprojekter, kollegial supervision o.l. Udtalelse fra universitetspædagogikum. Deltagelse i konferencer om pædagogik og didaktik. Dokumentation i form af kursusbeviser, udtalelser m.m. vedlægges.

I have completed the AAU pedagogical course for assistant professors in the period 1995-1997. I have been collegial supervisor of two assistant professors as part of their pedagogical course.

4. Andre kvalifikationer: Bidrag til konferencer, debatindlæg, videnskabelige artikler om pædagogiske emner m.v. Kollegiasupervision, redaktørarbejde, erfaring som mentor og anden kompetenceudvikling.

Previously I was very active as lecturer at "Dansk Naturvidenskabsfestival" 2002, 2004, 2006, 2007, and 2009 (totally 23 lectures at Danish High Schools). However, it has not been possible to find time for such activities in recent years.

5. Pædagogisk udvikling og forskning: Udvikling af nye kurser, undervisningsmateriale, undervisnings- og eksamensformer eller andet udviklingsarbejde. Didaktisk og pædagogisk forskning. Samarbejde med eksterne samarbejdspartnere.

This part was covered under the description of courses.

6. Udtalelser om undervisningskompetencer fra foresatte og kolleger. Undervisningsevalueringer og eventuelle udmærkelser for undervisningsvaretagelse.

"Teacher of the Year" (Årets Underviser) at AAU (receiver of Det Obelske Familiefonds Uddannelsespris 2012).

"Teacher of the Year" at the Faculty of Engineering and Science, AAU, in 2011.

"Teacher of the Year" at the Faculty of Engineering, AAU, in 2021.

"Teacher of the Year" at the Industry and Global Business Development (M) Study Board, AAU, in 1998, 2003, 2006, 2011 and 2012.

"Teacher of the Year" at the Mechanics and Physics Study Board, AAU, in 2020.

Besides that, I have been nominated as "Teacher of the Year" many other times at the M and N study boards (also in the last couple of years).

7. Evt. personlige refleksioner og initiativer: Personlige overvejelser knyttet til undervisning og vejledning, ønsker til og planer for pædagogisk videreudvikling, planer for opfølgning på undervisningsevalueringer m.v. Refleksioner over eget pædagogiske arbejde, dets målsætninger, metoder og gennemførelse. I refleksionen analyseres og motiveres dine pædagogiske aktiviteter i forhold til din pædagogiske forståelse og de studerendes læring. Tanker om undervisningsformen på Aalborg Universitet, der har et stort indhold af gruppeorganiseret projektarbejde og problembaseret læring (PBL).

In general I receive very positive feedback for my courses, so at the moment I have no plans for major changes of the courses.

8. Andet.

Nothing to mention.