

## Teaching portfolio

### 1. Teaching CV: A list of any lecturing and supervision tasks, including specification of academic fields, scope, level (bachelor, master, continuing education, PhD) as well as any external examiner tasks.

#### 2014:

Assistant teacher in "Thermodynamics, Heat Transfer and Fluid Dynamics" (EN3, 3rd semester) 5 ECTS

Assistant teacher in "Fluid Mechanics" on 7th semester (BAKK7, TEPE1, INTRO-TEPE, INTRO-HYTEC, 7th semester) 5 ECTS

Supervisor on "Lift coefficient for a rotating flat plate" by Nicklas Overgaard Andersen, Nikolaj Kortbek Andersen (TEPE1, 7th semester) 15 ECTS

#### 2015:

Assistant teacher in "Thermodynamics, Heat Transfer and Fluid Dynamics" (EN3, 3rd semester) 5 ECTS

Assistant teacher in "Numerical methods" (MP5, IE7, EE5, MCE5, DS5, TP5, 5th and 7th semester) 5 ECTS

Assistant teacher in "Fluid Mechanics" (BAKK7, TEPE1, INTRO-TEPE, INTRO-HYTEC, 7th semester) 5 ECTS

Supervisor on "Design of Impellers for Centrifugal Pumps" by Kristine Askelund, Christian Bjørn, Lea Bandholtz Jørgensen (TE6, 6th semester) 15 ECTS

Supervisor on "Modelling, Design and Test of a Centrifugal Pump Impeller" by Mathias Poulsen, Kristian Kristensen, Mads Boller Frederiksen, Michael Skyrum (TE6, 6. semester) 15 ECTS

Supervisor on "Development of a modelling process for a UV light based ballast water treatment unit" by Gerrit Nils Werner (TEPE3, 9th semester) 30 ECTS

Supervisor on "Modelling of an Electrochlorination Cell for Water Disinfection" by Lau Hedensted, Rodica Stroe, Nikolaj Kortbek Andersen (TEPE3-4, 9th-10th semester) 60 ECTS

Examiner on "Boosting af fjernvarme" by Lasse Nørby Nielsen, Maria Stenseth, Nikolaj Grønkær, Nicolai Sørensen, Frederik Ødum Nielsen, Steffen Jakobsen, Magnus Kirkengaard Thorsen (EN1, 1. semester) 15 ECTS

#### 2016:

Assistant teacher in "Numerical methods" (MP5, IE7, TE5, EE5, MCE5, DS5, TP5, 5. og 7. semester) 5 ECTS

Assistant teacher in "Fluid mechanics" (BAKK7, TEPE1, INTRO-TEPE, INTRO-HYTEC, 7. semester) 5 ECTS

Supervisor on "Modelling of an Electrochlorination Cell for Water Disinfection" by Lau Hedensted, Rodica Stroe, Nikolaj Kortbek Andersen (TEPE3-4, 9th-10th semester) 60 ECTS

Supervisor on "Aerodynamic Analysis and Design of a Car for the Shell Eco Marathon" by Daniel Fiuza Dosil (TEPE4, 10th semester) 30 ECTS

#### 2017:

Supervisor on "Vortices Analysis and Winglets" by Rasheed Fallah, Line Justesen Pløger, Morten Krantz, Nicolai Hede Kirkedal, Troels Beck Landbo (TEPE1, 7th semester) 15 ECTS

Supervisor on "Non-Newtonian Heat Transfer and Pressure Drop in Helicoid Heat Exchangers for Biogas Plant" by Troels Beck Landbo (TEPE3, 9th semester) 30 ECTS

#### 2018:

Assistant teacher in "Fluid Mechanics" (BAKK7, TEPE1, INTRO-TEPE, INTRO-HYTEC, 7th semester) 5 ECTS

Supervisor on "Development and Application of Robust Design Optimization Methods for Turbomachinery" by Michel Noaparast (TEPE4, 10th semester) 30 ECTS

Supervisor on "Numerical Investigation of Flow Structures and Their Impact on Heat Transfer Performance in a Staggered Arrangement of Rectangular Winglet Pair Vortex Generators in a Fully Developed Channel Flow" by Allan Bjerg and Kristian Fodgaard Christoffersen (TEPE4, 10th semester) 30 ECTS

Supervisor on "Optimizing Temperature Control in a Bio-Oil Hydrotreating Reactor using Numerical Modeling" by Nicolas

Campion, Federico Censi, Rasmus Simonsen, Dueholm, Esben Ravn, Kasper Dalgaard Vestdam (TEPE2, 8th semester) 30 ECTS

Supervisor on "Investigation of guide vane geometry in duct expansion through CFD analysis for inertially dominated flows" by Harald Heron, Martin Rønno Andersen and Martin Slots Pedersen (TEPE1, 7th semester) 15 ECTS

Supervisor on "Numerical Study of Heat Transfer in a Row of Cylinders by 2D Large Eddy Simulation" by A. Thorstensen, A. Krogh, B. Dueholm, S. Højte and S. Thomasen (TEPE1, 7th semester) 15 ECTS

Supervisor on "Parametric Study of a Staggered Pin Fin Arrangement for Danfoss ShowerPower" by Andreas Agesen (TEPE3, 9th semester) 30 ECTS

## **2019:**

Teacher in "Flow Machines" (TE6) 5 ECTS

Teacher in "Heat Transfer" (TE5) 5 ECTS

Assistant teacher in "Fluid Mechanics" (BAKK7, TEPE1, INTRO-TEPE, INTRO-HYTEC, 7th semester) 5 ECTS

