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.

Teaching (Courses):
Experimental Fluid Mechanics(PE), FACE7, fall 2006, 1/5 lectures, 1 ECTS
Aerosols: Fundamentals with combustionaerosols (Free study activity), FACE9, 1/1 lecture, Fall 2006
Multiphase Flows (SE), FACE8,spring 2007, 5/5 lectures, 1 ECTS
Turbulence and mixing (SE),FACE8, spring 2007, 2/5 lectures, 1 ECTS
Experimental Fluid Mechanics(PE), FACE7, fall 2007, 2/5 lectures, 1 ECTS
Numerical Fluid Mechanics (PE),FACE7, fall 2007, 5/10 lectures, 2 ECTS
Advanced CFD techniques (PE),TEPE3, fall 2008, 1/5 lectures, 1 ECTS
Two-Phase Flow (PE), TEPE3, fall2008, 5/5 lectures, 1 ECTS
Numerical Fluid Mechanics (PE),TEE1, fall 2009, 5/10 lectures, 2 ECTS
Experimental Fluid Mechanics(PE), TEE1, fall 2009, 5/5 lectures, 1 ECTS
Multiphase Flows (PE), TEPE2,spring 2010, 5/5 lectures, 1 ECTS
Transport Processes, K7+B7, fall2010, 13/13 lectures, 3 ECTS
Energiteknisk Grundfag, fall 2010, 9/15 lectures, 5 ECTS
Computersimulering af Strømningsprocesser, spring 2011, 9/9 lectures, 2 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2011, 9/18 lectures, 5 ECTS
Energiteknisk Grundfag, fall2011, 8/13 lectures, 5 ECTS
Fluid Mechanics, fall 2011, 15/15lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2011, 15/15 lectures, 5 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2012, 9/18 lectures, 5 ECTS
Energiteknisk Grundfag, fall2012, 9/14 lectures, 5 ECTS
Fluid Mechanics, fall 2012, 15/15lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2012, 11/16 lectures, 5 ECTS
Mikrodatamater og Varmetransmission, fall 2012, 7/14 lectures, 5 ects
Grundlæggende Mekanik og Termodynamik, spring 2013, 9/18 lectures, 5 ECTS
MAS209 Numerisk strømningsberegning – CFD (Universitetet i Agder), spring2013 5 ECTS
Energiteknisk Grundfag, fall 2013,9/14 lectures, 5 ECTS
Fluid Mechanics, fall 2013, 18/18lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2013, 11/16 lectures, 5 ECTS
Mikrodatamater og Varmetransmission, fall 2013, 2/14 lectures, 5 ects
Grundlæggende Mekanik og Termodynamik, spring 2014, 9/18 lectures, 5 ECTS
Energiteknologi (Syddansk Universitet) spring 2014, 3/12 lectures, 7.5 ECTS
Fluid Mechanics, fall 2014, 20/20lectures, 5 ECTS
Energiteknisk Grundfag, fall 2014, 7/13 lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2014, 11/16 lectures, 5 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2015, 9/18 lectures, 5 ECTS
Fluid Mechanics, fall 2015, 20/20lectures, 5 ECTS
Energisystemers gr. Opbygning og fysik, fall 2015, 4/13lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2015, 11/16 lectures, 5 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2016, 9/18 lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2016, 17/17 lectures, 5 ECTS
Fluid Mechanics, fall 2016, 20/20lectures, 5 ECTS
Strømningsmaskiner, Spring 2017, 6/12 lectures, 5 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2017, 9/18 lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2017, 17/17 lectures, 5 ECTS
Fluid Mechanics, fall 2017, 20/20lectures, 5 ECTS
CFD and Multiphase flow, fall 2017,11/12 lectures, 5 ECTS
Strømningsmaskiner, Spring 2018, 5/12 lectures, 5 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2018, 9/18 lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2018, 17/17 lectures, 5 ECTS
Fluid Mechanics, fall 2018, 20/20lectures, 5 ECTS
CFD and Multiphase flow, fall 2018,11/12 lectures, 5 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2019, 9/18 lectures, 5 ECTS
Varmetransmission og Strømningsmekanik, fall 2019, 17/17 lectures, 5 ECTS
Fluid Mechanics, fall 2019, 20/20lectures, 5 ECTS
CFD and Multiphase flow, fall 2019,6/12 lectures, 5 ECTS
Grundlæggende Mekanik og Termodynamik, spring 2020, 14/14 lectures, 5 ECTS

