

Syllabus
Course description

Course title	Project Product Design 2.c "low-tech"
Course code	97094
Scientific sector	Module 1: ICAR/13 Module 2: ICAR/13 Module 3: M-FIL/04
Degree	Bachelor in Design and Art (L-4)
Semester	Summer semester 2022/23
Year	2 nd
Credits	19 (Module 1: 8 CP, Module 2: 6 CP, Module 3: 5 CP)
Modular	Yes

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 Product Design 1; to have certified the language level proficiency B1 in the modules' languages in years following the first
Maximum number of students per class	20

Course description	<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>Description Module 1 – Product Design: All too often, the technical effort we invest in designing our environments and tools exceeds the actual demand and misses its common benefit. As a result, we look for solutions to problems that would not exist without a highly engineered world focused on innovation. The fragility and our own dependency on complex (immature) constructs is regularly revealed to us when even the most trivial processes of daily life have become incomprehensible, inconvenient, expensive and wasteful.</p> <p>The aim of low-tech is to develop counter-designs to this.</p>
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Avoiding complicated and expensive technology, instead using simple construction methods and principles of operation. Objects of daily use and their entire life cycle are to be examined, radically simplified or reinterpreted. This makes them cheaper, more robust and easier to understand, to maintain and repair. Material use and production become less questionable and are adapted to local conditions. But, simplifications can also be achieved through new concepts of use or consumption, and products can even be made obsolete.

In that sense, low-tech goes beyond a purely minimalist form-language. It permeates the inner core of a product and will have to prove itself and adapt in use.

In the project, we look at developments and applications of technology and techniques, as well as their interrelationships in design.

The students are asked to analyse the way products are made, their purpose and use, in order to better understand their efforts, benefits and impacts. We will sharpen the view for the essential necessities, (real) needs, but also forgotten abilities of users, and try to translate these insights into product concepts.

The topic offers numerous raw-models and references that are worth discovering. There is, however, no set of rules. So it will also be a matter of developing one's own approach to low-tech design.

Deutsch:

Der technische Aufwand mit dem wir unsere Umgebungen und Werkzeuge gestalten übertrifft allzu oft den tatsächlichen Bedarf und verfehlt seinen Gemeinnutzen. So suchen wir im Design nach Lösungen für Probleme, die es ohne eine hochtechnisierte auf Innovation ausgerichtete Welt gar nicht gäbe. Die Anfälligkeit komplexer (unausgereifter) Konstrukte und die eigene Abhängigkeit von diesen wird uns regelmäßig vor Augen geführt, wenn selbst trivialste Vorgänge des täglichen Lebens für uns unverständlich, umständlich, teuer und verschwenderisch geworden sind.

Mit low-tech sollen Gegenentwürfe dazu entwickelt werden. Dabei soll auf komplizierte und teure Technik verzichtet, stattdessen einfache Bauweisen und Wirkprinzipien genutzt werden. Gebrauchsgegenstände und deren gesamter Lebenszyklus sollen untersucht, radikal vereinfacht oder neu interpretiert werden. Diese werden dadurch beispielsweise günstiger, robuster und verständlicher, sind einfach zu warten und zu reparieren. Materialeinsatz und Herstellung werden weniger bedenklich und sind auf lokale Gegebenheiten abgestellt. Vereinfachungen lassen sich aber auch durch neue Konzepte der Nutzung oder des Konsums herbeiführen und Produkte gar obsolet gemacht werden. Low-tech geht dabei über eine rein minimalistische Formensprache hinaus. Es durchzieht den inneren Kern einer Sache und wird sich im Gebrauch bewähren und anpassen müssen.

Im Projekt betrachten wir die Entwicklung und Verwendung von Technologien, Techniken, sowie deren Zusammenhänge im Design. Die Studenten sind aufgefordert die Machart von Produkten, deren Zweckbestimmung und Gebrauch zu analysieren, um dadurch Aufwand, Nutzen und Auswirkungen besser einschätzen zu lernen. Es wird darum gehen das essentiell Notwendigste, (echte) Bedürfnisse, aber auch brachliegende Fähigkeiten von Anwendern zu erkennen und die gewonnenen Erkenntnisse in Produktkonzepte zu übersetzen. Die Thematik bietet zahlreiche Vorbilder und Anlehnungen, die es lohnt zu entdecken. Ein Regelwerk dafür findet sich allerdings nicht. Somit werden eigene Ansätze von low-tech-design entwickelt werden müssen.

Description Module 2 – Material science and technologies

3D design is a universal language that connects a designer with manufacturers. This means that a designer must be able to read, understand and write the rules of 3D design. Digital modeling is not just programming; it is something much broader: it is intrinsic to the design itself and strongly linked to every phase of the creative process.

Through exercises, case studies, lectures, workshops and manual modeling activities, students will learn to analyze their ideas in a mathematical way. With the aim of combining their creativity with the logical rules of 3D modeling.

