Syllabus
Course description

Course title	**Project Product Design 2b** **The White Marble Project. In Cooperation with Lasa Marmo.**
Course code	97093
Scientific sector	Module 1: ICAR/13 Module 2: ICAR/13 Module 3: M-FIL/04
Degree	Bachelor in Design and Art (L-4)
Semester	Winter semester 2022/23
Year	2nd and 3rd
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 the Project Product Design 1; to have certified the language level proficiency B1 in the course language in years following the first.
Maximum number of students per class	20

Course description	*The course belongs to the class "caratterizzante" (module 1 and 2) and "affine integrativa" (module 3) in the major in Design.* ***Description Module 1 – Product Design:*** **The White Marble Project. In Cooperation with Lasa Marmo.** Im Wintersemester 2022/23 beschäftigen wir uns mit dem weißen Laaser Marmor, einem 500 Millionen Jahre alten metamorphen Gestein aus dem Jennwandmassiv des Vinschgauer Nörderbergs, am Rande des Nationalparks Stilfserjoch. Als einer der wertvollsten Bodenschätze des an mineralischen Rohstoffen eher armen Südtirols wird der weiße Marmor im Vinschgau seit Jahrhunderten, vor allem in Laas und Göflan, abgebaut. Er wird als Baustoff und Dekorationsgestein tonnenweise in die ganze Welt exportiert und stellt dennoch nur eine begrenzte

Ressource dar, die in wenigen Generationen erschöpft sein wird.
Weil der Laaser Marmor so reinkristallin und weiß wie kaum ein anderer auf der Welt strahlt und zudem als wesentlich wetterbeständiger gilt, scheint er als Werkstoff zeitlos und kaum Moden unterworfen zu sein.
Dieser Marmor hat die Region geprägt und ist bis heute in seiner Bedeutung mehr ein Kultur- als ein Wirtschaftsgut. Von seinem Umwelt- und ressourcenschonenden Abbau wird folglich auch die Gegenwart und die nähere Zukunft der Kulturlandschaft und Marmorindustrie im Vinschgau abhängen.
Im Projekt analysieren wir zum einen die Laaser Marmorindustrie im Kontext ihrer landschaftlichen und infrastrukturellen Einbettung. Zum anderen untersuchen wir die Wertschöpfungskette der Materialgewinnung vor Ort: den Marmorabbau im Bruch, den Abtransport der tonnenschweren Blöcke ins Tal, die Verarbeitung zu Platten und Produkten von unterschiedlicher Marmorqualität im Werk sowie anfallende Reststoffe, wie Bruch- und Pflastersteine, Kiesel und Sand.
Projektziel ist es, ein kritisches Problembewusstsein sowie ein umfassendes Materialverständnis für Marmor als natürlichen Rohstoff und Werkstoff zu entwickeln, um daraus fortschrittliche Lösungsansätze und innovative Produktideen abzuleiten.

Projektpartner: Lasa Marmo
www.lasamarmo.it

The White Marble Project. In Cooperation with Lasa Marmo.

In the winter semester of 2022/23, we will engage with the White Lasa Marble, which is a 500-million-year-old metamorphic stone from the Jennwand massif of the Vinschgau Nörderberg, located on the edge of the Stilfserjoch National Park.
As one of the most valuable natural resources of South Tyrol, which is otherwise rather poor in mineral raw materials, white marble has been quarried in the Vinschgau Valley for centuries, especially in Laas and Göflan. It has been exported by the ton as building material and decorative stone all over the world and yet it only represents a limited deposit that will be exhausted within just a few generations.
Because Laas marble shines purely crystalline and white in a way which is hardly surpassed by any other in the world and is also considered to be significantly more weather-resistant, it is quite timeless as a material and

hardly subject to any fashion. This marble has helped shape the region and is still more of a cultural rather than economic resource. Consequently, the present and near future of the cultural landscape and marble industry in the Vinschgau Valley will also depend on its environmentally friendly and sustainable extraction.
In the project, we will analyse the marble industry in Lasa in the context of its landscape and infrastructural embedding. We will also be investigating the value chains of material extraction on site: The mining of marble in the quarries, transporting blocks weighing tons down to the valley, processing them into slabs and products of various levels of marble quality in the factory as well as the resulting residual materials like rubble and paving stones, pebbles and sand.
The aim of the project is to develop a critical problem awareness and a comprehensive understanding of marble as a natural resource and building material in order to derive advanced design solutions and innovative product ideas.

