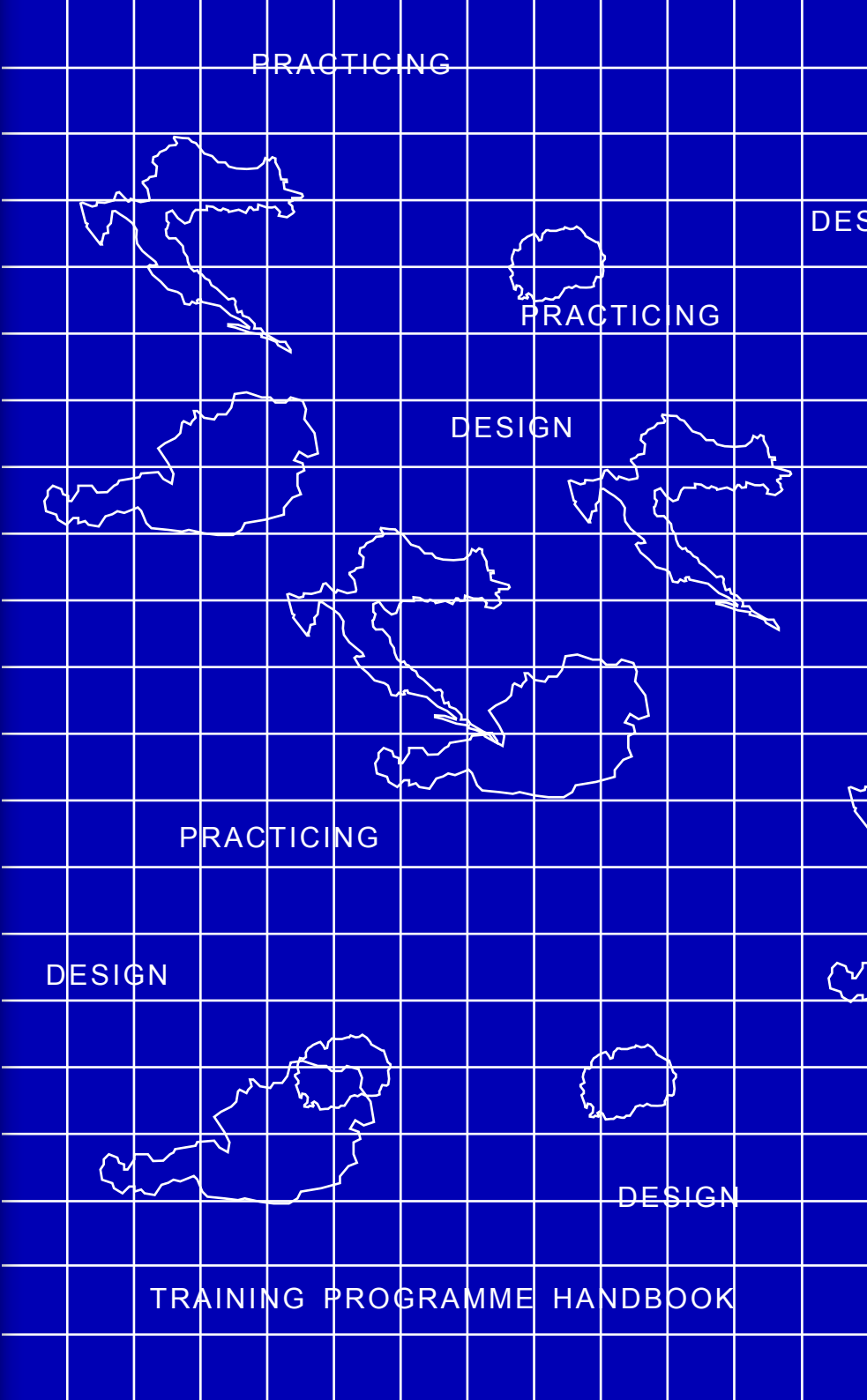
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PRACTICING DESIGN 1.0
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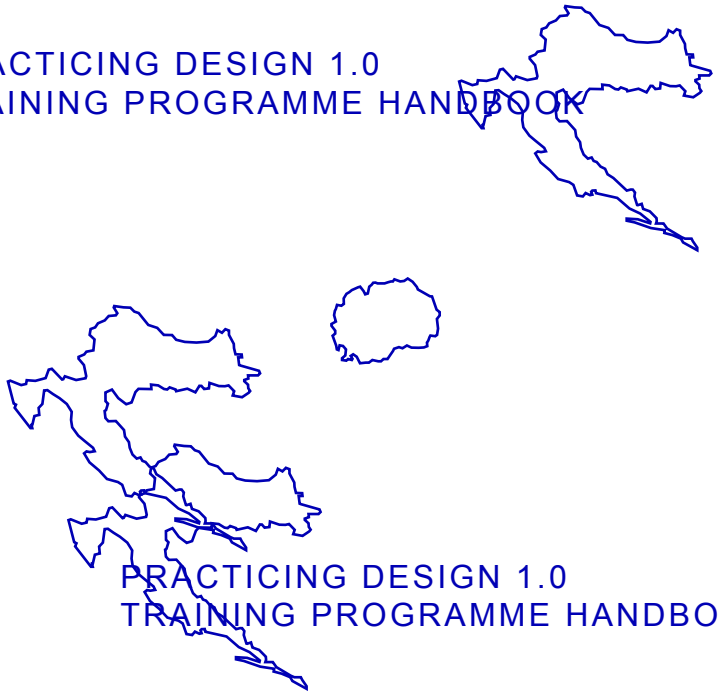

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CONTENT

FOREWORD

Design education is the main mechanism through which designers should gain the knowledge, skills and competencies that will enable them to cope with the challenges of the 21st century. From the public policy perspective, design education is expected to implement commercially and internationally orientated approach in its further design study programmes, to develop collaborations between business, vocational organisations and other schools or disciplines, to advance the understanding of design through multidisciplinary courses, to foster interaction between design managers, organizational executives, educators, and public policy makers and to deliver study programmes which will provide students with relevant skills and knowledge in line with real demand of the labour market. Furthermore, in order to meet the constantly changing needs of the labour market, educational institutions need to provide relevant and lifelong learning opportunities.

But since higher education institutions of design are confronted with the phenomena of *massification*, they are becoming entities that are hard to manage, too complicated both for studying and teaching. Therefore, it is hard for them to find efficient techniques to keep pace with the labour market, the economy, and other important external variables and to implement them fast enough in their educational programme. As design educational institutions are faced with financial and bureaucratic constraints in their attempts to provide additional skills and competencies, they are considering alternative ways of

training students in deficient disciplines or skills. For example, one of the effective alternatives may be the collaboration with vocational design organizations which could be the carriers of additional training and educational programmes, because these organizations possess the ability to respond and adjust faster to the necessary changes in design education and the nature of design itself, which nowadays needs constant redefinition.

One of the examples of the alternative ways to overcome the mismatch between skills and competencies delivered through formal education and the ones needed in the labour market and the real life professional design practice is the *Practicing Design 1.0 Training Programme* presented in this handbook. As a final result of the collaborative venture of designers, vocational, educational and business organizations, this training programme represents a fine example of the way to overcome the shortcomings of formal design education. The educational framework of this training programme acknowledges all the main challenges design profession is facing today, with the focus on mutual education and productive communication between and with all stakeholders interested in the improvement of designer's knowledge, skills and competencies. The educational framework of the *Practicing Design 1.0 Training Programme* provides additional professional design competencies, especially the ones concerning business and social environments, but also helps business and other organizations, who often do not really know what they need in terms of design, to understand the full potentials of design. Therefore, for companies that are interested in increasing their knowledge about design in order to utilize its full potential of adding value to their business, this handbook can serve as a kind of road map how to do that.

Apart from the multidisciplinary and integrative approach to design education, the focus on innovations, functional quality, and socially and economically friendly design represent the

main features of this training programme. But above all, the focus on practical learning which is designed to simulate the main phases of a design process and real life situations that design professionals' face present the highest value added element of the *Practicing Design 1.0 Training Programme*.

Prof. Biserka Komnenić, PhD

INTRODUCTION

The following handbook presents the *Practicing Design 1.0 Training Programme*, as the final result of the second phase of the project *Practicing Design.* The entire project *Practicing Design* is an international collaborative venture of three European vocational design organizations: Croatian Designers Association (Croatia), designaustria (Austria), Public Room (Macedonia); two educational institutions: VERN' University of Applied Sciences (Croatia), Faculty of Art and Design, European University – Republic of Macedonia; two business companies: Prostoria d.o.o. (Croatia) and Zavar d.o.o.(Macedonia). The project is co-funded by ERASMUS+ programme. It promotes rethinking and undertaking innovative practices in education and training in design on the national, regional and international level thus raising the awareness among all stakeholders and the public of the need for enhancing the quality and relevance of the current design education and need for establishing links with the professional world. In the long run the project will enable the mentioned organizations to position themselves as relevant stakeholders in international discussions about design education. The main purpose of the entire project *Practicing Design* is to find new and innovative design education practice in order to bridge the gap between education and professional work and to upgrade designers' skills necessary for better socio-economic outcomes. To address these needs, the project has developed activities to integrate design and relevant cross disciplinary skills into a training programme

with the focus on practical experience, particularly through the establishment of closer and more intensive collaboration between vocational, educational and industry stakeholders.