Teaching (Supervisor):
Analyse af hvirvelafløsning,FACE7, fall 2006
Reforming of methane, FACE8,spring 2007
Modeling of a controlledatmosphere brazing process, FACE10 (master thesis), spring 2007
Investigation of blended wingletseffect on wing performance, TEE1, fall 2007
Temperature and gas compositioncharacterization of a biomass boiler, FACE9, fall 2007
Numerical and experimentalinvestigation of a NACA profile, TEE1, fall 2008
Numerical investigation ofgas-solid flow in a calciner, TEPE4 (master thesis), spring 2009
Numerical and experimentalinvestigation of a race car diffuser, TEE1, fall 2009
Simpel model og dimensionering af køler til G4, TE5, fall 2009
Energigenindvinding i SWRO-anlæg, BM9, fall 2010
Havvindmøller – lagring af fremtidens fluktuerende elproduktion, EN1, fall 2010
Lagring af CO2 i Nordsøen, EN1, fall 2010
Modellering og test af Varmepumpe, EN3, fall 2011
Modellering af Solvarmeanlæg til fjernvarme, EN3, fall 2011
CCS på Esbjergværket, EN1, fall, 2011
Implementering af El-biler i DK, EN1, fall, 2011
Det energineutrale hus, EN1, fall, 2011
Sterling Engine, EN2, spring, 2012
Hydropower, EN2, spring, 2012
Energy storage, SDU (M.Sc. thesis), spring, 2012
Sodblæser, EN5, fall, 2012
Springvand, EN3, fall, 2012
Solfanger, EN2, spring, 2013
Afgasser til fjernvarme, EN6, spring, 2013
Køling af vacciner i Afrika, EN1, fall 2013
Solfanger, EN1, fall 2013
Fjernvarme, EN3, fall 2013
Aircondition, EN3, fall 2013
Termisk modellering af rørsystem, EN5, fall 2013
Karakterisering af testkedel, EN5, fall 2013
CFD analysis of coriolis flowmeter, PECT7, fall 2013
Svinghjul, EN2, spring, 2014
UPS-anlæg, EN2, spring, 2014
Afisning af vindmøller, EN2, spring, 2014
Pumpestand, EN6, spring, 2014
Løber til pumpe, EN6, spring, 2014
Afgasning af fjernvarmevand, EN5, fall, 2014
CFD analysis and LDA measurement ofCoriolis flow meter, PECT7, fall 2014
Atomkraft, EN1, fall 2014
DMFC, EN1, fall 2014
Aircondition, EN1, fall 2014
Foulling in economisers, Diplomathesis, fall 2014
Process optimization of anoffshore oil rig, Diploma thesis, fall 2014
Process layout of a biomass firedboiler for district heating, Internship report, PECT9, fall 2014
Corrosion of thruster on anoffshore oil rig, Internship report, PECT9, fall 2014
Development of in-house tools forsettle-out and blow-out calculations, PECT9, fall 2014
CFDand experimental tests of a Hydro-cyclone, Master Thesis, Spring 2015
Failuremodels for pressure vessels on offshore oil rigs, Master Thesis, Spring 2015
CFDanalysis and measurement of particle size distribution using PDA forSpray-drying, PECT8, Spring 2015
Performance karakterisering af vindhætte, Bachelorthesis, Spring 2015
Hydrolagring, EN2, Spring 2015
UPS-anlæg, EN2, Spring 2015
Solcelle-anlæg1, EN2, Spring 2015
Solcelle-anlæg2, EN2, Spring 2015
Damvarmelager, EN1, fall 2015
Fremtidensenergisystemer, EN1, fall 2015
Varmepumpe til sportskompleks, EN3, fall 2015
Aircondition, EN3, fall 2015
Lynkøling af sodavand1, EN3, fall 2015
Lynkøling af sodavand2, EN3, fall 2015
Køling af røggas fra gasturbine, EN5, fall 2015
Design af varmeveksler med heatpipes, EN5, fall 2015
Testkedel, EN5, fall 2015
Lowtemperature district heating, Diploma thesis, fall 2015