Project partner: Lasa Marmo
www.lasamarmo.it

Description Module 2 – Digital Modelling
There are two ways to approach a project when materials are at the front end. In the first one, the designer develops the project, test, and prototype with analogic and digital tools, and afterward selects the right material(s) which fits the project specifications (Ashby & Johnson, 2002). In the second one, the designer starts with the material(s) in hand, and then, through a deep understanding of the properties and qualities the material offers, the project is built (Rognoli & Ayala-Garcia, 2021). The different languages with which the designer communicates the project intention and develops a product begin with a physical recognition of the materials through a process of tinkering (Parisi et. al, 2017). Afterward, the designer applies the skills and begins hands-on work to construct models and prototypes to test in real-time the intentions for the project. Different from the classical approach, such models and prototypes include direct contact with the material(s) of the project, allowing to gain a better understanding of the possible directions the project may take. Once everything is getting traction, and the product begins to gain form and language, it is time for digital tools to speed up and refine the project. In this module, we aim to guide the students in the development and refinement of the project by exploring both experimental tools and digital tools. We

	will not concentrate only on the digitalization of the project, but we will explore possibilities to expand barriers to production and manufacturing by understanding the status quo of production and blending it with new tools available. ***Description Module 3 – Theories and languages of product design*** The overall aim of the course is to improve the theoretical competences of the students, starting from the design practice, through successive extending loops. Three main trajectories will be suggested around the material at the center of the atelier: the marble. The first track is about the properties of the material in terms of meaning potentials and uses in the recent practice of product design (relationship between material and product communication). The second will be about sustainability as a value, connecting the ongoing promotional discourses to what is behind, like the site of production, with the issues related to the marble extraction. The third will be more general, about the anthropogenic interactions between humans and landscape, considering the way extraction is participating to the modification of the morphology of mountains in the frame of contemporary debates about the anthropocene.
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 of practical 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.
	- Understanding the tensions inside the general concept of sustainability, its contradictions in communicative applications, its specificities in relationship to marble production - Understanding some dimension of the complexity in product communication at the crossing of innovation, sustainability and aesthetics.

Lecturer	***Module 1 – Product Design*:** Klaus Hackl e-mail klaus.hackl@unibz.it

	webpage https://www.unibz.it/de/faculties/design-art/academic-staff/person/37147-klaus-hackl ***Module 2 – Digital Modelling:*** Camilo Ayala Garcia e-mail tbd webpage https://www.unibz.it/de/faculties/design-art/academic-staff/person/47021-camilo-ayala-garcia ***Module 3 – Theories and languages of product design*** Giacomo Festi e-mail Giacomo.Festi@unibz.it, tel. +39 0471/051000, webpage https://www.unibz.it/en/faculties/design-art/academic-staff/person/40076-giacomo-festi
Scientific sector of the lecturer	Module 1 – Klaus Hackl: ICAR/13 Module 2 – Camilo Ayala Garcia: ICAR/13 Module 3 – Giacomo Festi: M-FIL/04
Teaching language	Module 1 – German Module 2 – English Module 3 – Italian
Office hours	Module 1: Mo., 16.00 - 20.00 & Tu., 14.00 - 16.00 Additional office hours by appointment only. Module 2: Tu– We: 14:00 – 16:00 in order to avoid overlapping the exact time of the appointment will be arranged by email. Module 3: Mo – 16.00 – 18.00 in order to avoid overlapping the exact time of the appointment will be arranged by email.
List of topics covered	Module 1: «The White Marble Project» covers many methodological and professional aspects of contemporary, and multifaceted design processes, from: - raising critical questions to profound investigation, - hypothetical assumptions to the formulation of design concepts, - inspiration to ideation and realisation, - diversifying sketches to technical drawings, - mock-up creation to prototyping, - intermediate to final presentation and project communication. - questions of project planning to issues related to the cooperation with workshops and industrial project partners.