The final output of the first phase of the project was the theoretical and empirical study *Rethinking Design Education.* The main purpose of this study was to detect skills and knowledge needed to improve employability that are not provided by existing design curricula. Through identification of the main challenges facing the design practice and education in the 21st century and through empirical research of the existing skills discrepancy in design curricula in Croatia, Austria and Macedonia, the study provided guidelines as a framework for the second output of the project – *Design Training Programme*. The summarised guidelines from the study are:

— Design education should be carried out within an interdisciplinary context, which will embrace all necessary knowledge, skills and competencies needed for future successful professional practice.
— Empirical evidence shows that skills, competencies and knowledge discrepancy is mostly related to the problems and demands of the real life design practice and designers' professional work and to a lesser extent with practical design knowledge and competencies. Those skills, competencies and knowledge particularly refer to: the general managerial knowledge, social skills, managing design action, entrepreneurial skills, the ability to display overall skill in an execution process, design methodology, manufacturing and 3D modelling, the knowledge of and insight into the profession, the knowledge of sustainability, the knowledge of financial performance, marketing, intellectual property rights, product development and placement on the market, design production information,

skills in applying for and information on public grants, business plans and market analysis, technical knowledge and sources of information about materials and techniques, portfolio development skills, negotiation techniques and project management, communication and presentation skills, design thinking, brand development, product distribution, time management, entrepreneurial psychology and teamwork skills.
— Design education should be more practice oriented and educational institutions should establish close and more intensive cooperation with the external environment, with the aim of providing students with work on specific projects. Furthermore, R&D collaboration with the industry is the key factor in methodological exercise in design studies. This approach enables students to experience solving real-world product design problems, working as part of an interdisciplinary team, and communicating their work in written and oral form.
— Since the evidence suggests that educational institutions in their attempts to provide additional skills and competencies are faced with financial and bureaucratic constraints that create a gap, or lack of professionals from other specialist disciplines, design education institutions should consider finding alternative sources for financing those specialist and alternative ways of training students in deficient disciplines or skills. For example, collaboration with vocational design organizations that may be carriers of training and are more flexible to the changing nature of design, which nowadays needs a constant redefinition.
— There is a need for finding more effective ways of transferring economic knowledge to design students. Design students cannot be expected to be as interested in the economic issues, as the students of economics. Therefore,

the transmission of economics and business knowledge should be strongly linked with the context of design, with a lot of practical and interesting examples from design business practices.

— Designers, business representatives and relevant stakeholders use different *languages* of professional expression. From the business client's perspective, the ability to think in business terms and so-called soft-skills are seen as crucial for productive communication between designers and business actors.

The results of empirical research have also shown that all survey and focus groups strongly believe that practice-based learning is a crucial mechanism for becoming a good designer. The practice-based learning has proved to be an important issue, given that participants from the Business Actors Focus groups argued that designers, upon leaving the design school, lack practice and understanding of business skills, and that they need additional training in order to understand the ways in which business world functions. Furthermore, information from Focus groups has showed that there is consensus in the opinion that designers, business actors and other stakeholders need to better educate each other in order to achieve more productive communication. In addition, the need for interdisciplinary knowledge and integrative approach to design education has been emphasized. As for the main challenges of the design profession in the 21st century, there is a consensus of opinion that innovations, functional quality and social and economic friendly approach is the crucial factor for the future of the design practice.

The findings from the study served as a starting point for launching the second phase of the project *Practicing Design 1.0 Training Programme*. The envisaged impact of the second phase of the project and long-term benefits for the participating organizations are that they can implement the developed Design Training Programme as a new product which can enhance the quality and relevance of their educational offer.

GENERAL DESCRIPTION AND METHODOLOGY OF THE CREATION OF THE TRAINING PROGRAMME

Since the finalization of the study *Rethinking design education*, in June 2016, the project partners have started the implementation of the second phase of the project. Their main task was to propose a design training programme which addresses the gap between education and professional work and existing skills discrepancy in the design curricula in Croatia, Austria, and Macedonia and upgrade designers' skills necessary for better socio-economic outcomes. The *Practicing Design 1.0 Training Programme* has been created through the collaboration of vocational design organizations, educational institutions and production companies from Croatia, Austria and Macedonia. A pilot Training Programme was organized and conducted in all three countries according to previously established methodology, but also taking into account the local context and specificities. In the summer/autumn of 2016, groups of young designers were involved in an intense training programme aimed at gaining new skills and knowledge crucial to their professional work. The final results of the training programme are the manufactured prototypes for different products designed by 3–4 teams in each country – in line with the brief given by production companies – partners in the project. In Croatia the outcome was a solution for *home office*, in Austria *solid wood furniture* and in Macedonia a *side table*.

Preparation and planning phase for the creation and implementation of the training programme lasted two months. It started with planning of the phases of the design process (objectives, methods, goals, content, timeline, facilities, etc.). This phase included initial joint and individual meetings with all parties to be involved in the development and execution of the training programme. The main goal of these activities was the establishment of a detailed plan of the complete training programme process, based on the input and understanding of the project context of all involved parties. The input was used by the partners to decide upon their working methodology. Project teams from all three countries established guidelines and expectations, specified resources and key deadlines. They also formed interdisciplinary teams of educators, including project managers, mentors, teachers and trainers and delegated responsibilities. Overall and specific goals of the training program were defined, together with the content, assignments and outputs. Furthermore, teaching materials were developed and harmonized, and financial and risk management plans defined. Partners also agreed on the details of open call for participants, selection of participants, interdisciplinary approach of the training programme and its content, patterns of specific programme sessions, selection of educators and mentors, location, etc. Since the interdisciplinary focus of the training programme was one of its key features, it was decided that the students could also be from different disciplines.

METHODOLOGY FOR DEFINING CONTENT OF THE TRAINING PROGRAMME AND TEACHING AND LEARNING APPROACH

The results of the empirical research of the existing skills discrepancy in the design curricula in Croatia, Austria, and Macedonia and guidelines from the study *Rethinking Design Education* served as a general framework for designing the training programme structure, content and methodology of transferring knowledge and skills. Also, the input from all partners involved was used to define all relevant elements of the training programme. It was important that all partners understand the context and purpose of the training programme, which they were able to develop. Therefore, opinions from all three relevant perspectives: designers', educators' and business' had been taken into account and later articulated in the structure and content of the training programme. In order to gather information and exchange opinions and knowledge, working teams conducted group discussions, meetings and field research. All this was done through close collaboration, co-learning and co-creation of interdisciplinary working team members. This implied design experts and educational staff understanding of the essentials of business policies of partner companies and their needs and opportunities for design development. From the partner companies' side it included the understanding of the essentials of design process and design thinking approaches.

For the purpose of helping partner companies to articulate a design brief, observations of the company's market potential, contemporary trends in design and the identification of company's market and brand opportunities were conducted. Furthermore, for the purpose of the clear determination of the student's final project assignment, possible company's benefits from the training programme such as strategies to acquire

customers, issues regarding product demand and approaches for solutions development were analysed.

The partners agreed that the training programme should be designed on the following premises:

— It should simulate situations from designers' real professional business practice
— The entire process of the training programme implementation should be carried out in an interdisciplinary context, both concerning the content and structure of the programme, structure of participants, as well as the educational staff and mentors.
— Interdisciplinary content of the training programme should enable participants to simultaneously acquire knowledge and skills from the design and business topics. The term *business* should be understood in regard to specific scarce skills and knowledge detected in the study *Rethinking design education*, which includes social skills, managerial skills, and entrepreneurship skills. The term *design* should be understood mainly in relation to product design development, to which integrative and holistic approach to design process is applied (anthropology, ecology, ergonomics, etc.).
— Design training programme should be strongly practice based.
— Final outcome of the training programme in addition to the acquired knowledge, skills and competencies should be the production of a prototype as the final project assignment in association with partner companies. Teaching and learning should be based on collaborative, participatory, and interactive approach with the main focus on practice.

The selection of the students' final project task was based on the goals of production companies (i.e. intention to introduce a new product, or a new range of products, etc.) and advice from other partners involved. Based on the specific findings and experiences in each country, and valuable input received by the project partners in the process of developing the programme, all relevant elements of *Practicing Design 1.0 Training Programme* were created. The training programme was implemented in each country, adjusted to the specific needs of the countries' targeted groups of students.

RATIONALE

Product designers play an important role in shaping everyday life through the design of products and systems used at home, at work and in the public domain. The job demands creative thinking, imagination, technical knowledge and keen awareness of the changes and new possibilities. As a response to the pressures and challenges of the contemporary age and its new socio-economic paradigm, the higher design education is currently undergoing a substantial realignment. In principle, this adjustment has to do with the following basic characteristics of the contemporary paradigm of Society and Economy Based on Knowledge: more pronounced complexity of the functioning of the system; intensive communication between the actors of the system; openness to receiving and sharing information and knowledge, the network matrix of learning and innovation with intensive collaboration in knowledge production, interdisciplinary and comprehensive ways in observing and problem solving, the integration of thinking and acting, taking into account the needs and expectations of all interested parties for certain outcomes of the activities of the system; the integration of theory and practice, the need

for both specialization and generalization. In regard to the changes, possibilities and expectations that the contemporary age has brought to design education, the design community is leading intensive discussions concerning the future direction of design education.

For instance, it is constantly pointed out that present-day designers do not have the ability to understand which problem a company wants to resolve through design, nor are they able to explain to a company, using basic business terminology, how their solution will contribute to the resolution of the problem. Additionally, the alienation of designers is often manifested in their lack of interest in final outcomes of their work, not in terms of clients' satisfaction with their work, but in terms of the response of end users to their product, or the way that their product affects the living environment. In other words, it has been observed that in their formal education, designers do not acquire the ability to comprehensively understand the needs of their clients and end users of their design solutions. Also, the absence of the ability of a comprehensive and interdisciplinary approach to project development, and a lack of ethical awareness that each designer's work affects the environment through several dimensions has been noticed. A designer has to be able to reach across disciplines to bring in information, to extract ideas, and to think critically from different viewpoints. For that reason, attention is being strongly called to the growing maladjustment of formal designer education with the real needs and problems of the world of today.

