

-> [*Syllabus in deutscher Sprache*](#)

Syllabus
Course description

Course title	Project PD – 2d (ex D) INFRASTRUCTURE
Course code	97095
Scientific sector	Module 1: ICAR/13 product design Module 2: ICAR/13 digital modelling Module 3: M-FIL/04 theories and languages of product design
Degree	Bachelor in Design and Art (L-4)
Semester	Summer semester 20/21
Year	2 nd or 3 rd
Credits	19
Modular	Yes
Teaching language	Module 1: German Module 2: German Module 3: English
Total lecturing hours	180 (Module 1: 90, Module 2: 60, Module 3: 30)
Total hours of self-study and / or other individual educational activities	295 (Module 1: about 110, Module 2: about 90, Module 3: about 95)
Attendance	not compulsory but recommended
Prerequisites	To have passed the WUP project

Project description and specific educational objectives	<p><i>The course belongs to the class "caratterizzante" (module 1), "di base" (module 2) and "affine integrativa" (module 3) in the curriculum in Design.</i></p> <p>PROJECT DESCRIPTION Course description module 1 – Product Design:</p> <p>Infrastructure – Public & Domestic</p> <p>Public: What will be important in cities in the future? What kind of infrastructures will we deal with? Lighting, mobility, security, ways, ... What else can we think of? Examples are:</p> <ul style="list-style-type: none"> · Electricity · Traffic lights · Public furniture · Bicycle Race · Chargers for e-mobility · Parking meters · Hydrants · Power poles · Sharing (cars, bikes, scooters, etc) <p>Domestic: What will be important in our homes in the future?</p>
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What kind of infrastructures will we deal with? Energy, devices, comfort, ... What else can we think of?

Examples are:

- Light switches
- Smart homes
- Lighting
- Sound
- Heat
- Electronic devices
- Cleaning
- Water

Educational objectives module 1 – Product Design:

Knowledge and understanding

- to acquire one's own project methodology in the field of product design, from the phase of planning to the phase of realisation of the project;
- to acquire the basic technical knowledge necessary to realise a project in the field of product design.

Making judgements

- to acquire the ability to make independent judgements for the purpose of developing their own design skills and in relation to all those decisions that are necessary to bring a product design project to completion.

Communication skills

- to acquire the ability to present in a professional manner an independently realised project in the field of product design in the form of an installation, orally as well as in writing.

Learning skills

- to learn a design methodology at a professional level - in the sense of being able to identify, develop and realise solutions to complex design problems.

We must become experts in the semester topic to create something substantially relevant and important. To achieve general knowledge and insight, we start by researching basic questions, getting to know the "What-Why-How":

What is infrastructure? What is it made of? What are its advantages? What aspects are worth a review?

Why is it important? Why do we need it? Why does it work the way it does?

How does it work? How can we improve it?

One step further

Let's look at infrastructure in the broadest sense. Families, kids, parents, the elderly, society: what happens when familiar structures collapse? What kind of solutions can we develop? Take a look at indigenous tribes and people. How do their infrastructures work?

Can you think of another kind of infrastructure that you find worth working on? Give it a go! (Example: Emotional infrastructure: how do I think? How am I organized? What happens when I have a blackout?)

Next phase

After we have become experts, we will start looking for interesting topics with emphasis on public and domestic infrastructure.

Goal

We want to improve life and create a bright future.

Course description module 2 – Digital Modelling:

Ideally, we work with Rhinoceros and Grasshopper for creating models. For visualisation, we use KeyShot and TwinMotion. And for editing, Adobe InDesign, Illustrator and Photoshop. Of course, drawing by hand is essential, and if a student wants to use another software, this is ok.

The course departs from Fredrik Skåtar’s idea of goal-oriented skills training. By striving for reality conversion of one’s idea, the student will automatically gain skills and knowledge: they will research the best ways of getting to the next phase of the design process. Therefore, the technology of choice is a task-oriented combination of digital and non-digital design methods, putting the student’s idea in the foreground. Idea sketches (by hand or as physical sketch models) will be organised, examined and refined with 3d-modelling and digital fabrication. Much emphasis will also be on geometry, CAD-technologies, mathematics, basic scripts, and precedents which are indispensable for starting to be creative using 3d-modelling. Like this and tied to the project, we also examine the geometry and function of precedent design objects related to each student’s project focus.