	Module 2: - How to create an idea by understanding the material properties and qualities (DIY-Materials Experimentation). - Move from an idea to the project (sketches, low-res prototypes, digital demonstrators). - Project evolution through iteration (hands-on with materiality and digital construction of the project with CAD tools) - Digital & Craft modelling (hi-res prototypes). - Fab-Lab validation and testing of alternatives. - Use of available tools to construct a proper product narrative. - Construction of a project (product) prototype for delivery (engineering teams or company stakeholders). Module 3: - How to interpret the different ways we give meaning to an object? A conceptual mapping - Understanding materiality from the perspective of a language of products; - Approaching sustainability as a concept: its internal tensions and translations in communication; - Trends in industrial design communication: the case of marble - Anthropogenic impact and the critical zone: what about marble extraction?
Teaching format	Module 1: Excursions and field studies, short lectures, expert talks, exercises, individual and group reviews, guest critics, discussions and workshops. Module 2: Short Lectures, experimentation, workshops, case studies, Reviews of work. Module 3: Frontal lecture, student presentations of essay and class discussion, guided assignments.

Expected learning outcomes	**Disciplinary competence** *Knowledge and understanding* - have acquired their own project methodology in the field of product design, from the phase of planning to the phase of realisation of the project. - have acquired the basic practical and theoretical knowledge necessary to realise a project in the field of product design. - have acquired the basic knowledge to be able to turn a critical eye to their own work and to deal with contemporary complexity.

- have acquired the basic knowledge necessary for further Master's studies in all components of project culture as well as in theoretical subjects.
- Have acquired hands-on and experimental approach necessary to realise a project in the field of product design.

Applying knowledge and understanding

- plan, develop and realise a project in the field of product design.
- use the basic knowledge acquired in the technical, scientific and theoretical fields to realise a mature project.
- be able to finalize the creation of an accomplished project in the field of product design, thanks to the basic knowledge acquired in the practical and theoretical fields.
- recognise the main phenomena of contemporary society, to observe them critically, also from an ethical and social point of view, and to elaborate appropriate solutions at the level of a design proposal/response.
- 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 product design and to develop them further.

Transversal competence and soft skills

Making judgements

- Be able 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 project to completion.
- Be able to make independent judgements, both in the critical evaluation of their own work and in their ability to use the right interpretative tools in those design contexts in which they will work and/or continue their studies, also considering ethical and social aspects.

Communication skills

- 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.
- to professionally communicate and substantiate one’s own decisions and justify them from a formal and theoretical point of view.

	Learning skills - have learned a work methodology at a professional level - in the sense of being able to identify, develop and realise solutions to complex problems by applying the knowledge acquired in the practical 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 and practical subjects as well as a study methodology suitable for continuing studies with a master's degree programme.

Assessment	**Module 1**: The assessment will be based on: - the personal motivation, curiosity and overall design skill acquired, reflected, and applied by the student during the semester. - the quality, autonomy, and coherence of the project output as visualised, argued, and communicated during individual reviews, group meetings, mid-term presentation and the final exam presentation. **Module 2**: The assessment will be based on: - the personal motivation, engagement with the project and overall design skills acquired, reflected, and applied by the student during the semester. - the quality, autonomy, and coherence of the project output as visualised, argued, and communicated during individual reviews, group meetings, intermediate presentations and the final exam presentation. **Module 3**: The assessment will be based on: - the quality of the theoretical insertions in the project, through assignments and the writing of a final paper; - the personal engagement and participation to the different phases of the course
Assessment language	The same as the teaching language
Evaluation criteria and criteria for awarding marks	*By exam's date, each student must upload on the Microsite of the faculty detailed documentation of the work done during the course.*