Italiano

La progettazione 3D è un linguaggio universale che permette di mettere in relazione un progettista/designer con le aziende produttrici. Questo significa che un progettista/designer deve essere in grado di leggere, comprendere e scrivere le regole della progettazione 3D. La modellazione digitale non è solo programmazione; ma è un qualcosa di molto più ampio: è intrinseca alla progettazione stessa e fortemente legata ad ogni fase del processo creativo.

Tramite esercitazioni, casi studio, lezioni, workshop ed attività di modellazione manuale gli studenti impareranno ad analizzare le proprie idee in modo matematico. Con lo scopo di unire la propria creatività con le regole logiche e di modellazione 3D.

Description Module 3 – Theories of cultural consumption

As an integrative part of the ATELIERprojekte, this module asks: What is the role of design today? In doing so, Module 3 introduces students to the social, cultural, and ecological challenges in both global and local contexts. Using contemporary and historical examples of material culture, we will take as a starting point broad themes such as identity, disability, ageing, humanitarian design, craft, childhood, and sustainability. Amidst growing concerns regarding the environment and inequality, this module examines a design practice that self-consciously stands outside the mainstream. By introducing students to design theories and languages when tackling these themes, we explore critical topics while deepening students' understanding of their potential contribution as designers.

Specific educational objectives	Knowledge and understanding - have acquired one's own project methodology in the field of product design. This methodology includes the ability to oversee all phases of design, from the generation of ideas to the realisation of the finished project. Through the integrated teaching of project subjects and subjects of a technical, scientific and theoretical nature, graduates will be able to simultaneously address all these aspects and consider them as synonymous with the development of a project that is successful on a formal, technical, scientific and cultural level.
Lecturer	<i>Module 1 – Product Design:</i> Sebastian Camerer email: sebastian.camerer@unibz.it <i>Module 2 – Digital Modelling:</i> Francesco Sommacal email: francesco.sommacal@unibz.it <i>Module 3 – Theories and languages of product design:</i> Sònia Matos email: Sonia.CabralMatos@unibz.it
Scientific sector of the lecturer	Module 1 – Sebastian Camerer: ICAR/13 Module 2 – Tommaso Sommacal: ICAR/13 Module 3 – Sonia Matos: M-FIL/04
Teaching language	Module 1 – German Module 2 – Italian Module 3 – English
Office hours	Module 1: Tu-Wed: 8:30 – 10:30 by appointment; Module 2: Mo – Tu: 13:00 – 14:00 in order to avoid overlapping the exact time of the appointment will be arranged by email; Module 3: Tu: 09:00 – 11:00. The appointed lecturer for this module will provide nine hours of office time. Note that these hours will be scheduled in conversation with students.
List of topics covered	Module 1: Design of everyday objects for the home, office, person, travel, etc. Products to be produced in eco-sustainable materials that can be produced for the most part with production systems with low technological complexity. Module 2:

	<ul style="list-style-type: none"> - how to move from an idea to the 3D modelling (sketches, form prototypes, digital creation) - digital modelling is an indispensable support of a creative process: <i>when, how and why?</i> - digital modelling vs. craft modelling - how methods to use and how to design in 3 dimensions (use of the Rhinoceros software) - polygon mesh surface, nurbs surface and subD surface - program learning, with all the basic functions for objects-modelling - laser cutting, plotting techniques and rapid design: CNC and 3D printing - how to communicate ideas in an analytic and mathematical manner, using technical tables. <p>Module 3:</p> <ol style="list-style-type: none"> 1. Key topics such as: eco-social design, humanitarian design, design activism, sustainable design, and design for change 2. United Nations Sustainable Development Goals 3. Historical and theoretical perspectives on design for sustainability and social change 4. Academic writing
Teaching format	<p>Module 1 Project work in the atelier.</p> <p>Module 2 Lectures, exercises, workshops, case studies.</p> <p>Module 3 Frontal lectures, reading sessions and discussions on issues related to the course, individual and group exercises.</p>
Expected learning outcomes	<p>Disciplinary competence</p> <p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> - have acquired the basic technical, scientific and theoretical knowledge necessary to realise a project in the field of product design. - have acquired the basic knowledge necessary for further Master's studies in all components of project culture as well as in technical, scientific and theoretical subjects <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> - use the basic knowledge acquired in the technical, scientific and theoretical fields to realise a mature project to recognise the main phenomena of contemporary.