Nevertheless, it is possible to observe the trend towards the integration of educational content and a holistic and interdisciplinary approach to design education. From the perspective of public policy, design education must be enhanced with new knowledge that embraces collaboration, diversity, and an interactive and integrative approach. Furthermore, designers should have commercially oriented and international design

competencies, which should lead to improved competitiveness of businesses and enhanced quality of life. Additionally, the focus of public policy is on building an interdisciplinary approach and collaboration between design, business and others schools, and on fostering interaction among design managers, business executives – managers, educators, and public policy makers. However, because of the speed of changes, limited financial resources and the length of bureaucratic procedures, additional skills and competencies are not included fast enough into formal design education. *Massification*, diversification, internationalization, and "Academic Capitalism" make it increasingly hard for high educational design institutions to not succumb to the quantity at the expense of quality of design education.

This training programme acknowledges the fact that construction of knowledge and competencies is not only a personal, but a social problem as well. From the holistic interpretation, no element of design competency can exist apart from the whole, and their relations to all other elements determine the individual elements.

PROGRAMME SUMMARY

The idea behind this training programme is to help young design professionals to overcome the lack of experience of working on real projects within production industry. It creates the educational opportunity that addresses the problem of lacking business skills and practical design skills through a simulation of professional, real life design practice. In this way this training programme helps young design professionals to include necessary communication and business components into the corresponding phases of the design process. Therefore, this training programme integrates the development of cross-disciplinary and

transversal knowledge, skills and competencies related to design, entrepreneurship, social, business and management topics. At the same time, the programme serves as an educational platform for the managers of production companies, who will through a participatory and inclusive process, gain knowledge about the main phases of a design process, developed through the training programme content and the mechanisms of its realisation. The training programme is led by interdisciplinary team of experts coming from the fields of design, education and business.
This programme is organized and realised by vocational designers' associations in cooperation with educational institutions and production companies. There are several advantages of such an approach in comparison with design solutions coming through tenders and carried out by designers who mostly just provide get-ready solutions, without being given an opportunity to create a synergy effect of different points of view and learning benefits for all parties interested in design solutions.

The *Practicing Design 1.0 Training Programme* offers students to learn in greater detail about design process, visual and oral communication, technology and materials, marketing and market research, ergonomics, legislative issues, research methods and professional practice. Project tasks give them a hands-on experience and opportunity to apply their acquired knowledge in professional situations and practical environment. Students gain the opportunity to develop skills in visual communication such as sketching and modelling. This training encourages inventiveness and curiosity, and prepares students to work with technology and materials and increase their understanding of the social, environmental and commercial context in which they work. Since careers in product design are competitive, it is critical that young design professionals have a high level of professional and technical excellence. This training programme in a concrete practice based way ensures that its students become work-ready and highly employable.

In the final phase students consolidate and showcase their competence through substantial research and engagement in the production of the product prototype as the final project task determined by the partner company. The manufactured products are then presented and evaluated by the wider audience at a public exhibition.

PROGRAMME OBJECTIVES

The *Practicing Design 1.0 Training Programme*, provides vocational education, training and practical experience allowing students to materialize their ideas and acquire competencies and knowledge mostly related to the problems and demands of real life design practice. There are two central goals. The primary goal is to provide students with cross-disciplinary and transversal skills, skills and competencies related to design, entrepreneurship, business and management. In this way students acquire theoretical and practical knowledge, skills and techniques needed for the design, documentation and administration of design and product development and production. The second, more general goal is to provide students with an all-round problem-solving education.

The courses included in training programme aim to enable students:

- To acquire a set of tools and methods for product design and development,
- To gain confidence in the abilities to create a new product,
- To raise awareness of the role of multiple functions in creating a new product (e.g., strategy, product management, marketing, finance, industrial design, technology, production, project management, communication, branding),
- To gain the ability to coordinate multiple, interdisciplinary

tasks to achieve a common objective,
— To reinforce specific knowledge acquired in courses through practice and reflection in an action-oriented setting,
— To become part of a network of practitioners in product design,
— To apply gained knowledge and skills in a professional setting,
— To set up and conduct applied research in the field of their specialisation, and
— To gain problem solving skills.

Core lectures and practical sessions cover theoretical and practical knowledge in the following areas:
— Product Design Process,
— Design Methodology,
— Concept Generation,
— Concept Development and Presentation,
— Technical and Construction Drawings,
— Technology Solutions (Materials and Manufacturing),
— Design Management,
— Marketing,
— Project Management,
— Business Communication,
— Business Negotiation,
— Business Oriented Design Thinking,
— Intellectual Property Protection and Copyright,
— Design and Business Contracts,
— Financial and Business Models,
— Product and Brand Development, and
— Brand Communication Strategy.

ENTRY REQUIREMENTS

In line with the interdisciplinary focus, this training programme is open to candidates of various backgrounds and expertise (product designers, visual communication designers, textile designers, architects, technology and economy professionals, etc.). Participants in the pilot training programme presented in this handbook were selected through an open call, according to their portfolios, references and motivation to participate in the programme. They were all young professionals with up to 5 years of work experience. In general, the prerequisite knowledge had to been gained through completion of a Bachelor's degree from either an institute of higher professional education or a university. The degree had to be in a similar or a closely related course. Students' qualifications were assessed during an intake interview or on assessment of Curriculum Vitae, a motivation letter, testimonials and certificates.

EDUCATIONAL PHILOSOPHY – TEACHING AND LEARNING APPROACH

An interdisciplinary team of experts leads this training programme. The profile of educators is defined as follows: mentors (design and business) who are more or less intensely involved, teachers, trainers and lecturers of subspecialist theoretical and practical lessons (for example creative writing, business negotiation), educators from a manufacturing company, with technology, marketing, financial and other background. The *Practicing Design 1.0 Training Programme* reflects educational philosophy based on the experience of project partners working team in the field of design practice, design education and business ventures in product design. The teaching approach underpins the dual system – classroom-based education side by

side with hands-on experience in the workplace. Collaboration, participation and inclusion are the main principles of educational philosophy behind this training programme. The training programme is created so as to allow all the parties involved to participate in a continuous process of knowledge exchange following the principles of *integrative design* and *holistic approach to design*. Therefore, personalized, collaborative, interactive and inclusive learning and teaching approaches are emphasized. The starting point for the development of knowledge, skills and competencies was the positions for graduates in the professional sector. Consequently, learning objectives and competencies are described in co-operation with the design professional and business sector. These competencies form the main aim of the programme. The assessment of students is based on the definition of the term competency, where it is understood as the ability (Knowledge, Understanding, Skills and Attitude) to function adequately in a specific professional setting.

Main competencies that students should acquire through *Practicing Design 1.0 Training Programme* are described as follows:

METHODICALLY AND CONTEMPLATIVE THINKING AND ACTING

— Working methodically and systematically
— Analysis and judgment
— Including sustainability dimensions into specific context

GENERATING AND EVALUATING SUSTAINABLE SOLUTIONS

— Generating effective and acceptable solutions
— Evaluating and decision making

WORKING IN A PROJECT PERSPECTIVE AND WORKING TOGETHER BY MEANS OF A PROCESS

— Project management
— Interdisciplinary teamwork

COMMUNICATING AND CONSULTING

— Oral expression
— Written expression
— Strategic communication
— Professional consulting

SELF-RESPONSIBLE FUNCTIONING

— Showing responsibility and independence
— Personal reflection

MAKING USE OF LEGAL AND POLICY FRAMEWORKS

THINKING AND ACTING WITHIN THE PERSPECTIVE OF SUSTAINABLE PRODUCT/CHAIN DEVELOPMENT

— Recognising and listing relevant environmental aspects of products, production processes and their chains
— Consulting to develop products, production processes and chains with a lower environmental impact

Assessments in the programme are directly related to competencies. To gain the competencies, students have to obtain knowledge, understanding and skills in subjects through practice based learning in a simulated work environment. The final assessment is based on a professional product presentation in the form of a manufactured prototype made during internship hours. The prototypes have to be presented in a public exhibition where reaction from the public as the potential end-user of the product should provide useful feedback for students' project evaluation. In addition, students are to be evaluated through their capability to brand and visually communicate their products.

GENERAL EDUCATIONAL FRAMEWORK

The training programme is divided into five Units. These five Units are conceived to reflect the development of a design process. In this way the training programme simulates the designer's real life practice. In the first two Units, the attention is paid to the knowledge, understanding, skills and attitude (professional competencies) which designers need when engaged in the early stages of a design process. In the third and fourth Unit, as the design process is progressing, the courses become more practice oriented and students have to show their ability to apply the gained knowledge. The final, fifth Unit lasts about 2 months and its objective is to engage students in the prototype production process realised in a production facility of a partner company. All Units, except the fifth one, include theory and practice, but emphasis is placed on learning through practice so the ratio between the theoretical and the practical part in all the Units is higher in favour of practical learning. The five main Units of the training programme present an identical educational framework for all partner countries. The selection of a particular content of the Units depends on the specifics of a country or the desired focus and specialization.

5 Unit Framework:

— Introduction to Project Assignment / Informing and Problem Framing
— Conceptualization / Idea Generation and Concept Selection
— Solution Generation / Concept Development and Modelling
— Solution Development / Prototyping
— Follow Up and Evaluation / Prototype Testing, Branding and Promotion

The final student's task is the production of a prototype according to the assignment given by the partner company. The prototype is to be presented at the public exhibition, which allows gathering of feedback information from the public as potential end users. In this way the training programme reflects its holistic approach to design education, where the process and product should be completed by taking into consideration the relevant input at the beginning of the project, (not just considering design work, but clients' motives, needs, resources, capabilities, philosophy and expatiations) and by considering the impact of their project on the end user. Consequently, this training programme is developing a different kind of visual intelligence – the one, which enables designers to see everything in a relationship, and gives them the ability of comprehensive understanding of their clients' and end users' needs.

The detailed programme of all five Units is given in the appendix.