	http://portfolio.dsgn.unibz.it/wp-admin *Documentation is an integral part of the exam. The documentation must include visual documentation and an abstract of the project.* **Module 1** The evaluation criteria - **100%** in total - in product design will be distributed in the following way: A maximum of **20%** can be awarded, for the personal motivation, team spirit, and overall design skills acquired, and applied during the entire semester. A maximum of **30%** can be awarded, for the quality and originality of the design work carried out and presented in the mid-term presentation. A maximum of **50%** can be awarded for the overall quality and autonomy of the semester project´s final result, as it was developed, realised, visualised, argued and communicated in the exam presentation as well as the accompanying project documentation booklet. For **Module 3**, students will prepare a final dossier, like a paper, collecting and refining the different texts produced during the course, according to the instruction delivered on Teams.
Required readings	**Module 1**: **General reading / Allgemeine Lektüre:** - Augart, Isabella; Wenderholm, Iris (Hrsg.): Steinformen. Materialität, Qualität, Imitation. Berlin, 2019 - Erni, Peter; Marchand, Christophe: transfer. erkennen und bewirken. Lars Müller, 2006 - Latour, Bruno; Weibel, Peter (Hrsg.): Critical Zones. The Science and Politics of Landing on Earth. MIT Press, 2020 - Moravánszky, Ákos: Metamorphism. Material Change in Architecture. Birkhäuser, 2018 - dt.: Stoffwechsel. Materialverwandlung in der Architektur. Birkhäuser, 2018

- Raff, Thomas: Die Sprache der Materialien. Anleitung zu einer Ikonologie der Werkstoffe. Waxmann Verlag, 2008

- Rübel, Dietmar; Wagner, Monika (Hrsg.): Materialästhetik. Quellentexte zu Kunst, Design und Architektur. Reimer Verlag, 2017

- Rübel, Dietmar; Wagner, Monika (Hrsg.): Lexikon des künstlerischen Materials. Werkstoffe der modernen Kunst von Abfall bis Zinn. C.H.Beck, 2019. Marmor, S. 174-181

- Wagner, Monika: Marmor und Asphalt. Soziale Oberflächen im Berlin des 20. Jahrhunderts.
- Wagenbach Verlag, 2018

- Wagner, Monika; Friedrich, Michael (Hrsg.): Steine. Kulturelle Praktiken des Materialtransfers. DeGruyter 2017

- Weltzien, Friedrich; Scholz, Martin (Hrsg.): Die Sprachen des Materials. Narrative - Theorien - Strategien. Reimer Verlag 2016

Geology / Geologie

- Pfiffner, Adrian: Geologie der Alpen. UTB Verlag, 2015

- Stingl, Volkmar; Mair, Volkmar: Einführung in die Geologie Südtirols. Bozen, 2005

Marble as a material / Marmor als Material, Bau- und Werkstoff

- Barry, Fabio: Painting in Stone. Architecture and the Poetics of Marble from Antiquity to the Enlightenment. Yale University Press, 2020.

- Dubarry de Lassale, Jacques: Marmor. Vorkommen, Bestimmung, Verarbeitung. Deutsche Verlags-Anstalt, Stuttgart, 2002

- Gamboni, Dario; Richardson, Jessica; Wolf, Gerhard (Hrsg.): The Aesthetics of Marble. From Late Antiquity to the Present. Hirmer Verlag, 2021

- Mannoni, Luciana und Tiziano: Marmor. Material und Kultur. München, 1980
(it.: Il Marmo. Materia e cultura. Genova, 1978)

- Mannoni, Montani, Pinzari, Pucci e Ricci: *Il marmo nel mondo*, Società Editrice Apuana, 1989

- Price, Monica: Decorative Stone. The Complete Sourcebook. Thames & Hudson, 2007

- Schulz, Ansgar: Manual of Natural Stone. A traditional material in a contemporary context. Edition Detail, 2020
  dt.: Atlas Naturstein. Klassischer Baustoff in zeitgemäßer Anwendung.