The first lectures will be introductory and after that goal-oriented and individual. The goal in this course is to convert student’s ideas into a design product. The design process will revolve along with these segments: *idea - sketch - research - prototype - assessment or reconsideration*. Where e.g. a *prototype* can be both a refined 3d-model or a physical model and *assessment* is based on visualisations presented with good graphic design. A *reconsideration* will always take place, given that the idea transforms when examined.

Educational objectives Module 2 – Digital Modelling:

- To acquire skills for managing a design project from sketch to prototype, primarily aided by parametric digital modelling and digital fabrication techniques.
- To acquire knowledge of geometry, mathematics, design precedents and specific terminology and techniques

used in 3d-modelling.

- We are examining and testing technical and scientific product design issues with help from digital modelling and fabrication.
- To acquire experience from the design processes: how it examines and refines one's ideas and skills. From first sketches to digital sketches, to 3d-models and physical models.
- To acquire skills in mediating one's idea fast and precise, using appropriate sculptural and visual language (images, models, graphic design)

Course description module 3 – Theories & Languages of Product Design:

Top-down, bottom-up and other approaches: vital systems for human environments

Infrastructures are rarely wholly planned or imposed top down. Regardless the will of their creators - and also despite the concepts of politicians - infrastructures seem to have a will of their own. They are not only pushed through from above but also demanded from below. Different interests influence their shape, and they are used and rearranged in reaction to actual needs. Not only are infrastructures messy, but they are often not in the vertical alignment implied by the term. The economist William Rankin has emphasised how, 'even though an electric grid can be seen both as a network and as infrastructure, as a network it is defined by connections and pathways through which something circulates, while as infrastructure it is defined by its supportive relationship to other activities'.

In our course - conceived as integrated part of the project PD-D4 (SS 2021) - we shall on one hand explore and analyse significant examples of infrastructures in the recent past and present. On the other hand we shall try to understand more specifically (and critically) examples of possible relationships between infrastructures and theories & languages of product design. The aim is to make conceptual moves that support developing design practices capable of engaging with a complex 'now' and with uncertain futures - and to support those moves through using theoretical perspectives in exploring if it would be possible to see, think, and do design in different propositive ways.

The course is designed for acquiring professional skills and knowledge in the framework of a general overview of scientific contents.

Educational objectives module 3 – Theories and Languages of Product Design:

Disciplinary objectives - with reference to the indicated course and project topics - are:

- the acquisition of essential theoretical knowledge

	<p>(related to theories and languages of product design) so as to be able to carry out a project in the field of product design</p> <ul style="list-style-type: none"> • the acquisition of basic knowledge so as to be able to look critically at their own work and to deal with the complexities of contemporary society • the acquisition of basic knowledge concerning purposeful theoretical subjects in the field of the overarching project topic • the acquisition of basic knowledge concerning the culture of design with specific reference to product design • the ability to capture and analyse contemporary cultural and social phenomena that characterize design and art • a theoretical and socio-cultural education that aims to acquire a solid cultural background where technical media skills are combined with a theoretical reflection • the ability to developed a good independent judgment, both in the critical evaluation of their work and in the ability to use the appropriate interpretive tools with respect to the contexts where they are going to apply their own design practice and / or to continue their studies, assessing also social and ethical aspects • the ability to communicate at a professional level and argue the reasons for their choices and justify them from a formal, technical, scientific and theoretical point of view
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Module 1	Product Design
Lecturer	Steffen Kehrlé e-mail: sk@ateliersteffenkehrle.com ; s.kehrle@unibz.it tel. +49 172 7233467, webpage: www.ateliersteffenkehrle.com
Teaching language	German
Office hours	Monday 14-18 Tuesday 9-13
List of topics covered	.Understanding of the topic .Turning the general topic into a personal briefing method from research to a final product .Creating a concept .Transforming a concept into a product .How to present a concept or a product in a convincing way .prototyping the idea
Teaching format	Lectures,micro-workshop,practical and theoretical,exercises,discussions

Module 2	Digital Modelling
Lecturer	Fredrik Skåtar, Architect SAR/MSA office F1.01b e-mail: fredrik@skatar.com tel. +49 177 896 85 87 webpage www.skatar.com
Teaching language	German
Office hours	Tuesday 16-17:30
List of topics covered	<ul style="list-style-type: none"> • Design process tools: <ul style="list-style-type: none"> ○ Geometry / Sketching / Sculpture / Composition / Visualisation / Idea mediation