UNIT 1: INTRODUCTION TO PROJECT ASSIGNMENT

INFORMING AND PROBLEM FRAMING
DURATION: 2 – 4 DAYS; ADDITIONAL WORK (INDIVIDUAL AND TEAMWORK) – 2 DAYS

AIMS AND OBJECTIVES

Unit 1: Introduction to Project Assignment has two main objectives: the first is to inform, explain and clarify the project context, its specificities and the assignment. The second is to frame the problem on the basis of the acquired information. Additional objectives include broadening of the professional design and business knowledge and skills, which need to be applied during the assigned projects.

Unit 1 consists of two sections covering design (60%) and business (40%) topics, delivered simultaneously. The courses are delivered in the classroom and production facility.

COURSE CONTENT

THEORETICAL PART

Design topics: Students will be informed about the project scope, its stakeholders, resources, and assignment. Also, students will be introduced to Design Research Methods and will learn how to approach the problem from different perspectives: history, anthropology, ergonomics etc. Furthermore, the industry trends will be introduced, and students will learn about contextual research for specific task (Index of references, identification of client opportunities, modelling the client benefits).

Business topics: Students will learn about the main principles of Business/Entrepreneurship and Project Management, they will acquire fundamentals of Product Innovation and Commercialization, Marketing (Market Analysis, Market Research, Customers' needs) and Business Oriented Design Thinking. Also, they will acquire the principles of Team Management and Business Communication.

PRACTICAL PART

Design topics: Through exercises and workshops students will be trained in problem analysis and design research. Also they will be asked to revisit the initial briefs (teamwork), to determine the criteria, objectives and requirements of the project and to clarify the task. Through visits to a production facility of the partner company students will be introduced to materials, technologies and company production opportunities, its policy and plans which will allow them to become more familiar with the main actors and factors which determine the final project task and therefore, to gain better understanding of their assignment context.

Business topics: Students will be trained in project management phases, they will be asked to develop questionnaires for conducting market analysis and market research of customer needs, and to organise and manage functional teams. Also they will be asked to demonstrate their business communication skills by delivering oral and written presentations of their ideas and the project design brief.

KEY TASKS

Students are expected to draw the initial mission statement, to analyse customer needs and competitive position,

to create questionnaires and client profile, to conduct visual research, observation and to articulate results (history, anthropology, ergonomic, trends, references…). Also, students will have to define resources needed for the project and each team should work on a design brief. Finally, they will have to define the responsibility assignment matrix (distribution of responsibilities, estimate activity duration, resources required to perform project activities, etc.).

OUTCOMES

The main objective of the Introduction Unit is to prepare all students for the rest of the *Practicing Design 1.0 Training Programme*. Therefore, after completing this Unit students will be able to:

— Self-organize a project team,
— Use convergent thinking to analyse available facts taking into account the wider context (history, anthropology, ergonomics, trends, etc.),
— Use divergent thinking in understanding and defining the problem and proposing potential solutions,
— Create, conduct and implement questionnaires and interviews for gathering information about potential customers,
— Demonstrate communication skills by delivering oral and written presentations of their ideas and the project design brief,
— Verify and combine the importance of business, social and design skills,
— Explore new techniques and technologies, group them and identify social trends in order to define design opportunities, and
— Take responsibility for evaluating and improving activities for given tasks.

PREREQUISITES

Knowledge gained through completion of a Bachelor's degree from either an institute of higher professional education or a university. Students' qualifications are assessed based on a portfolio, biography, motivation and intake interview.

UNIT 2: CONCEPTUALIZATION

IDEA GENERATION AND CONCEPT SELECTION
DURATION: 2 – 4 DAYS; ADDITIONAL WORK (INDIVIDUAL AND TEAMWORK): 2 DAYS

AIMS AND OBJECTIVES

The main objective of Unit 2: Conceptualization is, based upon the design brief and all the corresponding experiences and acquired knowledge from the previous Unit, to start generating ideas, develop several concepts (upon the design and business requirements), evaluate them and select the one concept for future development (for each team of students). Along with participating in the product design process, the goal of this Unit is to train students to address communication and business issues for the purpose of idea and concept presentation.

Unit 2 consists of two sections covering design (60%) and business (40%) topics, which are simultaneously delivered. The courses are delivered in the classroom, production facility and through fieldwork.

COURSE CONTENT

THEORETICAL PART

Design topics: Students will be introduced to Design Methodology principles and Product Design Process.
Business topics: Students will continue to learn about topics delivered in the previous Unit in the Business Module (Project Management topics, Marketing, Business Oriented Design Thinking, etc.)

PRACTICAL PART

Design topics: Through exercises and workshops students will be trained in idea research and generation, 3D sketching, concept generation, visual, ergonomic, material, production and technology solutions, concept presentation and evaluation, functional and feasibility analysis, concept development, and project statements.
Business topics: Students will be trained to identify opportunities for the inclusion of communication and business components into corresponding phases of the design process.

KEY TASKS

Since the focus of the Unit 2 is on practical part which accounts for 80% of the Unit, students are expected to present idea and concept generation through research of aesthetic, functional, ergonomics, technical, ethical, ecological, economical and other demands. Also they will be asked to evaluate proposed concepts through defining evaluation criteria for best solutions and concepts, and to draft the project statements.

OUTCOMES

The main objective of Unit 2: Conceptualization is to prepare students for the next phase of design process. Therefore, upon completion of Unit 2 students will be able to:

— Analyse, synthesize and evaluate specialized facts, concepts, procedures, principles and theories to support design concepts,
— Interpret, estimate, select, and creatively apply different relative facts, ideas, solutions and procedures required to generate new and valid concepts,

— Take part in interdisciplinary group decision making,
— Improve the presentations of Project Statements by including information related to materials, technologies and production opportunities as well as to business/commerce related aspects of the project,
— Develop sketches and models of first ideas and concepts,
— Analyse and valorise the strengths, weaknesses, opportunities and threats (SWOT) of each concept,
— Select, clarify, develop and present selected concepts, and
— Recognize, evaluate and explain the application of creativity and innovation of concepts in relation to business potentials.

PREREQUISITES

Completion of Unit 1

UNIT 3: SOLUTION GENERATION

CONCEPT DEVELOPMENT AND MODELLING
DURATION: 3 DAYS; ADDITIONAL WORK (INDIVIDUAL AND TEAMWORK): 2 DAYS

AIMS AND OBJECTIVES

The main goal of Unit 3: Solution Generation is to provide the students with the necessary Design and Business skills needed to further concept development. This Unit is expected to provide student teams with additional skills and knowledge of Design Management, give deeper insights into Design Process, and navigate them while creating the drafts of their own Business Models.

Unit 3 consists of two sections covering design (60%) and business (40%) topics, which are delivered simultaneously. The courses are delivered in the classroom and production facility.

COURSE CONTENT

THEORETICAL PART

Design topics: Students will be introduced to Design Management principles and further topics concerning Product Design Process.

Business topics: Students will learn about Intellectual Property Protection and Copyright issues in the field of design, principle elements of Design and Business contracts, possible Financing Business Models.

PRACTICAL PART

Design topics: Through exercises and workshops students will be trained in 3D modelling and physical model making. Also, the focus of the practical part of the Unit 3 is on the training in concept (model) evaluation and its clarification and development. Furthermore, they will be trained to specify the concept through material and dimension definition, to draft the technical documentation for the first prototype, to perform functional and standard analyses for the first prototype and to make necessary preparation for prototyping.

Business topics: Students will be trained to create the first draft of a contract and application for the registration of intellectual property, develop financing model and business model canvas and to create the project timeline with the identification of potential risks.

KEY TASKS

Since the focus of the Unit 3 is on practical part (70% of the course), students will be asked to verify the developed concepts with emphasis placed on the choice of materials, technologies and processes, functional, ergonomics, social, psychological and other requirements and aspects. They will have to deliver 3D design drawings of the concept, working models, first draft of product specification and technical documentation for the first physical models. Furthermore, they will have to deliver the first draft of a contract and an application for the registration of intellectual property, financial model and business model canvas, and a project timing and risk management plan for the proposed project.

OUTCOMES

The main objective of Unit 3: Solution Generation is to prepare students for the next phase of the design process. Therefore, after finishing Unit 3 students will be able to:

— Critically comprehend, evaluate, interpret, estimate and apply special facts, procedures, principles and theories in concept development,
— Generate solutions based on the evaluation of the requirements and specifications,
— Solve problems related to concept development,
— Manage communication and interaction with mentors and other teams,
— Make decisions concerning intellectual property protection and copyright,
— Research and articulate contract options,
— Analyse financing opportunities and select the most appropriate one(s) for the given concept,
— Develop all elements for the Business Model Canvas, and
— Present concepts to all the programme participants.

PREREQUISITES

Completion of Unit 2

UNIT 4: SOLUTION DEVELOPMENT

PROTOTYPING
DURATION: 3 DAYS; ADDITIONAL TEAMWORK AND TIME SPENT ON PROTOTYPE DEVELOPMENT: 10 DAYS.

AIMS AND OBJECTIVES

The objective of Unit 4: Solution Development is to help students to develop their prototypes and define in detail the necessary technical requirements (dimensions, functions, materials and construction) and quality assessments. Furthermore, the goal is to train students to present their project by using the previously acquired design and business skills.

Unit 4 consists of two sections covering design (60%) and business (40%) topics delivered simultaneously. The courses are delivered in the classroom and production facility.

COURSE CONTENT

THEORETICAL PART

Design topics: Students will learn about Product and Brand development, Technical Construction drawings, Standardization and Quality requirements (preparation for testing in laboratory).

Business topics: Students will become familiar with Brand Development principles, Strategies for Brand Communication and Business Negotiation principles.

PRACTICAL PART

Design topics: Through exercises and workshops students will be trained to assess and define the first prototype and to define material and construction. Additionally, students will be trained to define standard requirements (functional dimensions) of the first prototype, and to do detail technical drawing. Furthermore, they will be trained in quality analysis, visual representation and product identity scenarios.