Marble from South Tyrol / Südtiroler Marmor

- Flora, Andreas; Lanzinger, Helmut: bianco - Entwurfsstudie zum Wertschöpfungspotential des Marmorabbaus für die Ortschaft Laas. Innsbruck, 2007

- Köll, Lois: Laaser Marmor. Gewinnung und Verwertung. Tiroler Wirtschaftsstudien. Innsbruck, 1964

- Telfser, Hansjörg: Marmor Spurensuche. Vinschgaus Marmor zwischen Kunst- und Spekulationsobjekt, Kofel, Schlanders, 2007

- Unterwurzacher, Michael [Hrsg.]: Sterzinger Marmor. Über Eigenschaften und Kulturgeschichte des bekannten Südtiroler Marmors aus dem Ratschings- und Ridnauntal. Innsbruck Univ. Press, 2015

- Unterwurzacher, Michael: Tiroler Marmorbaue und bedeutende Vorkommen. S.205-220, in: Veröffentlichungen des Tiroler Landesmuseums Ferdinanum 87/2007, Innsbruck, 2007

- Waldner, Franz: Laaser Marmor. Südtirols edelster Naturstein. Athesia Verlag, 2008

- Wittmann, Martin: Das Geschäft mit der Endlichkeit. S. 8-15, in: Grossarth, Jan (Hrsg.): Nord & Süd. Leben, Arbeit, Wirtschaft in Südtirol. Edition Raetia, 2015

Module 2:

- Terstiege, G. (2009). The Making of Design. From the First Model to the Final Product. Basel: Birkhäuser.

	- Ashby, M., & Johnson, K. (2002). Materials and Design: The Art and Science of Material Selection in Product Design. Oxford: Butterworth-Heinemann. - Ashby, M.F. (2013). **Module 3**: - Finbarr Barry Flood, "God's Wonder': Marble as Medium and the Natural Image in Mosques and Modernism", *The Bard Graduate Center: Decorative Arts, Design History, and Material Culture*, 2016. - Jean-Marie Floch, "Opinel: intelligence at knifepoint", in id., Visual Identities, New York, Palgrave, 2001. - Tim Ingold, "The textility of making", *Cambridge Journal of Economics*, 2010, 34, 91–102. - Brendon Larson, *Metaphors for Environmental* - *Sustainability. Redefining Our Relationship with Nature*, Yale University Press, 2011.
Supplementary readings	**Module 1**: Please refer to the reading list above! **Module 2**: - Anderson, C. (2012). Makers. New York: Crown Business. - Ashby, M., (2005). Materials and the Environment 2nd Edition. Oxford, UK: Butterworth Heinemann. – - Ayala-Garcia, C (2015) The Basis of Processes - Experimenting with Food to Re-Shape the Industry Language. In: Cumulus Milan-The Virtuous Circle Proceedings (pp.84). ISBN: 978-88-386-7485-3 – - Ayala-Garcia, C (2014). Experimenting with Materials – A Source for Designers to Give Meaning to New Applications. In: The colors of care: Proceedings of the 9th International Conference on Design and Emotion 2014 (pp. 408-417). ISBN: 978-958-774- 070-7 – - Bardzell, S., Rosner, D.K., Bardzell, J. (2012). Crafting quality in design: integrity, creativity, and public sensibility. In: Proceedings of the Designing Interactive Systems Conference (DIS '12), ACM, New York, NY, USA, pp. 11–20. - Bean, J., Rosner, D. (2012). Old hat: craft versus design? In:

Interaction, vol. 19(1), ACM, New York, NY, USA, pp. 86–88.