	<ul style="list-style-type: none"> ○ 3D Modeling & Parametric design: foremost Rhino/Grasshopper ○ Visualisation: Twinmotion, Keyshot, ○ Graphic design: InDesign, Illustrator, Photoshop ● Production methods / Material knowledge / Light concepts ○ Physical sketch models ○ 3d-model preparations and exports ○ LED-technology (if addressed) ○ Fabrication: 3d-printing, CNC-milling. In combination with non-digital assembly
Teaching format	Lectures, tutorials, exercises, discussions. We will use a shared Miro-board for displaying our progress.
Module 3	Theories and Languages of Product Design
Lecturer	<p>Hans Leo Höger office F2.04 e-mail: hans.hoeger@unibz.it tel. +39 0471 015192</p> <p>webpage https://www.unibz.it/it/faculties/design-art/academic-staff/person/891-hans-leo-hoeger</p>
Teaching language	English
Office hours	Wednesday 17-19
List of topics covered	<ul style="list-style-type: none"> - The topics are organized along selected steps of design processes regarding, for instance: empathy (personal relationship to the project topic), inter- and transdisciplinarity (cultural engineering, storytelling), relevant examples / role models (context, character, content, methodology), WYSIWYG - What You See Is What You Get, impact of and quality in design projects
Teaching format	Lectures, seminars, exercises, group work
Learning outcomes	<p>Learning outcomes for module 1 – Product Design:</p> <ul style="list-style-type: none"> - to have the ability to design, develop and implement a project in the field of product design - to have the ability to think in social context - know how to analyze, design and develop industrial projects for mass consumption - knowledge of the technical and scientific aspects of the design of industrial products for mass consumption - present at a professional level their own projects realized in the field of product design in the form of an installation, both oral and written - communicate at a professional level and argue the reasons for their choices and justify them from a formal, technical point of view <p>Learning outcomes for module 2 – Digital Modelling:</p> <ul style="list-style-type: none"> - To acquire design process experience — which will automatically support the student’s next project. - To be able to carry out a design task with help from contemporary design methods. - Basic knowledge of geometry, mathematics and digital design-specific terminology and operations. - Skills in creating CAD-models

- Material knowledge
- Skills in creating digital models (2d and 3d) suited for digital fabrication.
- Presentational skills: visualisations (KeyShot and Twinmotion) and graphic design (InDesign, Photoshop)
- Skills in mediating one's idea

Learning outcomes for module 3 – Theories and Languages of Product Design:

Disciplinary skills

- to have the ability to finalize the implementation of a project undertaken in the field of product design drawing on the basic knowledge acquired in the subjects of "Theories and Languages of Product Design"
- to have the ability to grasp important phenomena that characterize today's society and to know how to look at these critically, also from a social and ethical perspective, and to develop appropriate solutions in terms of the proposal / response regarding the project (PD-D4)
- knowledge of historical and theoretical foundations of design
- knowledge of relevant sociological, semiotic and anthropological aspects
- know how to analyze (critically), define and contextualize their projects
- know how to apply methods of empirical research in the context of the project topic
- know how to present critical and planning analysis orally
- know how to present written critical and planning analysis
- develop a good independent judgment, both in the critical evaluation of their work and in the ability to use the appropriate interpretive tools with respect to the contexts where they are going to apply their own design practice and / or to continue their studies, assessing also social and ethical aspects
- communicate at a professional level and argue the reasons for their choices and justify them from a theoretical point of view

Knowledge and understanding

- the expected learning outcome is that students will have been enabled to demonstrate a systematic understanding of the topics covered by the course;
- a further expected learning outcome is that students will have developed conceptual insight and ability of analysis (focusing on research skills, theoretical and analytical methods and on how they are applied)

Ability to apply knowledge and understanding

- the expected learning outcome is that students will have been enabled to apply their knowledge and understanding to those professional situations in which