Business topics: Students will be trained to define and combine elements for brand development and strategy for brand communication, to play different negotiation and presentation scenarios, to apply their newly acquired skills and knowledge into finalization of project concepts and to outline an appropriate communication strategy for marketing products and services to beneficiaries and other customers. Furthermore, they will be trained to deliver the final version of a contract and application for the registration of intellectual property, financing model and business model canvas and to create the final project timeline with the identification of potential risks.

KEY TASKS

Since the practical part of this Unit is dominant (80% of the course), students will be asked to deliver the final team presentations of their projects which include: the first prototype, defined technical requirements, standard requirements (functional dimensions, technical quality) of the first prototype, detail technical drawings, quality analyses, visual representation and product identity, defined activities for intellectual property protection and copyright, finalized business model canvas, developed product and brand strategies, developed strategies for brand communication and the textual and visual presentation of the project for diverse audiences.

OUTCOMES

The main objective of the Unit 4: Solution development and prototyping is to enable students to prepare their final prototype for entry into production. Therefore, after completing the Unit 4 students will be able to:

— Create, evaluate, assess, suggest and apply special facts, procedures, principles and theories in solution / product development,
— Manage critical and complex communication and interaction between all participants,
— Define and create detailed technical requirements, including dimensions, material and construction for prototype development,
— Analyse and use relevant standards and quality requests,
— Develop verbal and visual documentation of the process,
— Create and develop prototype,
— Define intellectual property protection and copyright for the project/product,
— Create contract proposals,
— Explain the advantages of a selected financial model,
— Revisit and fine-tune Business Model Canvas,
— Present concept and product development strategy to all the participants, and
— Set tasks for further brand development and brand communication.

PREREQUISITES

Completion of Unit 3

UNIT 5: FOLLOW UP AND EVALUATION

PROTOTYPE TESTING, BRANDING AND PROMOTION
DURATION: 2 MONTHS.

AIMS AND OBJECTIVES

The main objective of the final phase of the project: Follow up and Evaluation is to engage students in the manufacturing of prototypes, to prepare them for effective on-line and face to face communication with teams and mentors and to enable them to assess the effectiveness of the project from the design, marketing and commercial point of view. The first test of success of the final project task is to be evaluated at the exhibition.

The main activities of this Unit are located in the production facility.

CONTENT

THEORETICAL PART

Design topics: Verification of the Design Methodology and Design Process
Business topics: based on the theoretical inputs received in previous Units; Sales and Distribution Strategies, Project Progress Monitoring

PRACTICAL PART

Design topics: Art direction and production of visual and verbal material for the exhibition of the prototypes

product testing and preparation for its inclusion into the company product range.

Business topics: Students will practice how to monitor marketing and PR budgets and measure the effectiveness of marketing efforts, understand how to leverage free media, social media and a budget for promotion services, to define PR activities, and to evaluate the success of implemented sales strategy.

KEY TASKS

Since the focus of the final Unit is on the production of prototypes, each student team together with the partner company should prepare their prototypes for manufacturing. In addition, together with the partner company, students should work on verbal and visual branding of the product and on the preparation for exhibiting the prototypes. The training programme includes the organization of the product exhibition and gathering feedback information through a survey of exhibition visitors as potential end-users of the exhibited products. Also students will be involved in the planning of testing products on the market.

OUTCOMES

The main goal of the final Unit is to drive students through the phases of production, promotion and commercialization of their product. Therefore, after completing this Unit students will be able to:

— Perform complex activities and combine all the acquired knowledge and skills in all Units of the training programme
— Verbally and visually present the product and brand and advocate for proposed solutions
— Contribute effectively in the exhibition preparation and opening
— Promote own product
— Improve the product based on the results of product testing and its preparation for market implementation
— Evaluate the entire process of developing the product as a solution to a problem
— Highlight necessary skills and tools to be used in future to implement these activities

PREREQUISITES

Completion of Unit 4

CASE STUDY AUSTRIA

designaustria / Vocational Design Organization;
FH Joanneum, NDU – New Design University St. Pölten / Educational Institution;
Tischlerei Hans Hitzl, High Performance Vienna GmbH, Felzmann Design & Handicraft KG, LIECO GmbH & Co KG / Companies

INTRODUCTION

During the second phase of the *Practicing Design* Project, designaustria together with several partner companies and educational institutions developed a training programme that fits the specific needs of young design professionals in Austria. Since internships are already widely recommended by Austrian design schools and partly even mandatory requirements in their curricula, especially private educational design institutions, the specificity of the training programme developed in Austria goes beyond a 'typical' task schedule of an internship in a company. To achieve this, students were encouraged to share their 'real-life' working experiences gained in companies in order to enrich the training content. Influenced by the input, the training schedule could be adapted by workshop leaders accordingly. Thus, the workshop program was developed in

mutual cooperation between the students and the workshop leaders to ensure a high level of involvement of all parties. The idea was to design the workshop sessions based on the existing experience, not only of the workshop lecturers, but the students' work experience as well.

TARGETED OUTCOMES

Overall objective of the training workshop programme was to provide practice-oriented entrepreneurial know-how for new design practitioners at the beginning of their careers. Each part of the Design Training Course included a state-of-the-art multiple method approach in teaching practice.

TEACHING / LEARNING METHODS

In order to harmonise the objectives and to cover the variety of the students' demands, the programme leaders were asked to specify their didactic activities according to the following chart:

— Theoretical Lectures / Input by educators,
— Self-studying/ Individual home or library study of students,
— Written Works/Texts / Training on structuring and developing promotional text material, portfolio and work descriptions,
— Distance learning / Via online learning tools or social media,
— Field work / Visits to studios and company facilities,
— Practical work / Case studies analyses and exercises,
— Workshops and hands on learning / Physical modes, technical drawing and prototypes production, and
— Teamwork / Group problem solving.

Discussions and Q&A were included in each series of the training programme to ensure engagement and feedback to improve the upcoming lectures. Students were encouraged to give direct feedback that allowed the lecturers to be flexible and focus on specific topics. In accordance with the experience and specific interest of the students, the workshops' focal point could easily be modified. The diversified approach to business topics highly contributed to the acceptance of content that was previously often considered as dry and draggy by the students. Case studies of successful and unsuccessful business scenarios helped to build up relevance in the daily working life of a designer.

KEY LEARNING

Flexibility in design education suits the needs of young creative professionals and their talents. Teaching business knowledge is appreciated and accepted when sufficient practical examples are introduced and the relevance to the design profession is demonstrated.

LECTURERS

The variety of professional expertise and a well-grounded composition of teachers ensured the holistic approach to the training programme topics. Trainers and lecturers are all experts in business studies, marketing, copyright, intellectual property right, design management, public relations and engineering. The trainer and consultation team for the workshop series consisted of 18 people who sometimes work in a triple function as business managers, design practitioners and academic trainers in several private vocational schools in Austria

e.g. die graphische, FH Joanneum, NDU – The New Design University St. Pölten.

Leaders who helped to create the training programme: Prof. Severin Filek, DDr. Meinhard Ciresa, Dr. Doris Rothauer, Mr. Martin Fössleitner, Mr. Benno Flotzinger, Ms. Katrin Steindl, Ms. Simone Mathys-Parnreiter

STUDENTS

Students and recent design graduates from different parts of Austria and fields of graphic and industrial design joined the training programme. Many of them had hardly any contact with business thinking but all of them felt they lack competencies in the subject and wanted to gain more sovereignty in their professional work by upgrading them.

PARTNER COMPANIES

LIECO GmbH & Co KG produces high-quality containerized forest seedlings in a unique system and guaranteed provenances by using polyethylene trays. Company gave valuable insights in the form of its know-how on manufacturing customer-orientated designs and successful development of unique selling propositions.

High Performance Vienna GmbH information design atelier was engaged in the project through counselling students on sharpening design concepts and getting them ready for the market.

Felzmann Design & Handicraft KG furniture and interior concept company gave valuable advice on how to combine carpentry with design and find a niche for selling products, which was a crucial input for the prototyping.

Tischlerei Hans Hitzl, a carpentry company specialised in designing and producing quality home furniture determined the final project task through a design brief.

COMPANY BRIEF: TISCHLEREI HANS HITZL

CONTEXT

The award-winning Austrian carpentry company Tischlerei Hans Hitzl is specialized in and renowned for high-quality interior design and production. They work closely together with customers to develop the best solution for specific needs.

REQUIREMENTS

Since Tischlerei Hans Hitzl pursues a selling proposition of flexible and sustainable interior, the programme students were asked to design solid wood interior elements with the following characteristics: Austrian wood, flexible in usage and construction with the focus on economical production, suitable for mass production, easy to transport and building up.

DESCRIPTION OF THE TRAINING PROGRAMME

Since the research results from the study Rethinking Design Education regarding Austria have shown that graduates, respectively young design professionals, seek to feel confident in the business and legal daily practice of (creative) entrepreneurs, regardless of whether they are self-employed or employed in larger companies, the specific challenge for the Austrian experts was to generate a training programme for young professionals which would integrate different stages of knowledge on practical

management. Since there has been an intense interest by young designers in learning about financing methods for the production of prototypes and in gaining basic knowledge of regulatory frameworks for professional designers, the training programme put an emphasis on business planning, financial planning, portfolio management, copyright and legal regulations.

PART 1: DESIGN AND BUSINESS SKILLS AND COMPETENCIES

DURATION

1 day

Part 1 of the training programme aimed at giving an overview and clarification of business related terms and definitions. Further topics were general contract provisions, competition rules, copyrights and customer acquisition advice. Best and worst practice examples were given to demonstrate the relevance of these topics in daily business practice of design professionals.

TEACHING/LEARNING METHODS

theoretical lectures / input by educators, practical work / case studies analyses and exercises

STUDENTS' FEEDBACK

"Terms and expressions which I thought were unimportant for my profession make sense now!"

