

Undervisningsportfolio

1. Undervisnings-CV: Oversigt over undervisnings- og vejledningsopgaver med angivelse af fagområder, omfang, niveau (BA, kandidat, EVU, Ph.d) samt evt. censoropgaver.

I have been teaching since I started doing my PhD in 2009. Below is a list of completed and ongoing (marked with *italic*) teaching activities. Due to maternity leaves, I did not have any teaching activities in the Fall 2013 and in the Fall 2015 and Spring 2016.

Lecturer in the course "Partielle Differentialligninger, Sandsynlighedsregning og Statistik" (Partial Differential Equation, Probability Theory and Statistics), 4th semester of the BSc program in Civil Engineering, Aalborg University: 9 lectures Spring 2013, 9 lectures Spring 2014, 18 lectures Spring 2015, 18 lectures Spring 2017, 18 lectures Spring 2018, 18 lectures Spring 2019 (in Danish). The course consists of lectures, exercise sessions, self-study sessions, a mini project, and was evaluated in an oral exam based on the mini projects. I have in 2015, 2017 and 2018 given the entire course, and will also do this in 2019, which includes development of exercises for the mini project. In 2013 and 2014 I did half the course (concerning probability theory and statistics).

Lecturer in the PhD course "JCSS Advanced Course on Systems Risk Modelling and Analysis in Engineering Decision Making", Aalborg University: 3 lectures Spring 2018. I have given and developed lectures and exercises on Bayesian networks and Integrity Management of Wind Turbine Facilities.

Lecturer at PhD course: "Reliability and risk analysis of wind turbines": 2 lectures Fall 2014, 1.5 lecture Spring 2017 (in English). I have given lectures on 'Risk-analysis', and on 'Risk-based operation and maintenance', and in the use of various programs for statistical analysis and reliability analysis.

Lecturer in the course "Videnskabsteori og metoder indenfor Byggeri og anlæg" (Theory of Science and Modelling within Civil Engineering), 1st semester of the BSc program in Civil Engineering, Aalborg University: 3 lectures Fall 2014, 3 lectures Fall 2016, 3 lectures Fall 2017, 3 lectures Fall 2018 (in Danish). I have given lectures concerning assessment of loads (self-weight, imposed loads, snow loads, and wind loads), load combinations, and the method of partial safety factors.

Lecturer in the course "Renewable Energy Structures: Wind Turbines and Wave Energy Devices", 3rd semester of the MSc program in Civil Engineering, Aalborg University: 1 lecture Fall 2012, 1 lecture Fall 2014, 1 lecture Fall 2016, 3 lectures Fall 2017, 3 lectures Fall 2018 (in English). I have given and developed lectures on 'Risk-based operation and maintenance' and assessment of aerodynamic loads, and have developed exercises on the topics.

Lecturer in the course "Maintenance Management", 2th semester of the Cand.tech. program in Risk and Safety Management, Aalborg University Esbjerg: 6 lectures Autumn 2018. (in English). I have given and developed lectures on Introduction to maintenance, Component reliability modelling, Maintenance optimization, Reliability- and risk-based inspection, Offshore accessibility, Application for wind energy, and have developed exercises on the topics.

Lecturer in the course "Risk and Reliability", 2nd semester of the MSc program in Civil Engineering, Aalborg University: 0.5 lectures Spring 2010, 2 lectures Spring 2013 (in English). I have given lectures in Classical Reliability and in the First Order Reliability Method, and in the use of programs for reliability analysis.

Lecturer at NORCOWE PhD Summer School on the topic "Operation and Maintenance for Offshore Wind Turbines": 1 lecture Fall 2012 (in English). I have given a lecture on 'Risk-based operation and maintenance'.

Lecturer in the course "Statistik og sandsynlighedsregning" (Statistics and Probability Theory), 3rd semester of the BSc program in Civil Engineering, Aalborg University: 5 lectures Fall 2009, 5 lectures Fall 2010 (in Danish). The course consisted of lectures followed by exercise sessions, and was evaluated using a written exam. I gave half the course (concerning probability theory) and made half the exam exercises.

Lecturer in the course "Differentialligninger og numeriske metoder" (Differential Equations and Numerical Methods), 4th semester of the BSc program in Civil Engineering, Aalborg University: 5 lectures Spring 2010 (in Danish). The course consisted of lectures followed by exercise sessions, and was evaluated using a written exam. I gave half the course (concerning partial differential equations) and made half the exam exercises.

Teaching assistant at "Concrete Workshop", 1st semester of the BSc program in Civil Engineering: Fall 2009, Fall 2010, Fall 2011.

I have been supervising since I started on the 4th semester of the MSc program in the Spring 2009. Most supervision activities have been on the first study year (1st and 2nd semester of the BSc program), where the students are first introduced to Problem-based Learning (PBL). Below is a list of completed and ongoing supervision activities.

Main supervisor for Hariesh Arulanantham on his Long Master thesis on "Value of information of structural health

monitoring of offshore wind turbine blades” on the MSc program in Civil Engineering, Aalborg University: Autumn 2018-Spring 2019.

Co-supervisor for Gedinimas Bulotovas on his Long Master thesis on “Fatigue design optimisation of Mono Bucket foundations” on the MSc program in Civil Engineering, Aalborg University: Autumn 2018-Spring 2019.

Co-supervisor for Meick Jirathanaphan Jørgensen and Simon Bak on their Master thesis on “Assessment of the structural safety for existing structures” on the MSc program in Civil Engineering, Aalborg University: Spring 2018.