	<p>theoretical design expertise related to the thematic cluster of the project (PD-D4) is necessary and required or, in any case, useful and inspiring</p> <p><i>Autonomy of judgment</i></p> <ul style="list-style-type: none"> - the expected learning outcome is that students will have been enabled to gather and interpret relevant sources, information and documentations from the fields of product design theory, with particular reference to the thematic project cluster (PD-D4), in the context of design projects or design study topics (e.g. in the concept and research state of projects); - a good autonomy of judgment in the critical evaluation of their own work and in their ability to use correct interpretative methods in relation to the contexts in which they will apply their design practice and/or continue their studies, also considering ethical and social aspects. <p><i>Communication skills</i></p> <ul style="list-style-type: none"> - the expected learning outcome is that students will have been enabled to communicate to both specialist and non-specialist audiences clearly and unambiguously - with confidence and originality - information, ideas, problems and solutions related to questions and topics of product design theory (with particular reference to the thematic project cluster - PD-D4) <p><i>Ability to learn (learning skills)</i></p> <ul style="list-style-type: none"> - the expected learning outcome is that students will have developed those learning skills that are necessary for them to continue to undertake successfully further studies of product design with a high degree of autonomy.
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<p>Assessment</p>	<p><i>By the end of the semester, each student must upload on the Microsite of the faculty detailed documentation of the semester work.</i></p> <p>http://portfolio.dsgn.unibz.it/wp-admin</p> <p><i>Documentation is an integral part of the exam. The documentation must include visual documentation and an abstract of the project.</i></p> <p>Assessment details for module 1 – Product Design: The final exam consist of a documentation of the project developed during the semester. The student is asked to present the project with the following documentation:</p> <ul style="list-style-type: none"> . screen presentation . complete printed documentation of the project (a booklet will be handed at the faculty secretariat the day before the exam .a model . material that will be defined with the students during the course <p>Assessment details for module 2 – Digital Modelling:</p>
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	<p>Practical part and oral. Documents are to be handed in together with scheduled presentations: midterm and final presentation. The document shall consist of one presentation document (supporting the oral presentation) and a document that elaborates the project. Students' participation in seminar groups will also be taken into account.</p> <p>Assessment details for module 3 – Theories and Languages of Product Design: The exam is included as integral part in the final presentations concerning the project PD-D4 with particular reference - on one hand - to those contents that have been explored, presented and discussed in the classroom and - on the other hand - to those ones documented in the digital Reserve Collection of "Theories and Languages of Product Design: Project D4". The exams' evaluations will particularly focus onto the students' ability and originality concerning the integration of conceptual and theoretical topics and characteristics into their final presentations of the projects.</p>
Assessment language	The same as the teaching language
Evaluation criteria and criteria for awarding marks	<p><i>The evaluation of the single modules does not result in three separate marks, but will add up to the overall project evaluation. There is only one final overall mark for the project, which is defined by the average of the three marks, weighted according to the credits of the individual modules. The professors evaluate the project according to the following criteria:</i></p> <p>Evaluation criteria and criteria for awarding marks for module 1 – Product Design: Process and implementation of the project Relation and understanding of the given brief Final object or research Model Presentation</p> <p>Evaluation criteria and criteria for awarding marks for module 2 – Digital Modelling:</p> <p>Fredrik Skåtar will look at how each project relates to three facets:</p> <ul style="list-style-type: none"> ● Artistic expression ● Functionality and context (how it relates to its surrounding) ● How the above was executed technically; <ul style="list-style-type: none"> ○ sculpturally (the reciprocity of sketches, digital modelling, visualisation) ○ choice of material ○ the suggested final production method <p>Evaluation criteria and criteria for awarding marks for module 3 – Theories and Languages of Product Design:</p> <ul style="list-style-type: none"> - correctness of presented topics, concepts and theoretical contents/analysis/conclusions - clarity of presented topics, concepts and theoretical

	<p>contents/analysis/conclusions</p> <ul style="list-style-type: none"> - mastery of course-related language and terminology - demonstration of knowledge and understanding - ability to summarize, evaluate, and establish relationships between topics (ability of contextualization) - skills in critical thinking - ability to summarize in own wordsPract
<p>Required readings</p>	<p>Module 1 – Product Design:</p> <p>[they will be communicated at the start of the course]</p> <p>Module 2 – Digital Modelling: No required readings — only supplementary, see below</p> <p>Module 3 – Theories and Languages of Product Design:</p> <p>Urban Think Tank (eds.) SLUM lab No. 10 ETH Zurich (2015) ISBN 978-3-98092-639-3</p> <p>Peter Erni, Martin Huwiler, Christophe Marchand Transfer Lars Müller Publishers (2008) ISBN: 978-3-03778-113-5</p>
<p>Supplementary readings</p>	<p>Module 1 – Product Design:</p> <p>[they will be communicated at the start of the course]</p> <p>Module 2 – Digital Modelling:</p> <ul style="list-style-type: none"> • Summaries of Fredrik Skåtar’s lectures. (links will be added) • Fredrik Skåtar’s video-tutorials: https://vimeo.com/showcase/5608375 • The Forum of https://discourse.mcneel.com/ • Grünbaum, B., Shephard, G. C. (2016) <i>Tilings and Patterns</i>, Dover Publications, USA (original work published 1987) • Diegel, O., Nordin, A., Motte, D. (2019) <i>A Practical Guide to Design for Additive Manufacturing</i>. Springer Verlag • Ostwald, M.J. (2010) <i>Ethics and the auto-generative design process</i>, Building Research and Information, vol 38, no 4, pp. 390-400. • Sennett, R. (2009) <i>The Craftsman</i>. Hoover Institution Press • “Urban development in Antwerp” — https://drive.google.com/file/d/1iyIvUh5-8bhp06d4EG5miYi1vpIPxCMc/view?usp=sharing • Lectures by Paola Viganò: https://www.youtube.com/results?search_query=Paola+Vigano • Cross, N. (2011) <i>Design Thinking</i>, Berg Publishers <p>Module 3 - Theories and Languages of Product Design:</p> <p>Angelika Burtscher, Manuela Dematto, Roberto Gigliotti Traum Stadt Wir - Sogno Città Noi</p>