"To hear about the worst cases of others *is often the most instructive and helpful."*

PART 2: BUSINESS THINKING AND MARKET RESEARCH

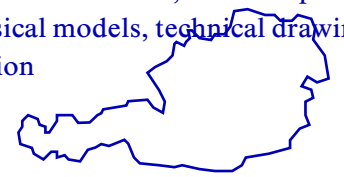
DURATION

1 day

During the second part of the training programme, students were introduced to marketing and management terminology, the need for strategic marketing and key marketing instruments. Through the case studies of business plans a special focus was given to the market analysis. Also, the concept of PEST analysis was introduced and practiced in small groups. Students learned about the usefulness of online channels for both promotion and financing marketing instrument. Alternative financing such as crowdfunding was introduced and explained through examples to young designers as a strategic tool for testing and measuring their portfolio ideas within a wider community. Challenges and opportunities of social media channels were discussed and case platform ideated in small teams.

TEACHING/LEARNING METHODS

theoretical lectures / input by educators, practical work / case studies analyses and exercises, workshops and hands on learning / physical models, technical drawings and prototypes production



PART 3: MARKETING MANAGEMENT, COMMUNICATION AND RETAIL

DURATION

1 day

The third part of the training programme focused on Marketing – including research and analysis of the business field and target customer groups – and legal frame conditions. Students were asked to identify and formulate their visions and the strategic development of their design projects in groups. Clarification of the difference between strategic planning and tactical acting helped to deepen their understanding of customers as a continuation of the previous session. In this theoretical and practical session designers learned that both design and business developments are processes that need to be frequently re-examined. Visions might change during the development process and strategies must be adapted accordingly. Since the students of the training programme were familiar with and well-trained in the development of design concepts, the comparison of design development with business development demonstrated the analogy of both processes.

TEACHING/LEARNING METHODS

theoretical lectures / input by educators, practical work / case studies analyses and exercises, workshops and hands on learning / physical modes, technical drawing and prototypes production – teamwork / group problem solving

Students' feedback:

"I might not want to become a marketing expert but now I see why a cooperation on eye-level between a designer and a marketer promises to be successful."

"To clearly define a vision and a strategy helps me to create my own unique selling proposition."
"It is a big help for designers when you can define the vision together with a customer."

PART 4: PROTOTYPING

DURATION
2 days

Prototyping workshop took place at two locations in cooperation with two companies: at the workshops of Lieco GmbH and at Hans Hitzl Tischlerei. At first, the participants were provided with insights into the business practice of production and introduced to best practice advice by managing directors Kurt Ramskogler of Lieco GmbH and Hans Hitzl, the founder and owner Hans Hitzl Tischlerei. The students and the staff of the company worked on the production of the prototypes. A valuable part of this cooperation was to get insights into the supply chain of both the material manufacturing company and the material processing company.

TEACHING/LEARNING METHODS
workshops and hands-on learning / physical modes, technical drawing and prototypes production – teamwork / group problem solving

STUDENTS' FEEDBACK
"Learning from entrepreneurs means getting the opportunity to learn how to avoid making similar mistakes."
"Experiencing where the material for my design products comes from and how it is best processed reinforces my arguments towards customers on why my designs are of high quality."

PART 5: SELF-MARKETING

DURATION
1 day

The focus of the final part of the training programme was self-marketing, and the creation of a unique selling proposition (USP) for young design professionals. The programme aimed at providing a toolkit to analyse, define and create informative and appealing portfolios that summarize one's skills and competencies in order to present him/herself to the client. Group work and discussion helped to communicate ideas and reflect on suggestions for improving professional portfolios. Examples of various portfolios of established businesses were presented in order to help students to find their individual self-expression. The follow up included further discussions.

TEACHING/LEARNING METHODS
theoretical lectures, practical work / case studies analyses and exercises, teamwork

STUDENTS' FEEDBACK
"I was already engaged in the topic before the workshop and was happy to feel reassured about some thoughts I had earlier."
"It means a lot of work but I realize that it just has to be done if I want to be more successful."
"I would like to learn more about specialization on portfolios."

PRODUCT DESCRIPTIONS

REMOTE

Designer: Christoph Fussgänger
Design and architecture, Technical University, Vienna

remote is a wooden remote controller used for operating home devices. The initiative to start producing a wooden prototype, instead of the plastic one, came along with rethinking of using renewable raw materials. In addition, the type of wood and its surface can be adapted to customer preferences. Instead of veneering, the object was CMC milled. To take the product further into the production, crowdfunding will be used as an alternative source of financing for both the object as well as the accompanying packaging.

CORDIAL CHAIR

Designers: Anna Maislinger and Michael Schwab
Studied Design and Product management at the University of Applied Art Salzburg

Cordial Chair is a continuation and optimization of an existing design named *Misread Lounger* developed while studying at the University of Applied Art in Salzburg. The main idea behind the product was to create a piece of furniture easy to assemble and disassemble without using extra tools, taking into account the entire life cycle, material health, recyclability and quality of the product.

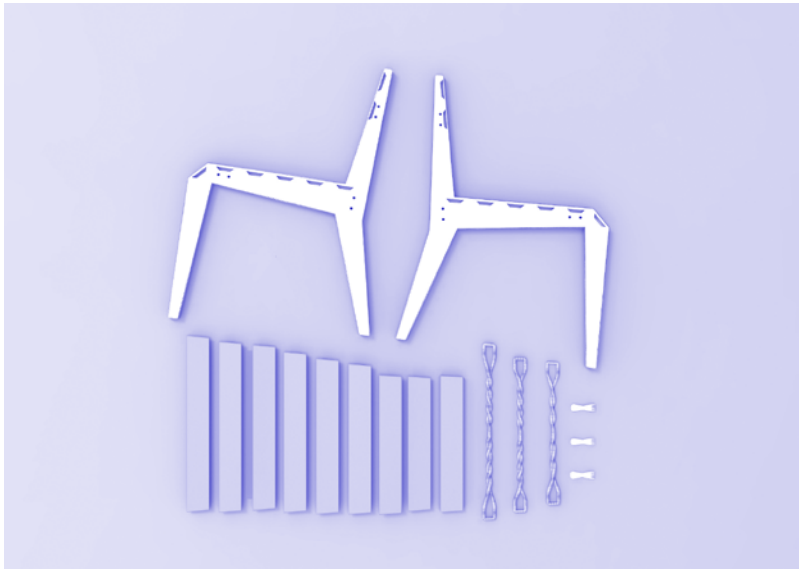
Therefore, *Cordial Chair* is lightweight, can be flat packed, efficiently transported and easily assembled in short time. It is made of oiled plywood, stained and oiled solid wood and hemp ropes. Wood is a natural, environmentally friendly, renewable resource that reduces carbon dioxide emissions. Hemp is well adapted to most European conditions and grows extremely fast, producing more fibre yield per acre than any other source. The plant does not exhaust the soil; it rather nourishes it and leaves it in excellent condition for any succeeding crop. Due to its flexibility, strength and resistance, hemp is the traditional rope making fibre. The project was developed following the *Cradle to Cradle* concept by William McDonough and Michael Braungart, which means that all the material used cycle safely within the biological cycle. Together with Tischerlei Hans Hitzl the chair is now ready to be put on the market and can be adjusted in colour, material and size.

Take the plywood side parts, solid wood pieces for the seat and backrest and bond them to create your Cordial Chair. Add hemp ropes and twist them to tighten the connection. Do not use glue, screws or nails!

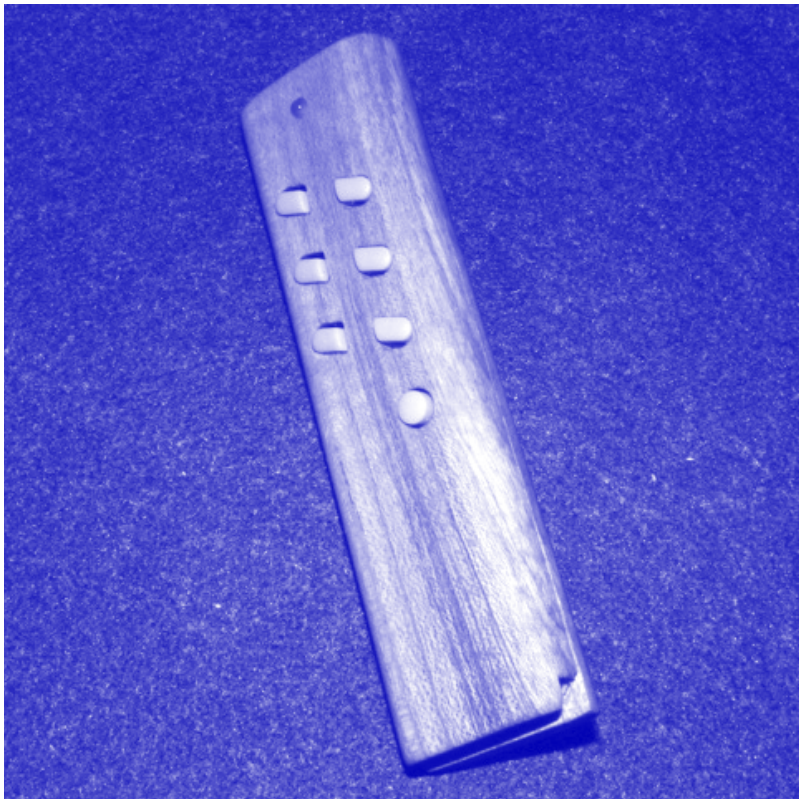
TRAINING PROGRAMME PARTNERS

designaustria (DA) – Knowledge Centre & Interest Organisation

Founded in 1927, designaustria is Europe's third oldest design association. Operating as an interface between the European economy and the creative industries, the organisation aims to connect these two players through numerous projects such as workshops, exhibitions, conferences, publications and design competitions. designaustria seeks to improve the prerequisites for an ideal environment for the design industry to work in. designaustria makes use of a large international network of professionals through its active memberships with BEDA and Icograda. designaustria offers a profound competency in counselling students, professionals, and SMEs – both



Cordial Chair, Anna Maislinger and Michael Schwab



remote, Christoph Fussgänger

design and manufacturing companies – in all matters related to the design practice and strategic design management. It is designaustria's goal to raise and establish sustainable design awareness within European SMEs, to measure, evaluate and promote the value of design, and to advance design and copyright protection.