- Bettiol, M., Micelli, S. (2014). The hidden side of design: the relevance of artisanship. In: Design Issues 30 (1) (Winter 2014), pp. 7–18.

- Brownell, B. (2015). DIY Design Makers Are Taking on Materials. Retrieved from https://www.architectmagazine.com/technology/diy-design-makers-are-taking-on-materials_o

- Chapman, J. (2005). Emotional Durable Design. London: Earthscan. - Cuffaro, D. (2006) Processes, Materials, Measurements. Gloucester, MA: Rockport. New York, NY: Perennial.

- Diez, T. (2012). Personal Fabrication: Fab Labs as Platforms for Citizen-Based Innovation, from Microcontrollers to Cities. Nexus Network Journal, 14(3), 457-468. doi: 10.1007/s00004-012-0131-7

- Gershenfeld, N. (2012). How to Make Almost Anything. The Digital fabrication revolution. Foreign Affairs, (November/December). - Kuznetsov, S. Paulos, E. (2010). Rise of the expert amateur: DIY projects, communities, and cultures. In: Proceedings of NordiCHI '10, the 6th Nordic Conference on Human– Computer Interaction: Extending Boundaries. ACM, New York, NY, USA. pp. 295– 304.

- Lukens, J. (2013). DIY Infrastructure. (Doctoral dissertation). Georgia Institute of Technology. Atlanta. Retrieved from institutional repository.

- Mäkelä, M. (2007). Knowing Through Making: The role of artefact in practice-led research. Know Techn Pol, 2007(20), 157-163.

- Micelli, S. (2011). Futuro artigiano: l'innovazione nelle mani degli italiani [Future artisan: Innovation in the hands of Italians]. Venezia: Marsilio.

- Mota, C. (2011). The rise of personal fabrication. In: Proceedings of the 8th ACM conference on creativity and cognition, ACM.

- Nimkulrat, N. (2012). Hands-on Intellect: Integrating craft practice into design research. International Journal of Design, 6(3), 1- 14.

	- Rognoli, V. Ayala-Garcia, C. (2021). Defining the DIY-Materials approach. Editor(s): Owain Pedgley, Valentina Rognoli, Elvin Karana. Materials Experience 2, Butterworth-Heinemann, Pages 227-258. - Rognoli, V., Ayala-Garcia, C. (2018). Material activism. New hybrid scenarios between design and technology. In: Cuaderno 70 | Centro de Estudios en Diseño y Comunicación, Universidad de Palermo. pp 105-115 - Rognoli, V., Ayala-Garcia, C., Parisi, S. (2016). The emotional value of Do-It-Yourself materials. In: Celebration & Contemplation. Proceedings of the 10th International Conference on Design and Emotion 2016 (pp. 633-641). ISBN/EAN: 978-94-6186-725-4 - Rognoli, V., Bianchini, M., Maffei, S., Karana, E., (2015). DIY Materials. Materials and Design, 86(2015), 692-702. - Parisi, S., Rognoli, V., & Sonneveld, M. (2017). Material Tinkering. An inspirational approach for experiential learning and envisioning in product design education, The Design Journal, 20:sup1, S1167-S1184 - Tanenbaum, J.G., Williams, A.M., Desjardins, A., Tanenbaum, K. (2013). Democratizing technology: pleasure, utility and expressiveness in DIY and maker practice. In: Proceedings of SIGCHI Conference on Human Factor in Computing System, CHI 2013, pp.2603-2612, April 27–May 2, Paris, France. - Thompson, R. (2007) Manufacturing Processes for Design Professionals. London: Thames & Hudson. - Thompson, R. (2017) The Materials Sourcebook for Design Professionals. London: Thames & Hudson. - Vezzoli, C. (2018). Design for environmental sustainability. Life cycle design of products. Second edition. London: Springer. **Module 3**: *A list of supplementary readings will be available on Teams as soon as the course will start.*