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Syllabus
Beschreibung der Lehrveranstaltung

Titel der Lehrveranstaltung	Projekt PD – 2.d (ex D)
Code der Lehrveranstaltung	INFRASTRUCTURE 97095
Wissenschaftlich-disziplinärer Bereich der Lehrveranstaltung	Modul 1: ICAR/13 Industriedesign Modul 2: ICAR/13 Digitaler Modellbau Modul 3: M-FIL/04 Theorien und Ausdrucksformen des Produktdesigns
Studiengang	Bachelor in Design und Künste (L-4)
Semester	Sommersemester 2020
Studienjahr	2., 3.
Kreditpunkte	19
Modular	Ja
Gesamtanzahl der Vorlesungsstunden	180 (Modul 1: 90, Modul 2: 60, Modul 3: 30)
Gesamtanzahl der Stunden für das Eigenstudium und andere individuelle Bildungstätigkeiten	ca. 295 (Modul 1: ca. 110, Modul 2: ca. 95, Modul 3: ca. 95)
Anwesenheit	nicht verpflichtend, aber empfohlen
Voraussetzungen	Das WUP-Projekt belegt zu haben.
Spezifische Bildungsziele	<p><i>Die Lehrveranstaltung zählt zum Bildungsbereich der kennzeichnenden Fächer (Modul 1), der Grundfächer (Modul 2) sowie der verwandten und ergänzenden Fächer</i></p> <p>Kursbeschreibung Modul 1 – Produktdesign:</p> <p>Infrastructure – Public & Domestic</p> <p>Öffentlich: Was wird zukünftig wichtig im städtischen Raum? Welche Arten von Infrastrukturen werden wir haben? Licht, Mobilität, Sicherheit ... Was gibt es noch?</p> <p>Beispiele sind:</p> <ul style="list-style-type: none"> Elektrizität Ampeln Möbel im öffentlichen Raum Ladestationen für E-Mobilität Hydranten Strommasten Sharing (Autos, Fahrräder, Roller, etc.) <p>Zuhause: Was wird zukünftig wichtig in unserem Zuhause? Welche Arten von Infrastrukturen werden wir haben? Energie, Geräte, Komfort, ... Was gibt es noch?</p> <p>Beispiele sind:</p> <ul style="list-style-type: none"> Lichtschalter Smart Homes Licht Sound

Wärme
 Elektrische Geräte
 Reinigen
 Wasser

Bildungsziele Modul 1 – Produktdesign:

Wissen und Verstehen

Die Studierende werden:

- eine eigene Projektmethodik im Bereich des Produktdesigns, von der Phase der Planung bis zur Phase der Realisierung des Projekts erwerben;
- die technischen Grundkenntnisse erwerben, die zur Verwirklichung eines Projektes im Bereich des Produktdesigns notwendig sind.

Anwenden von Wissen und Verstehen

Die Studierende werden in der Lage sein:

ein Projekt im Bereich des Produktdesigns zu planen, zu entwickeln und zu verwirklichen.

Urteilen

Die Studierende werden:

selbständig urteilen können, und dies zum Zwecke der Entwicklung der eigenen Entwurfsfähigkeiten sowie in Bezug auf all jene Entscheidungen (technischer, wissenschaftlicher und theoretischer Natur), die notwendig sind, um ein Projekt zum Abschluss zu bringen.