Flowmeteretil opfyldningsstation, Diploma thesis, fall 2015
Kaviterendevæskeringspumpe, Diploma thesis, fall 2015
CFDand test of a valve, PECT7, fall 2015
Modellingof pelletizing process, PECT9, fall 2015
Stirlingmotor, EN2, Spring 2016
UPS-anlæg, EN2, Spring 2016
UPS-anlæg, EN2, Spring 2016
Pumpedesign 1, EN6, Spring 2016
Pumpedesign 2, EN6, Spring 2016
Vindhættedesign, EN6, Spring 2016
Vindmølle aerodynamisk design, EN6, Spring 2016
Hydrocyclone, PECT8, Spring 2016
Udvælgelse og test af flowmålingsudstyr, Diploma thesis, Spring 2016
Modelling of pelletizing process,Master Thesis, Spring 2016
Modelling of Sprout firing,Master Thesis, Spring/Summer 2016
Smart grid ready køleskab med kuldelagring, EN3, fall2016
Testkedel, EN5, fall 2016
Numerisk modellering af luft-luft varmeveksler, EN5, fall2016
Numerisk modellering af radiator til lavtemperaturfjernvarme, EN5, fall, 2016
CFDprogramming of simple flows, PECT7, fall 2016
CFDmodelling and LDA measurement of plane mixing layer, PECT7, fall 2016
CFDmodelling and PIV measurement of plane mixing layer, PECT7, fall 2016
Investigationand modelling of feed pill process, PECT9, fall 2016
WebThinning process (aluminium extrusion), PECT9, fall 2016
Stay at the Shell refinery,Diploma thesis, fall 2016
Modelling of feed pill process, MasterThesis, spring 2017
Modelling of aluminiumextrusion), Master Thesis, spring 2017
Sterling motor, EN2, Spring 2017
UPS-anlæg, EN2, Spring 2017
Pumpedesign 1, EN6, Spring 2017
Pumpedesign 2, EN6, Spring 2017
Stayat the Vestas aircoil, Diploma thesis, fall 2017
Stayat Polytech, Diploma thesis, fall 2017
Stayat Bravida Esbjerg, Diploma thesis, fall 2017
Stayat Semco, Diploma thesis, fall 2017
Stayat Vestfrost, Diploma thesis, fall 2017-Sping 2018(udsat)
Design af varmepumpe til sportskompleks, EN3, fall 2017
Implementationof heat exchanger in Shell refinery flue gas system, EN5, fall 2017
AAU-Vølund test boiler, EN5, fall 2017
CFDmodeling and PIV measurement of compressor valve, PECT7, fall 2017
CFDmodeling and LDA of a simple flow, PECT7, fall 2017
Investigationof the use of Hydrocyclones for refrigeration purposes, PECT9, fall 2017
1DModelling of single-phase waterhammer, PECT9, fall 2017
CFDof heat exchanger design, PECT9, fall 2017
Thermodynamicmodelling of CCS-plant, PECT9, fall 2017
Termisk model af TEG, EN2, Spring 2018
Solcelle/varmepumpe system, EN2, Spring 2018
Design af pumpeløber1, EN6, Spring 2018
Design af pumpeløber2, EN6, Spring 2018
Aerodynamisk design af husstandsmølle, EN6, Spring 2018
CFDof Slug flow using VOF 1, OG8, Spring 2018
CFDof Slug flow using VOF 2, OG8, Spring 2018
Aerodynamicdesign of a racecar using Adjoint method, Master Thesis, spring 2018
Modellingof multiphase- water hammer using MOC and CFD, Master Thesis, spring 2018
Modellingof compressor intake valve using CFD with moving mesh, 6DOF, BC event timingand comparison with lumped model in Matlab, Master Thesis, spring 2018
CFDof wood chip Spout firing with focus on non-spherical particle models, MasterThesis, spring 2018
Stay at energistyrelsen, Diplomathesis, fall 2018
Stay at Total, Diploma thesis,fall 2018
Stay at Vestas aircoil, Diplomathesis, fall 2018
Stay at Glykom, Diploma thesis,fall 2018
Stay at Tjæreborg Industri,Diploma thesis, fall 2018
CFD modelling of 2D airfoils withice covering, PECT7, fall 2018
CFD modelling of engine intake manifold,PECT7, fall 2018
Traineeship at Vestas Aircoil –CFD of Vortex generator, PECT9, fall 2018
CFD modeling of Hydrocyclone,PECT9, fall 2018