EDUCATIONAL INSTITUTIONS

FH Joanneum Graz is a centre of business and innovation and a city of design and culture. It provides an excellent scientific environment for the 20 Bachelor's degree programmes, 15 Master's degree programmes and various postgraduate Master's courses offered by FH Joanneum. As a university of applied sciences FH Joanneum carries out regional and cross-border research projects for and in collaboration with partners. It promotes sustainable concepts, combining creative impetus with a solution and market-oriented approach for the benefit of society. The University is committed to driving innovation in Styria and beyond.

The New Design University St. Pölten (NDU) was founded by the Lower Austrian Chamber of Commerce and its Business Development Institute WIFI in 2004. As an international destination for quality education in the fields of design, technology and business, the NDU trains creative thinkers who advance social change and explore tomorrow's work and design practice today. The NDU stands out for its high level of personal supervision, attaching special importance to the combination of theory and practice. Imparting business skills is another matter of great importance at the private university in St. Pölten.

die graphische Vienna, founded in 1888 is Austria's leading vocational school for graphic design and media technology.

PARTNER COMPANIES

Tischlerei Hans Hitzl: Tischlerei Hans Hitzl is a master carpentry company specialised in designing and producing quality home furniture made in Austria. The company with nearly four decades of experience is located in the Austrian Federal department of Salzburg. Their design reflects traditional handicraft from Salzburg and contemporary needs of private and business customers. Tischlerei Hans Hitzl focuses on creation of flexible and sustainable products. Its portfolio includes solutions for the B2C sector for kitchens, bathrooms, living spaces, doors and door framing as well as restoration of antiques. For the B2B sector Tischlerei Hans Hitzl provides expertise in planning and creation for the hospitality industry and trade stores. The company employs five people. In 2013 Tischlerei Hans Hitzl won the 23. Handwerkspreis 2013.

LIECO GmbH & Co KG: an Austrian company based in Styria is part of the Prince of Liechtenstein Foundation and was founded in 1985. LIECO produces high-quality containerized forest seedlings in a unique system and guaranteed provenances by using polyethylene trays. Research and development is a very important factor for sustainability. Products are constantly being adapted to meet customer demand.

High Performance Vienna GmbH: Hi-Pe is an Austria information design atelier based in Vienna. Their clients are multinational Japanese corporations in the field of imaging industry, international associations and organizations, municipalities and the local neighbourhood. Hi-Pe works on making ideas and concept of businesses and projects barrier free, accessible and comprehensible, helping customers to discover the essence and value of their idea or concept as well as cultivating

identity and uniqueness.

Felzmann Design & Handicraft KG: Felzmann is an Austria furniture and interior concept company based in Vienna. Felzmann manages projects from the start to the end, designs interiors and builds tailored high-quality furniture.

PRACTICING DESIGN 1.0 TRAINING PROGRAMME

CASE STUDY CROATIA

PARTNERS

Croatian Designers Association (CDA) / Vocational Design Organization;
University of Applied Sciences VERN' / Educational Institution;
Prostoria / Furniture Manufacturing Company

INTRODUCTION

During the second phase of the *Practicing Design* Project, Croatian Designers Association, together with the partner company Prostoria and educational institution VERN' developed a training programme that fits the specific needs of young design professionals in Croatia. Since internship in design schools in Croatia is not mandatory in Croatian design curricula, one of the results of the research on the discrepancy of Croatian designers' knowledge and competencies acquired through formal education and the ones needed in real professional practice showed that Croatian graduates lack real practical experience. Therefore, specificity of Croatian training programme is the focus on internship experience and on the integration of design, entrepreneurship, management, technology and functions of

the firm in creating a new product.

As a leading Partner in the *Practicing Design* Project, CDA also took the leading role in forming the training programme, its coordination and realization. CDA provided the expertise by delegating mentors, teachers and trainers to carry out specific tasks during the programme. VERN' took the role of organizing and coordinating the part of the programme related to business and entrepreneurship and provided its expertise in those fields. Prostoria took the main role in the final stage of the programme and prototype production. All Partners were engaged in the programme during the whole time and were developing the programme through collaborative and participatory processes. Students' feedback requested and received after the 1st and 3rd workshop served as guidance to adjust the programme to their needs.

TARGETED OUTCOMES

The programme intended to provide the students with:

— Ability to use set of tools and methods to increase competencies for product design and development
— Confidence in the ability to create a new product
— Awareness of the role of multiple functions in creating a new product (e.g., strategy, product management, marketing, finance, industrial design, technology, production, project management, communication, branding)
— Ability to coordinate multiple, interdisciplinary tasks to achieve a required objective
— Reinforcement of specific knowledge from other courses through practice and reflection in an action-oriented setting

TEACHING/LEARNING METHODS

The teaching approach underpinned the dual system – classroom-based education side by side with hands-on experience in the workplace. Collaboration, co-creation, co-learning, participation and inclusion were the main principals of educational philosophy behind the Croatian training programme. Respectively, the following didactic elements were applied:

— Lecturing
— Presentations
— Practice based learning (exercises, short workshops)
— Demonstrating (best practices, examples, evidences)
— Group discussions, meetings and working sessions
— Teamwork and collaboration
— Field work (research, visits etc.)
— Self-studying
— Co-learning

STRUCTURE OF THE WORKING TEAM OF EXPERTS

PROJECT MANAGERS

Project managers are the representatives of the partner organisation leading the process. The partner organisations are responsible for providing the know-how and educators from the fields of design and business.
CDA: Ivana Borovnjak
VERN': Gordana Ćorić
Prostoria: Iva Šilović Grabovac

EDUCATORS / DESIGN AND BUSINESS MENTORS, TEACHERS, TRAINERS AND LECTURERS

Design and business mentors are experts involved for the duration of the whole programme. Guest teachers, trainers and lecturers are experts from different fields of design and business covering: Design Process, Product Design, Design Management, Visual and Verbal Communication, Branding, Entrepreneurship, Marketing, Public Relations, Negotiation Techniques, Presentation Techniques, Business Modelling etc.

Design Mentors, Teachers and Trainers
Ivana Borovnjak, Design Research, Concept Development;
Damir Bralić, Design Thinking, Visual Communication;
Daniela Domljan, Product Design Development, Technology and Construction;
Oliver Deichmann, Concept and Product Design Development;
Iva Šilović Grabovac, Design Brief Development

Guest Trainers and Teachers in design
Marko Golub, Verbal Ideas Articulation, Creative Writing;
Marko Koržinek, Branding;
Nikola Radeljković, Product Design Development

Business Mentor and Trainer
Gordana Ćorić, Business and Entrepreneurship Skills, Business Model Generation Tools and Project Management, Business Oriented Design Thinking;

Trainers and Lecturers in Business
Boris Jurič, Product and Brand Development and Communication Strategy;
Diana Plantić Tadić, Marketing and Market Research;
Ivan Tanta, Presentation Techniques and Communication;
Ivana Vrcić, Intellectual Property and Copyright
Ivana Vrhovski, Negotiation Techniques

KEY LEARNINGS

One of the prerequisites of creating successful and sustainable design products is an integrative approach to design, which understands engaging interdisciplinary teams of designers and other specialists in participatory and co-learning processes. Practice based design education in the form of internships and cooperation with production companies in a real life context and other *learning by doing* processes are therefore the necessity. The evaluation results have shown that the education in management, business and economics should be presented in far more engaging ways as to clarify the usefulness of those fields to designers.

PARTICIPANTS

Students were selected through an open call. Eligible applicants were young professional designers from 1 to 5 years of working experience (product, visual communication, textile etc.), architects, technologists and economists as well as graduate students from these fields. Prospective students were informed that they would have the opportunity to participate

in the product development process from the idea, through the concept development to its presentation. Sixteen applicants from different fields were selected based on their portfolios, references and motivation. All students were to be considered co-authors of designed products.

COMPANY BRIEF

Prostoria is a manufacturing company, well recognized locally, regionally and internationally. In a 5-year period the company has launched a mixed portfolio of home furniture: sofas, sofa beds, armchairs, chairs, coffee tables, hangers and accessories. It has a yearly growth of 20–30% in sales, mainly due to fresh and innovative design. The company's main role in the training programme was to determine the project task, to provide human and production resources for the production of prototypes and to mentor students through all phases until the completion of the final project task. The company executives gave valuable input for the creation of the content and the implementation of the Training Programme.

THEME

HomeOffice 2016

CONTEXT

As an award-winning and widely recognized brand of upholstered furniture, Prostoria is expanding its range towards wooden furniture for home. The aim is to produce a working table (or another surface), which can stand separately or become part of a modular system that comprises of shelves, cupboards and space for audio components and TV.

REQUIREMENTS

— Wood (laminated or solid wood) or a combination of wood and fabrics (upholstery),
— Sufficient working area to accommodate a laptop,
— Storage space as part of the unit or standing independently of the working area,
— Freestanding (wall hanging/suspension optional but desirable),
— Contemporary, innovative and aesthetically appealing (taking into consideration the visual language of the brand, i.e. other objects in the collection),
— Applicable in different spaces and situations.