Kommunikationsfähigkeit

Die Studierende werden:

ein im Bereich des Produktdesigns eigenständig realisiertes Projekt in Form einer Installation, mündlich sowie schriftlich professionell zu präsentieren.

Lernfähigkeit

Die Studierende werden:

- auf professionellem Niveau eine gestalterische Methodik – im Sinne einer Fähigkeit, Lösungen für komplexe gestalterische Probleme zu ermitteln, zu entwickeln und zu realisieren.

Recherche

Wir müssen Experten im Thema werden, wenn wir etwas substanziell Relevantes schaffen wollen. Um generelles Wissen und Einblicke zu erhalten, recherchieren wir zunächst grundlegende Fragen und lernen das „Was-Warum-Wie“ näher kennen:

Was ist Infrastruktur? Was sind ihre Bestandteile? Ihre Vorteile? Welche Aspekte lassen sich überdenken?

Warum ist sie wichtig? Warum brauchen wir sie? Warum funktioniert sie so, wie sie es tut? Wie funktioniert sie? Wie können wir sie verbessern?

Ein Schritt weiter

Lasst uns Infrastruktur im weitesten Sinn betrachten. Familien, Kinder, Eltern, ältere Menschen, die Gesellschaft: Was passiert, wenn familiäre Strukturen auseinanderbrechen? Was bedeutet eine Krise?

Welche Lösungen können wir entwickeln? Schauen wir uns indigene Kulturen an. Wie funktionieren ihre Infrastrukturen?

Gibt es weitere Beispiele zum Thema, die interessant sind und an denen ihr arbeiten möchtet? Gerne! (Beispiel: Emotionale Infrastruktur: Wie denke ich? Wie bin ich organisiert? Was passiert wenn ich ein Blackout habe?)

Nächste Phase

Nachdem wir Experten sind, suchen wir uns interessante Themenbereichen mit den Schwerpunkten öffentliche und häusliche Infrastruktur heraus.

Ziel

Wir wollen das Leben verbessern und eine bessere Welt schaffen.

Kursbeschreibung Modul 2 – Digitaler Modellbau:

Idealerweise arbeiten wir mit Rhinoceros und Grasshopper zusammen, um Modelle zu erstellen. Zur Visualisierung verwenden wir KeyShot und TwinMotion. Und zum Bearbeiten Adobe InDesign, Illustrator und Photoshop. Natürlich ist das Zeichnen von Hand unerlässlich, und wenn ein Student eine andere Software verwenden möchte, ist dies in Ordnung.

Der Kurs weicht von Fredrik Skåtars Idee eines zielorientierten Kompetenztrainings ab. Durch das Streben nach einer Realitätsumwandlung der eigenen Idee erhält der Student automatisch Fähigkeiten und Kenntnisse: Er erforscht die besten Wege, um zur nächsten Phase des Designprozesses zu gelangen. Daher ist die Technologie der Wahl eine aufgabenorientierte Kombination aus digitalen und nicht digitalen Entwurfsmethoden, die die Idee des Studentens in den Vordergrund stellt. Ideenskizzen (von Hand oder als physische Skizzenmodelle) werden mit 3D-Modellierung und digitaler Fertigung organisiert, untersucht und verfeinert. Ein großer Schwerpunkt wird auch auf Geometrie, CAD-Technologien, Mathematik, grundlegenden Skripten und Präzedenzfällen liegen, die für den Einstieg in die 3D-Modellierung unabdingbar sind. Auf diese Weise und in Verbindung mit dem Projekt untersuchen wir auch die Geometrie und Funktion von Präzedenzfall-Designobjekten, die sich auf den Projektfokus jedes Students beziehen.

Die ersten Vorträge werden einführend und danach zielorientiert und individuell sein. Ziel dieses Kurses ist es, die

