As part of the EU funded project, ICONN, Floating Power Plant will be collaborating with Aalborg University to give a week-long “summer” school on AeroElastic Modelling and Mooring Analysis. ICONN is a unique European Industrial Doctorate initiative to meet the current and future demand for highly skilled offshore wind and wave energy engineers by developing and advancing European capacity in the design, development and performance optimisation for Offshore Wind and Wave Energy installations. In line with the principles of the ICONN project, the summer school will be given with both an industrial and academic focus as well as complimentary training on presentation skills.

Each student will leave the summer school with all the necessary tools and knowledge to analyse floating wind turbines with a variety of mooring solutions. During the workshop, the students will work together to model the OC4 test case of a 5MW NREL wind turbine on a floating foundation. Whilst the challenges will be faced as a group, each student will run the analysis themselves on their own laptop.

The practical skills gained will be complimented with technical presentations by leading researchers in mooring systems and computational fluid dynamics. These academic lectures will be complimented by an industrial perspective on the floating wind energy industry by the CEO of Floating Power Plant.
<table>
<thead>
<tr>
<th>Day</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>10:00 – 10:30 Coffee and introduction</td>
</tr>
<tr>
<td></td>
<td>10:30 – 12:00 ESRs present their work to each other</td>
</tr>
<tr>
<td></td>
<td>12:00 – 13:00 Lunch</td>
</tr>
<tr>
<td></td>
<td>13:00 – 14:00 Discussion on how to improve presentations</td>
</tr>
<tr>
<td></td>
<td>14:00 – 16:00 Lecture: Introduction to hydro-aeroelastic modelling</td>
</tr>
<tr>
<td>Tuesday</td>
<td>08:00 – 10:00 Set-up Worked example</td>
</tr>
<tr>
<td></td>
<td>10:00 - 10:30 Coffee</td>
</tr>
<tr>
<td></td>
<td>10:30 -12:00 Lecture: Mooring systems for large floating structures – Design choices</td>
</tr>
<tr>
<td></td>
<td>12:00 – 13:00 Lunch</td>
</tr>
<tr>
<td></td>
<td>13:00 – 16:00 Worked example</td>
</tr>
<tr>
<td>Wednesday</td>
<td>08:00 – 10:00 Worked example</td>
</tr>
<tr>
<td></td>
<td>10:00 - 10:30 Coffee</td>
</tr>
<tr>
<td></td>
<td>10:30 -12:00 Lecture: Computational modelling of mooring systems</td>
</tr>
<tr>
<td></td>
<td>12:00 – 13:00 Lunch</td>
</tr>
<tr>
<td></td>
<td>13:00 – 16:00 Worked example</td>
</tr>
<tr>
<td>Thursday</td>
<td>08:00 – 9:00 Worked example</td>
</tr>
<tr>
<td></td>
<td>09:00 - 10:00 Lecture: Computational Fluid Dynamics - Is it the answer to all hydrodynamic modelling problems?</td>
</tr>
<tr>
<td></td>
<td>10:00 - 10:30 Coffee</td>
</tr>
<tr>
<td></td>
<td>10:30 -12:00 Lecture: CFD (continued)</td>
</tr>
<tr>
<td></td>
<td>12:00 – 13:00 Lunch</td>
</tr>
<tr>
<td></td>
<td>13:00 – 16:00 Finalise worked example</td>
</tr>
<tr>
<td>Friday</td>
<td>08:00 – 10:00 Lecture: LCOE and Finance for renewable energy devices</td>
</tr>
<tr>
<td></td>
<td>10:00 - 10:30 Coffee</td>
</tr>
<tr>
<td></td>
<td>10:30 -12:00 Re-present work to each other</td>
</tr>
<tr>
<td></td>
<td>12:00 – 13:00 Lunch</td>
</tr>
<tr>
<td>Title</td>
<td>Lecturer</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Introduction to hydro-aeroelastic modelling</td>
<td>Dr. Morten Thøtt Andersen • Post doc at AAU • Specialist in Moorings and Modelling of floating wind turbines</td>
</tr>
<tr>
<td>Mooring systems for large floating structures – Design choices</td>
<td>Dr. Guilherme Moura Paredes • Post doc at AAU • Previous Marie Curie PhD fellow</td>
</tr>
<tr>
<td>Computational modelling of mooring systems</td>
<td>Dr. Guilherme Moura Paredes • Post doc at AAU • Previous Marie Curie PhD fellow</td>
</tr>
<tr>
<td>Computational Fluid Dynamics - Is it the answer to all hydrodynamic modelling problems?</td>
<td>Dr. Claes Eskilsson • Associate Professor at AAU • Expert in CFD of wave energy devices</td>
</tr>
</tbody>
</table>
CFD have become an additional engineering tool in the marine renewable sector. In this talk we will, in addition to give a brief overview of the CFD technology in general, discuss specific topics for using CFD applications to marine renewables such as wave propagation, coupled mooring, PTO control, etc.

| LCOE and project Finance for renewable energy devices | Anders Køhler  
- CEO of Floating Power Plant  
- Degrees in Energy Engineering and Business |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The renewable energy industry is developing fast, with some technologies now becoming bankable. The future must include a mix of different technologies however, and some technologies are still in their early stages of development. The Levelised Cost of Energy (LCOE) is commonly being used as a comparative measure between the technologies. Whilst a large academic focus is often placed on improving technical or theoretical efficiencies of renewable energy devices, this is not always the key to bringing down the LCOE and making them bankable for project finance.</td>
<td></td>
</tr>
</tbody>
</table>