	<ul style="list-style-type: none"> - make use of the skills acquired during the course of study in the event of continuing studies in a Master's degree programme in the field of design and to develop them further. <p>Transversal competence and soft skills</p> <p><i>Making judgements</i></p> <ul style="list-style-type: none"> - Be able to make independent judgements for the purpose of developing their own design skills and in relation to all those decisions (technical, scientific and theoretical) that are necessary to bring a project to completion. <p><i>Communication skills</i></p> <ul style="list-style-type: none"> - present an independently realised project in the field of product design in the form of an installation, orally as well as in writing in a professional manner. <p><i>Learning skills</i></p> <ul style="list-style-type: none"> - have learned a design methodology at a professional level - in the sense of being able to identify, develop and realise solutions to complex design problems by applying the acquired knowledge in the technical, scientific and theoretical fields - in order to start a professional activity and/or continue their studies with a master's degree programme. - have developed a creative attitude and learned how to enhance it and develop it according to their own inclinations. - have acquired basic knowledge in theoretical, technical and scientific subjects as well as a study methodology suitable for continuing studies with a Master's degree programme.
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<p>Assessment</p>	<p>Module 1: Product Design presentation of the project: each candidate will present his work through graphic drawings, a model, photographs, a synthetic text and a concentrate of his work in a booklet. The design path, the final result and all the materials delivered will be evaluated. The presentation of the project will be public.</p> <p>Materials to be delivered: three days before the examination date the following documents must be delivered to the project assistant:</p>
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1. construction drawings;
2. model of proportions or functional model (possibly in 1:1 scale);
3. Max. 3 photos that highlight the characteristics of the final elaborate format 10cm x 15cm, 72 dpi, RGB, jpg and 300 dpi, CMYK, tif;
4. short summary text where the final paper is presented (max 500 characters, doc or rtf);
5. the data need to be concentrated in a booklet in A5 format. The facsimile of the booklet will be delivered and explained to the students one month before the end of the project.

NB: The timely delivery of all the materials being examined is essential for admission to the exam itself.

Module 2

Digital modelling

The final assessment will be the result of work conducted during the whole semester. In particular the following will be evaluated:

- The ability to self-express through technical presentations (2D Tables – 3D models);
- The motivation and the commitment shown during the module and in the atelier;
- The spirit of observation and the curiosity displayed during the semester.
- the ability to develop functional ideas.

Materials to be delivered: three days before the examination date the following documents must be delivered

- technical tables (2D-construction drawings) of your project.

Module 3

In Theories and languages of Product Design, we invite students to immerse in the world around them and to engage with key ideas, debates, and topics. In class, we will present, read, and discuss information with the view of helping students prepare for the formative and summative assignments.

The formative assignment is designed to prepare students for the final summative point. The formative assignment should comprise a supporting statement of 500 words plus a bibliography with at least five sources. In response, students will receive written feedback. Note that the

	<p>formative assessment does not count toward the final course mark; instead, it is designed to help students prepare for the project journal detailed below.</p> <p>For the final exam, there is one summative assessment task. The summative assessment takes the form of a 2000-word project journal that is visually illustrated. The journal is graded against three learning outcomes: Research, Comprehend, Analyse and Communicate. Each learning outcome is weighted equally.</p>
<p>Assessment language</p>	<p>The same as the teaching language</p>
<p>Evaluation criteria and criteria for awarding marks</p>	<p><i>By exam's date, each student must upload on the Microsite of the faculty detailed documentation of the work done during the course.</i></p> <p><i>http://portfolio.dsgn.unibz.it/wp-admin</i> <i>Documentation is an integral part of the exam. The documentation must include visual documentation and an abstract of the project.</i></p> <p>The final assessment is based on the content of all the exercises according to the following criteria:</p> <p>Module 1 Product Design The quality and clarity of the research, the creativity and the originality of the design concept, the quality and clarity of the design process, of the development and realization of the project such as the professionalism and consistency of the presentation and documentation.</p> <p>Also contributing to the final evaluation will be the initiative and the personal commitment in the atelier, in the research and the study and the participation in the project or the continuity, the attention and the curiosity demonstrated.</p> <p>Module 2 Digital modelling</p> <ul style="list-style-type: none"> - (25/100) participation, punctuality, spirit of observation and reasoning skills to solve technical problems - (25/100) ability to self-express through technical presentations (2D tables – 3D models) - (25/100) 2D-construction drawings of the project idea - (25/100) quality of the end of semester project in relation to the digital modelling module.

	<p>Module 3 Theories and Languages of Product Design (25/100) Research: Identify relevant sources of information relating to your chosen topic. (25/100) Comprehend: Evaluate and discuss ideas and debates relating to your chosen topic. (25/100) Analyse: Demonstrate informed knowledge of a chosen topic. (25/100) Communicate: Convey pertinent ideas using written and visual information effectively.</p>
<p>Required readings</p>	<p>Module 1: -</p> <p>Module 2: -</p> <p>Module 3: Students can find suggested readings for this module in the Library Reserve Collection. Additional readings will be communicated in response to the formative submission point and pending students' interests.</p>
<p>Supplementary readings</p>	<p>Module 1: -</p> <p>Module 2: -</p> <p>Module 3: -</p>