	<p>Ideen der Student in ein Designprodukt umzuwandeln. Der Entwurfsprozess dreht sich zusammen mit diesen Segmenten: Idee - Skizze - Forschung - Prototyp - Bewertung oder Überprüfung. Wo z.B. Ein Prototyp kann sowohl ein verfeinertes 3D-Modell als auch ein physikalisches Modell sein. Die Bewertung basiert auf Visualisierungen mit gutem Grafikdesign. Eine erneute Überprüfung wird immer stattfinden, da sich die Idee bei der Prüfung verändert.</p> <p>Bildungsziele Modul 2 – Digitaler Modellbau:</p> <ul style="list-style-type: none"> • Erwerb von Fähigkeiten zur Verwaltung eines Entwurfsprojekts von der Skizze bis zum Prototyp, hauptsächlich unterstützt durch parametrische digitale Modellierung und digitale Fertigungstechniken. • Erwerb von Kenntnissen in Geometrie, Mathematik, Präzedenzfällen sowie spezifischen Begriffen und Techniken für die 3D-Modellierung. • Wir untersuchen und testen technische und wissenschaftliche Fragen des Produktdesigns mithilfe digitaler Modellierung und Fertigung. • Erfahrungen aus den Designprozessen sammeln: Wie werden die eigenen Ideen und Fähigkeiten untersucht und verfeinert? Von ersten Skizzen über digitale Skizzen bis hin zu 3D-Modellen und physischen Modellen. • Erwerb von Fähigkeiten zur schnellen und präzisen Vermittlung der eigenen Idee unter Verwendung einer geeigneten skulpturalen und visuellen Sprache (Bilder, Modelle, Grafikdesign)
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Modul 1	Produktdesign
Dozent	Steffen Kehrlé e-mail: sk@ateliersteffenkehrle.com , s.kehrle@unibz.it tel. +49 172 7233467, webpage: www.ateliersteffenkehrle.com
Unterrichtssprache	Deutsch
Assistenz/Sprechzeiten	Montag 14-18 Dienstag 9-13
Auflistung der behandelten Themen	Erfassen des Themas, Übersetzung des Themas in ein eigenständiges Projekt, von der Recherche bis zum finalen Produkt gelangen, ein Konzept entwerfen, ein Konzept in ein Produkt übersetzen, überzeugende Präsentationsformen erarbeiten, Prototypen entwickeln
Unterrichtsform	Impulsvorträge, praktische und theoretische Workshops, Übungen, Diskussionen

Modul 2	Digital Modelling
Dozent	Fredrik Skåtar, Architect SAR/MSA office F1.01b e-mail: fredrik@skatar.com tel. +49 177 896 85 87 webpage www.skatar.com
Unterrichtssprache	German
Assistenz/Sprechzeiten	Dienstag von 16:00 bis 17:30
Auflistung der behandelten Themen	<ul style="list-style-type: none"> • Entwurfsprozesswerkzeuge: <ul style="list-style-type: none"> ○ Geometrie / Skizzieren / Skulptur / Komposition /

	<p>Visualisierung / Ideenvermittlung</p> <ul style="list-style-type: none"> ○ 3D-Modellierung und parametrisches Design: Vor allem Rhino / Grasshopper ○ Visualisierung: Twinmotion, Keyshot, ○ Grafikdesign: InDesign, Illustrator, Photoshop ● Produktionsmethoden / Materialwissen / Lichtkonzepte ○ Physikalische Skizzenmodelle ○ Vorbereitung und Export von 3D-Modellen ○ LED-Technologie (falls angesprochen) ○ Herstellung: 3D-Druck, CNC-Fräsen. In Kombination mit nicht digitaler Montage
<p>Unterrichtsform</p>	<p>Vorträge, Tutorials, Übungen, Diskussionen. Wir werden ein gemeinsames Miro-Board verwenden, um unsere Fortschritte anzuzeigen.</p>
<p>Modul 3</p>	<p>-> siehe Syllabus in englischer Sprache</p>
<p>Erwartete Lernergebnisse Modul 1: Produktdesign</p>	<p><i>Erwartete Lernergebnisse für Modul 1 –Produktdesign:</i></p> <ul style="list-style-type: none"> ● Erfahrung im Designprozess sammeln - dies unterstützt automatisch das nächste Projekt des Studentens. ● Eine Entwurfsaufgabe mit Hilfe zeitgemäßer Entwurfsmethoden ausführen zu können. ● Grundkenntnisse in Geometrie, Mathematik und digitalem Design - spezifische Terminologie und Operationen. ● Kenntnisse in der Erstellung von CAD-Modellen ● Materielles Wissen ● Kenntnisse in der Erstellung digitaler Modelle (2d und 3d), die für die digitale Fertigung geeignet sind. ● Präsentationsfähigkeiten: Visualisierungen (KeyShot und Twinmotion) und Grafikdesign (InDesign, Photoshop) ● Fähigkeiten zur Vermittlung der eigenen Idee
<p>Art der Prüfung</p>	<p><i>Bis zum Ende des Semesters muss jeder Studierende auf der Microsite der Fakultät eine detaillierte Dokumentation der Semesterarbeit hochladen.</i> http://portfolio.dsgn.unibz.it/wp-admin <i>Die Dokumentation ist integraler Bestandteil der Prüfung. Die Dokumentation muss eine visuelle Dokumentation und eine Zusammenfassung des Projekts enthalten.</i></p> <p><i>Art der Prüfung – Modul 1 –Produktdesign:</i> Die finale prüfung besteht aus einer Dokumentation, die während dem Semester entsteht. Die Studierenden präsentieren das Projekt folgendermaßen:</p> <ul style="list-style-type: none"> ● Bildschirmpräsentation ● Printpräsentation des Projekts (eine Ausgabe wird dem Sekretariat am Tag vor der Prüfung ausgehändigt. ● Ein physisches Modell ● Materialien, die mit den Studierenden während des Semesters besprochen warden. <p><i>Art der Prüfung – Modul 2 – Digitaler Modellbau:</i> Schriftlich und mündlich. Die Unterlagen sind zusammen mit den geplanten Präsentationen einzureichen: Zwischen- und</p>

