The PhD course will address *Geodesign Technologies as means of recording, representing, translating, simulating and communicating the Real World* in urban and landscape planning/design processes. The course goes beyond classic methods based on physical models made from cardboard or clay and well-established digital techniques framed by 2D GIS and 3D CAD. Accordingly, the aim of the course is to embrace, demonstrate and discuss new, emerging technologies vs the perceived world on one hand, and its digital vs physical representations on the other.

The course constitutes in particular the following topics:

- **Sandbox**: Tangible vs digital landscapes.
- **Augmented, virtual, and mixed realities**
- **Drones for mapping, 3D modelling, and film making**
- **Perception, aesthetics and creativity aspects of Geodesign Technologies in relation to planning/design processes**

Teaching will address *fundamental theoretical knowledge, discussion over concrete applications, and hands-on exercises* involving both technology and design assignments.

More details: [https://ign.ku.dk/english/geodesign-technologies/](https://ign.ku.dk/english/geodesign-technologies/)

**Contact info:**
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Phone: +45 23 82 80 45
<table>
<thead>
<tr>
<th>Time</th>
<th>Monday 26/8</th>
<th>Tuesday 27/8</th>
<th>Wednesday 28/8</th>
<th>Thursday 29/8</th>
<th>Friday 30/8</th>
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</thead>
<tbody>
<tr>
<td>09.00 - 10.00</td>
<td>WELCOME &amp; Introduction to geodesign technologies Hans Skov-Petersen</td>
<td>09.00 - 10.00: Drone-based film making and landscape design Rikke Munck Petersen</td>
<td>09.00 - 10.00: Digital media and Computational design methods in landscape and urban design Pia Fricker</td>
<td>09.00 - 10.00: Augmented and Virtual Reality (AR/VR) Patrick Moechel and Thomas Ott</td>
<td>09.00 - 11.00: Preparation of presentations</td>
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<td>10.00 - 10.45</td>
<td>Student presentation</td>
<td>10.00 - 11.00: Ethical and social implications of drones Dylan Cawthorne</td>
<td>10.15 - 12.00: Design iteration by using the tangible Sandbox Mariusz Hermannsdorfer, Kane Borg, Pia Fricker, and Hans Skov-Petersen</td>
<td>10.15 - 11.00: Interfacing digital models and augmented and virtual reality Patrick Moechel and Thomas Ott</td>
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<tr>
<td>11.00 - 12.00</td>
<td>Introduction to the site and design obligation Anne Wagner</td>
<td>11:00-12:00: Intuitive Design by using the tangible sandbox Mariusz Hermannsdorfer and Pia Fricker</td>
<td>11:15-12:00 Augmented and virtual reality Patrick Moechel and Thomas Ott</td>
<td>11.00 - 12.00: Presentation and evaluation of design proposals Moderated by Rikke Munck Petersen</td>
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<td>12:00-13:00</td>
<td>Lunch</td>
<td>12:00-13:00: Lunch</td>
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<td>13.00 - 15.00</td>
<td>Drones and point clouds: Theory, background and Demo of the equipment.</td>
<td>13.00 - 14.00: Introduction to Rhino Mariusz and Kane Borg</td>
<td>13.00 - 14.45: Robotic Interaction in the sandbox environment Kane Borg</td>
<td>13.00-13.45: Trimble SiteVision Geoteam (Danish Trimble Distributor)</td>
<td>13:00-14:00: Presentation and evaluation of design proposals (cont.) Moderated by Rikke Munck Petersen</td>
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<tr>
<td>15.00 - 16.30</td>
<td>Site perception and first design hypothesis via the point cloud</td>
<td>14.15 - 16.30: Design formulating by using the tangible Sandbox Mariusz, Kane Borg and Pia Fricker</td>
<td>15.00-16:00 Field work with AR Patrick Moechel, Thomas Ott and Geoteam</td>
<td>14.00 - 15.00: Evaluations of the applied technologies. Lessons learned</td>
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<td>16.30 - 17.30</td>
<td>Discussion on lessons learned</td>
<td>16:30-&gt; Discussion on lessons learned Facilitate by Dylan Cawthorne</td>
<td>16:30-&gt; Discussion on lessons learned</td>
<td>16:30-&gt; Discussion on lessons learned</td>
<td>16:30-&gt; PARTY</td>
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**Color codes**
- **INTRO**
- **FROM REALITY TO DIGITAL**
- **FROM DIGITAL TO TANGIBLE**
- **FROM TANGIBLE TO REALITY**
- **OUTRO**

**Lecturers and contributors:**
- Dylan Cawthorne, University of southern Denmark
- Patrick Moechel and Thomas Ott, Echtzeit GmbH
- Pia Fricker and Kane Borg, University of Aalto
- Rikke Munck Petersen, Anne Wagner, Lena Fischer and Hans Skov-Petersen. IGN, UNICPH
- Mariusz Hermannsdorfer. IGN, UNICPH and Rambøll
- GeoTeam (Danish Trimble Distributor)

Course organisers shown in **bold**