Co-supervisor for Francisco Manuel Lorente Morales on his Master thesis on “Reliability-based Classification of the Load Carrying Capacity of Existing Bridges” on the MSc program in Civil Engineering, Aalborg University: Spring 2017

Co-supervisor for Meick Jirathanaphan Jørgensen on his 3rd semester project on “Traffic Load Models and Partial Safety Factors for Bridge Structures” on the MSc program in Civil Engineering, Aalborg University: Autumn 2017

Supervisor on semester project on the 2th semester of the Cand.tech. program in Risk and Safety Management, Aalborg University Esbjerg, 1 group Autumn 2018.

Supervisor on P2 project on the 2nd semester of the BSc program in Civil Engineering, Aalborg University: 2 groups Spring 2013, 2 groups Spring 2017, 2 groups Spring 2018.

Supervisor on P0 project on the 1st semester of the BSc program in Civil Engineering, Aalborg University: 2 groups Fall 2011, 2 groups Fall 2012, 2 groups Fall 2014, 3 groups Fall 2016.

Supervisor on P1 project on the 1st semester of the BSc program in Civil Engineering, Aalborg University: 2 groups Fall 2011, 2 groups Fall 2012, 2 groups Fall 2014, 3 groups Fall 2017.

Co-supervisor for two students on their 3rd semester project on “Design on earthquakes in Denmark” on the MSc program in Civil Engineering, Aalborg University: Fall 2010.

Technical supervisor on project on “Tectonic Design: Architectural Form and Structure”, 1st semester of the MSc program in Architectural Design, Aalborg University: 3 groups Fall 2009.

Technical supervisor on project on “Integrated design of Buildings”, 6th semester of the BSc program in Architectural Design, Aalborg University: 3 groups Spring 2009.

Examiner on project on “Design and foundation of a 3D Steel Structure”, 5th semester of the BSc program in Civil Engineering, Aalborg University: 3 groups January 2017, 2 groups January 2018, 3 groups January 2019.

Examiner on “Academic Internship”, 3th semester of the MSc program in Civil Engineering, Aalborg University, January 2017.

Examiner on project on 3th semester of the MSc program in Civil Engineering, Aalborg University, January 2015.

Examiner on course on “Wind loads on structures”, 3th semester of the MSc program in Civil Engineering, Aalborg University, Marts 2015.

Examiner on course on “Concrete technology”, 5th semester of the BSc program in Civil Engineering, Aalborg University (Aalborg and Esbjerg), January 2019.

2. Studieadministration: Oversigt over studieadministrative opgaver, eksempelvis medlem af studienævn, studieleder, semesterkoordinator, fagkoordinator, akkreditering m.v.

Course coordinator for the course “Maintenance Management”, 2th semester of the Cand.tech. program in Risk and Safety Management, Aalborg University Esbjerg in the Fall 2018.

Course coordinator for the course “Partial Differential Equation, Probability Theory and Statistics”, 4th semester of the BSc program in Civil Engineering, Aalborg University in the Spring 2015, 2017, 2018, 2019.

Course coordinator for half the course “Renewable Energy Structures: Wind Turbines and Wave Energy Devices”, 3rd semester of the MSc program in Civil Engineering, Aalborg University in the Fall 2017.

Participated in the revision of the study curriculum for the BSc and MSc program within Civil Engineering.

3. Universitetspædagogiske kvalifikationsforløb: Oversigt over gennemførte universitetspædagogiske kursusforløb, PBL-kurser, workshops, udviklingsprojekter,

kollegial supervision o.l.

In 2014, I completed the University Teacher Education for Assistant Professors (Adjunktpædagogikum) at Aalborg University. Below is the description of pedagogic qualifications, as stated in the Pedagogic Evaluation Statement:

Description of pedagogic qualifications

JSN's teaching is characterised by thorough consideration and forethought. In the teaching, the objectives are clearly formulated both for the overall term of the course and for the individual classes. JSN's lectures are well constructed and she is able to reach the students by presenting complicated topics in various ways: informal using everyday examples, formal using technical language, and through numerical examples.

The project supervision is similarly characterised by JSN's insight into the subject matter and ability to involve the students in establishing clear objectives, and she appears inspiring in the project supervision by constructively formulating questions and helping the students with the formulation of various solutions to the problems they present. She is well prepared for the supervision and allows ample time for supervision.

Summarized Evaluation

JSN's pedagogic strengths lie in the well considered planning and structuring of the subject matter materials. During the course, she has worked very deliberately with shifting between individual teaching approaches and in addition, she has developed the skill of pedagogic theoretical reflection over the teaching, as well as the ability to establish realistic objectives for limited teaching experimentation. JSN has completed the course at very satisfactory level.

4. Anden form for kvalificering: Konferencedeltagelse, debatindlæg, oplæg m.v. i relation til uddannelse, "Undervisnings dag", o.l.

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5. Undervisningsudviklingsforløb og undervisningsmateriale: Oversigt over medvirken til udvikling af nye moduler, undervisningsmateriale, uddannelser, e-learning, samarbejde med eksterne samarbejdspartnere o.l.

Main responsible for development the outline and and half the lectures for the course "Maintenance Management", 2th semester of the Cand.tech. program in Risk and Safety Management, Aalborg University Esbjerg in the Fall 2018.

6. Nominering til og/eller modtagelse af undervisningspriser.

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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.

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8. Andet.

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