Hydrostorage,EN2, Spring 2019
Hydrostorage, EN2, Spring 2019
Ladestander til elbil fra PV, EN2, Spring 2019
Ladestander til elbil fra PV, EN2, Spring 2019
Stayat Arctiko/Design of ventilated refrigerator, Diploma Thesis, Spring/Summer2019
Stayat Vestfrost/Design of ventilated refrigerator, Diploma Thesis, Spring/Autumn2019
CFD modellering af 10kW forbrændingsanlæg, PECT8, Spring2019
CFD modellering af Slug flow med OpenFOAM, PECT8, Spring2019
Heattransfer enhancement by Vortex generators, MSc thesis, Spring 2019
Modelingof corrosion in pressure vessels – Digital twin, MSc thesis, Spring 2019
Investigationof flammability limits of gas mixtures with inert gasses using Cantera, MScthesis, Spring 2019
Experimentalinvestigation of wood pelleting process using DOE, MSc thesis, Spring 2019
Modelingof H2S scavenger injection, MSc thesis, Spring 2019
CFDmodelling of Electric Arc Spray process, MSc thesis, Spring 2019
Designof refrigerator with thermal storage, EN3, fall 2019
CFDof a cylindrical biomass particle PECT7, fall 2019
Stay atEnerginet/Design of ventilation system, Diploma Thesis, Autumn 2019
Stayat Tjæreborg Industri/Design of Heat pump system, Diploma Thesis, Autumn 2019
Stayat B&W Vølund/Design of ECO/air preheat system, Diploma Thesis, Autumn 2019
Traineeshipat Vestas Aircoil – CFD of Cooling tower , PECT9, fall 2019
Traineeshipat Ørsted – Powerplant modeling with ebsilon, PECT9, fall 2019
Modelingof Water Hammer in complex pipe systems, PECT9, fall 2019
CFDmodeling and numerical optimization of a blown airfoil, MSc thesis, Spring 2020
LargeEddy Simulation (LES) of a helical twisted pipe, MSc thesis, Spring 2020
CFDmodeling of the two-phase flow from an Open Cooling Tower, MSc thesis, Spring2020
Experimentaltesting of wet fuel in a 10 kW combustion facility, PECT8, Spring 2020
Stirling engine, EN2, Spring 2020
Design af udtrækningsmaskine, M2, Spring 2020(co-supervisor)
Designaf patientlift, M2, Spring 2020 (co-supervisor)
Design af værkstedskran M2, Spring 2020 (co-supervisor)
Stayat Total/ modeling of leakage rate in wells, Diploma Thesis, Autumn 2020

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.

Member of N-studyboard 2010 – NOW
Study coordinator, PECT, 2013-NOW
Internship coordinator, Campus Esbjerg 2015-NOW
Coordinator of CES student conference (Esb): 2019-NOW
Semester Coordinator, PECT10, 2013-NOW
Semester Coordinator, PECT7, fall 2016-NOW
Semester Coordinator, EN2, Spring 2011-NOW
Semester Coordinator, EN3, fall 2011-NOW
Semester Coordinator, EN6, Spring 2013-NOW
Semester Coordinator, EN1, fall 2011-2015
Semester Coordinator, EN5, fall 2012

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

Grundkursus for universitetsundervisere 2009
University Pedagogy for Assistant Professors 2010-2012
Workshop for PhD supervisors 2017
Workshop for Ass. Prof. Pedagology Supervisors 2018

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

Mentor for new PhD students at IET under the PAU network 2006-2009
Member of Bioenerginetværk (local industrial interests) 2010-2015
Foredragsholder ved Dansk Naturvidenskab festival 2011-NOW
Foredragsholder ved Videnskabens dag 2012-NOW
Foredragsholder ved karrierevalg 2013 -NOW
Board member at DANSIS Spring 2012 – NOW

Arrangør af gymnasiebesøg, SRP m.m. 2011-NOW

Conference participation with presentation
International Conference on Multiphase Flow, 2007, Leipzig, Germany
ITI International Conference on Turbulence, 2008, Bertino, Italy
SIAMUF – Multiphase Flows Meeting, Short Course and Seminar, 2009, Gothenburg, Sweden
DANSIS – Research seminar, 2010
International Conference on Multiphase Flow, 2010, Tampa, Florida, USA
Kemiteknologi anno 2011, 2011, Konference m. præsentation, Esbjerg
International Conference on Multiphase Flow, 2013, Jeju, Korea
Flames days, 2015

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.

Local contact person for e-learning at Campus Esbjerg

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

Teacher of the year at Studyboard of Energy 2016
Teacher of the year at Studyboard of Civil Engineering 2016
Numerous nominations since 2010

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.

To become a good teacher you constantly have to listen to the feedback from the students and adjust the teaching material and teaching methods accordingly.
By spring 2020 i have implemented flipped learning in my teaching where i record a mix of screencast and recordings in front of a whiteboard, with very positive feedback from students.
Autumn 2019 I took the initiative to make a student conference i Esbjerg as response to frequent critique from Esbjerg Student having to go to Aalborg. The Esbjerg student conference was addapted to local conditions and joint with students from other study direction. The student conference was met with a positive reception by all.

8. Any other information or comments.

As a local anchorperson been responsible for the development of the study curriculumn for the thermal energy study directions (TP and PECT). Similarly I have been involved in development of much of the marketing material for these educations.