	<p>Abschlusspräsentation. Das Dokument besteht aus einem Präsentationsdokument (das die mündliche Präsentation unterstützt) und einem Dokument, in dem das Projekt ausgearbeitet wird. Die Teilnahme der Studierenden an Seminargruppen wird ebenfalls berücksichtigt</p>
Prüfungssprache	entspricht der Unterrichtssprache
Bewertungskriterien und Kriterien für die Notenermittlung	<p><i>Die Bewertung der einzelnen Module führt nicht zu einer getrennten Benotung, sondern fließt in die Gesamtbewertung des Projektes ein. Es wird eine Note für das gesamte Projekt zugewiesen. Diese ergibt sich aus dem Notendurchschnitt, gewichtet nach den Kreditpunkten der einzelnen Module.</i></p> <p><i>Bewertungskriterien und Kriterien für die Notenermittlung für Modul 1 –Produktdesign:</i></p> <p>Prozess und Implementierung des Projekts Verhältnis und Verständnis des angebotenen Projekts Endprodukt und Recherche Modelle Präsentation</p> <p><i>Bewertungskriterien und Kriterien für die Notenermittlung für Modul 2 –Digitaler Modellbau:</i> Fredrik Skåtar wird untersuchen, wie sich jedes Projekt auf drei Facetten bezieht:</p> <ul style="list-style-type: none"> ● Künstlerischer Ausdruck ● Funktionalität und Kontext (wie es sich auf seine Umgebung bezieht) ● Wie das oben genannte technisch ausgeführt wurde; <ul style="list-style-type: none"> ○ skulptural (die Reziprozität von Skizzen, digitale Modellierung, Visualisierung) ○ Materialwahl ○ die vorgeschlagene endgültige Produktionsmethode
Pflichtliteratur	<p><i>Module 1 – Produkt Design:</i></p> <p>[werden am Anfang des Kurses mitgeteilt]</p> <p><i>Module 2 – Digital Modelling:</i> Keine Pflichtliteratur, nur weiterführende (s. unten)</p>
Weiterführende Literatur	<p><i>Modul 1 – Produkt Design:</i> [werden am Anfang des Kurses mitgeteilt]</p> <p><i>Module 2 – Digital Modelling:</i></p> <ul style="list-style-type: none"> ● Summaries of Fredrik Skåtar’s lectures. (links will be added) ● Fredrik Skåtar’s video-tutorials: https://vimeo.com/showcase/5608375 ● The Forum of https://discourse.mcneel.com/ ● Grünbaum, B., Shephard, G. C. (2016) <i>Tilings and Patterns</i>, Dover Publications, USA (original work published 1987) ● Diegel, O., Nordin, A., Motte, D. (2019) <i>A Practical</i>

	<p><i>Guide to Design for Additive Manufacturing</i>. Springer Verlag</p> <ul style="list-style-type: none"> • Ostwald, M.J. (2010) <i>Ethics and the auto-generative design process</i>, Building Research and Information, vol 38, no 4, pp. 390-400. • Sennett, R. (2009) <i>The Craftsman</i>. Hoover Institution Press • “Urban development in Antwerp” — https://drive.google.com/file/d/1iyIvUh5-8bhp06d4EG5miYi1vpIPxCMc/view?usp=sharing • Lectures by Paola Viganò: https://www.youtube.com/results?search_query=Paola+Vigano • Cross, N. (2011) <i>Design Thinking</i>, Berg Publishers
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