Supervisor on "Vertikalakslade Vindmøller i Minigrids" by Mark P. Bertelsen, Marcus P. Heidelberg, Mikkel Jørgensen, Kristoffer S. Kure, Rasmus D. Sørensen and Rune L. Sørensen (EN2, 2nd semester) 15 ECTS

Supervisor on "Development of a mathematical model describing a vertical axis wind turbine" by Annette Goth Kamstrup, Henrik Hove Hornum, Josep Torres Riera and Stefan Holebæk (EN6, 6th semester) 15 ECTS

Supervisor on "Particle accumulation in square duct cavity with laminar flow" by A. O. Agesen, L. D. D. Blæsbjerg and A. R. Ehlers (TEPE4, 10th semester) 30 ECTS

Supervisor on "Investigation of Scale Effects in Scaled Pump Models" by Gudjon Thor Olafsson and Martin Rubæk (TEPE4, 10th semester) 30 ECTS

Supervisor on "Numerical optimisation of vortex generators in fin and tube heat exchangers" by Florian Marcus Fries and Palle Lang Nielsen (PECT4-F19, 10th semester) 30 ECTS

Supervisor on "CFD in Inline Mixer" by Tomasz Marcin and Hetune Vipin (TEPE3, 9th semester) 20 ECTS

Supervisor on "Analysis of the Impact of Freestream Turbulence Intensity upon the Wake of a Circular Cylinder in Air Cross Flow using Large Eddy Simulations" by Henrik H. Hornum, Marcus P. Sandland, Lars Kæhler, Christian K. Rosenvinge and Tobias Lynggaard (TEPE1, 7th semester) 15 ECTS

Supervisor on "Natural Convection Analysis Around Elliptical Shapes with Sinusoidal Heat Flux Using CFD" by Annette G. Kamstrup, Lasse Olsen, Anna M. Anneberg, Frederik M. Elimar (TEPE1, 7th semester) 15 ECTS

Supervisor on "Fully-developed convective heat transfer and pressure drop in a square duct with baffle inserts using CFD analysis" by Lasse U. Christensen, Nisanthan Thanabalasingham (TEPE1, 7th semester) 15 ECTS

## **2020:**

Teacher in Heat Transfer (TE5) 5 ECTS

Teacher in Flow Machines (TE6) 5 ECTS

Assistant teacher in "Numerical methods" (MP5, IE7, TE5, EE5, MCE5, DS5, TP5, 5. og 7. semester) 5 ECTS

Supervisor on "Development of Impeller Design Procedure to Increase the Range of Application for the Grundfos Pump NK 32-125" by Frede M. Lindquist, Kristoffer Holst, Maria M. Paulsen and Sebastian B. Petersen (TE6, 6th semester) 15 ECTS

Supervisor on "Optimisation of Initiation Time for Defrosting a Heat Pump" by Anna M. Annaberg, Annette G. Kamstrup, Bruno F. B. Campos, Frederik M. Elimar and Lasse Olsen (TEPE2, 8th semester) 15 ECTS

Supervisor on "Numerical investigation of the wavy channel geometry and its effect on heat transfer performance in natural convective flow" by Andreas S. Thorstensen and Bjørn C. Dueholm (TEPE4, 10th semester) 30 ECTS

**2. Study administration: A list of any study administration tasks, e.g. study board membership, head of studies or semester or course coordinator, accreditation, etc.**

**2018:** Responsible for developing and teaching two workshop on the open-source CFD software OpenFOAM

**2019:** Responsible for developing and teaching three workshops on the open-source CFD software OpenFOAM

**2020:** Responsible for developing and teaching OpenFOAM Days 2020, which is a two-day event for 7 and 9 semester students with numerous presentations from both industry and PhD students

**3. University pedagogy qualifications: A list of any completed courses in university pedagogy, PBL courses, workshops, academic development projects, collegial guidance and supervision, etc.**

**2015:**

Basic Course in University Pedagogy

**2017:**

University Teaching Day

**2019:**

University Teaching Day

Certification Programme in English for AAU University Instructors

Pedagogy course on "Teaching at a PBL University"Pedagogy course on "Planning and Implementation of Group Instruction"

Pedagogy course on "The Use of IT and Media for Learning and Teaching"

Pedagogy course on "The PBL Group - Collaboration, Process and Supervision"

Pedagogy course on "Planning, Development and Quality Assurance of Study Programmes"

Pedagogy course on "PBL in Engineering Science"

Pedagogy course on "Copyright and Plagiarism"

Pedagogy course on "The Danish Code of Research Integrity"

Pedagogy course on "Digital Scholarship in University Pedagogy"

**4. Other qualifications: Conference attendance, editorials, presentations, etc. relating to education, 'University Teaching Day', etc.**

**5. Teaching activity development and teaching materials: A list of any contributions to the development of new modules, teaching materials, study programmes, e-learning, collaboration with external business partners, etc.**

Development of new teaching material for 2 lectures in the course "Flow Machines"

Development of new teaching material for 2 lectures in the course "Heat Transfer"

**6. Teaching awards you may have received or been nominated for.**

Nominated as "Teacher of the year 2015"

2nd place "Teacher of the year 2020" and 1st place for the autumn semester 2019

**7. Personal reflections and initiatives: Here you may state any personal deliberations as regards teaching and supervision, any wishes and plans for further pedagogic development, plans for following up on feedback/evaluations from students, etc.**

**8. Any other information or comments.**