DESCRIPTION OF THE TRAINING PROGRAMME

Since the research results from the study Rethinking Design Education regarding Croatia showed that graduates and young design professionals were mostly dissatisfied with the design process and manufacturing skills, together with entrepreneurship and managerial competencies, Croatian training programme was oriented towards a strongly practical and integrative approach. The training programme was created as a joint effort of all Croatian project partners. Through a series of joint and individual meetings, partners exchanged their knowledge, attitudes, opinions and intentions on which they based the context, content, teaching and learning methods and all other relevant elements for the execution of the training programme were defined. The partner company set up the project theme: HomeOffice, and explained its strategy to launch a new range of products, which was discussed with all parties involved in order to collect inputs for the design brief from different perspectives. The Croatian training programme was divided into four consecutive parts, each lasting 2 days over

a period of one month. The practical part of the programme was carried out in the production facilities of Prostoria and the theoretical part accompanied by practical exercises and specific workshops in CDA and VERN'. The programme included all necessary conditions for the theoretical and practical application of knowledge, including "one on one" mentoring, monitoring of the development process of the product within the team, material input for producing design prototypes and exhibition of prototypes at the CDA Gallery.

PART 1: INTRODUCTION TO THE PROJECT ASSIGNMENT

Croatian Designers Association, VERN'

DURATION

2 days

The first part of the training programme was formed around the contextualization and introduction to the project assignment from both the design and business perspective. The programme started with presentation sessions by project managers from all partner organizations. Information about partners/stakeholders, resources, project scope and assignment were shared. The students presented their portfolio work, interests and motivation for participation in the programme. The Prostoria's project manager presented information about the company's product range, its position on the market, market orientation and target markets, together with the first draft of the brief, which included the product vision, technical capabilities and limitations, economic opportunities and constraints, production potentials, production costs and time needed for production. The theoretical part included introductory lectures

about the Office Environment, Design Research, Business Communication, Marketing and Market Research, Business Skills, Entrepreneurship and Basics of Business Oriented Design Thinking. Students were asked to form interdisciplinary teams of 4 members, ideally consisting of a product and visual communication designer, a wood technologist and an economist. Students were expected to use design and business research methods, including visual research and research of contemporary trends and the environment, conducting interviews and surveys with potential users and identifying existing examples on the market. The teams were encouraged to meet up in a number of sessions in order to detail the design brief before the start of the next session of the training programme. In conclusion, the first part of the training programme was focused on divergent thinking, which includes discovery and observation, forecasting point of view and identifying opportunities. Design and business mentors, trainers and lecturers carried out this part of the training programme.

TEACHING/LEARNING METHODS

lecturing, presentations, practice based learning (exercises, short workshops), demonstrating (best practices, examples, evidences), group discussions, teamwork and collaboration, field research (interviewing), self-studying, co-learning

PART 2: CONCEPT GENERATION AND CONCEPT SELECTION

DURATION

2 days

A visit to the production facility was the basic prerequisite for the start of the second part of the training programme, where students were introduced to materials, technologies and production opportunities of the company. The teams were asked to present previously defined design opportunities, together with their own adjusted design briefs. Different methods for developing a wide range of innovative solutions were applied in the process of generating concepts, among others, brainstorming and user scenarios. Students were introduced to Design Methodology application, principals of Idea Generation, Concept Selection, Project Statement articulation, Visual and Oral Concept Presentation. Design mentors, trainers and lecturers carried out this part of the training programme.

TEACHING/LEARNING METHODS:

presentations, practice based learning (exercises, short workshops), demonstrating (best practices, examples, evidences), group discussions, teamwork and collaboration, field research, self-studying, co-learning

PART 3: CONCEPT DEVELOPMENT

DURATION

2 days

The aim of the third part of the training programme was to lead the students through the process of Concept Development. Therefore, Concept Clarification, Sketching and Modelling, Material and Construction Definition, Technical Requirements, Visual Representation and Product Identity were the main topics. On the spot resolving doubts regarding the construction, material choices, technological and production possibilities and production stages were provided by the company technologists and other production team members. Visual appearance of the newly developed concepts and verbal articulation of concepts were discussed and developed in parallel. Students received homework tasks that included: Brand Development, Prototype Development, Communication Strategies, Written and Oral Presentations of the developed concepts. Design mentors, trainers and lecturers carried out this part of the training programme.

TEACHING/LEARNING METHODS

presentations, practice based learning (exercises, short workshops), group discussions, teamwork and collaboration, self-studying, co-learning

PART 4: BUSINESS MODEL PLANNING AND BRAND COMMUNICATION

DURATION

2 days

This part of the training programme was focused around Business Model Planning and Social Skills Development. The main aim was to prepare students for the final visual and verbal presentations of their projects to the wider audience. In addition, students were introduced and trained in the basics of Intellectual Property Protection and Copyright, principles of creating the Business Model Canvas and Project Management processes. Furthermore, they were trained in Product and Brand Development and Strategy for Brand Communication, in Negotiation and Presentation Techniques and Creative Writing – including Verbalization and Ideas Articulation. Design and business mentors, trainers and lecturers carried out this part of the training programme.

TEACHING/LEARNING METHODS

lecturing, presentations, practice based learning (exercises, short workshops), group discussions, teamwork and collaboration, self-studying, co-learning

PART 5: PROTOTYPE TESTING, BRANDING AND PROMOTION

DURATION

2 months

The focus of the final part of the programme was on the production, testing and promotion of prototypes. Therefore, each student team together with the design mentors and technologists from Prostoria worked on the finalisation of their projects. Students also worked on verbal and visual branding, on concepts and strategies of product promotion as well as product testing and its preparation for the implementation on the market. The training programme included the organization of the product exhibition and gathering feedback information through the survey of exhibition visitors as the potential end-users of the exhibited products. Professional monitoring in the process of prototyping and testing the prototypes was done through a sequence of live meetings and on-line feedback with mentors and the company project manager. The students were also expected to deepen the understanding and the importance of the visual appearance of their products on the market, so they were encouraged to think about the verbal branding and art direction of the photo and video material to convey the message about their products. They had to reflect on and make the final tuning of the product development before its testing and promotion during the exhibition. The purpose of the exhibition is the promotion of developed prototypes, testing the appearance and observing reactions of the audience.

TEACHING/LEARNING METHODS

presentations, practice based learning (exercises, short workshops), demonstrating (best practices, examples, evidences), group discussions, teamwork and collaboration, field work, self-studying, co-learning

HOMEWORK

Designers: Vlatka Blakšić, Simona Dolinga, Margareta Kovačević, Irma Mihovec Schmidt

HomeWork desk was created upon the inspiration that occurred while observing and analysing school desks throughout the history. The design of the desk embodies this psychological rigidity of school discipline, while at the same time it promotes warm materials that resemble comforting home atmosphere. The desk is entirely constructed in wood, except for the leather-upholstered worktop, which carries the human traces, as it gets older. Legs of the table go through the worktop, following the gesture of taping a sheet of paper on the drawing surface. The form and the idea of storage space emerged from the archetypical school desk and is placed on the back of the table top. In addition, a group of third year students of Entrepreneurship Economics are developing marketing plan for HomeWork, as an assignment proposed by prof. Boris Jurič during one of the programme sessions.

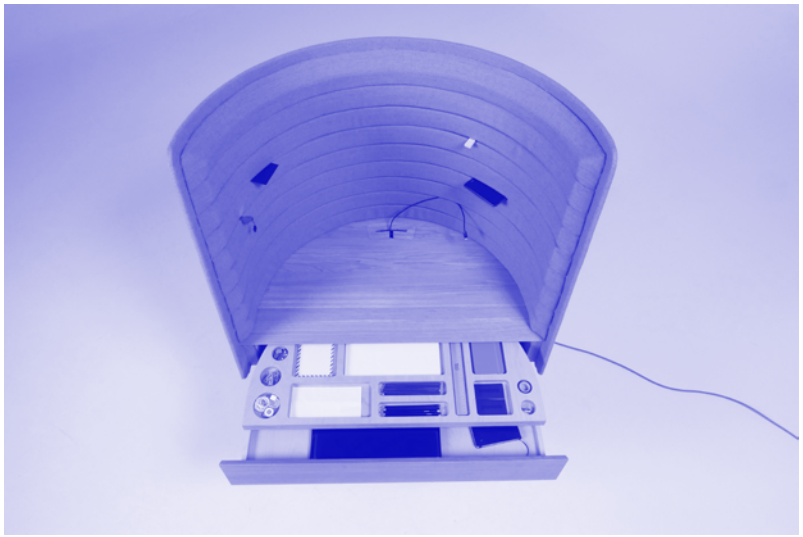
MODE2

Designers: Elizabeta Bošnjak, Lea Jurin, Janja Roškar, Marko Šostar

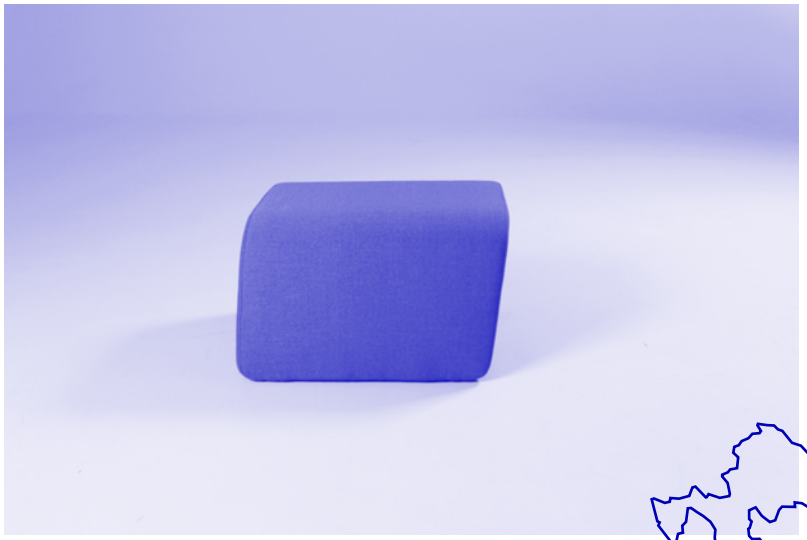
The desk was created in response to the needs of modern life, in which home – a place of residence and rest, often becomes a place of work as well. The design is focused on the need to change the workspace or body position occasionally in order to make the working process as pleasant as possible. The fixed working surface has an integrated extra surface, which is upholstered and soft

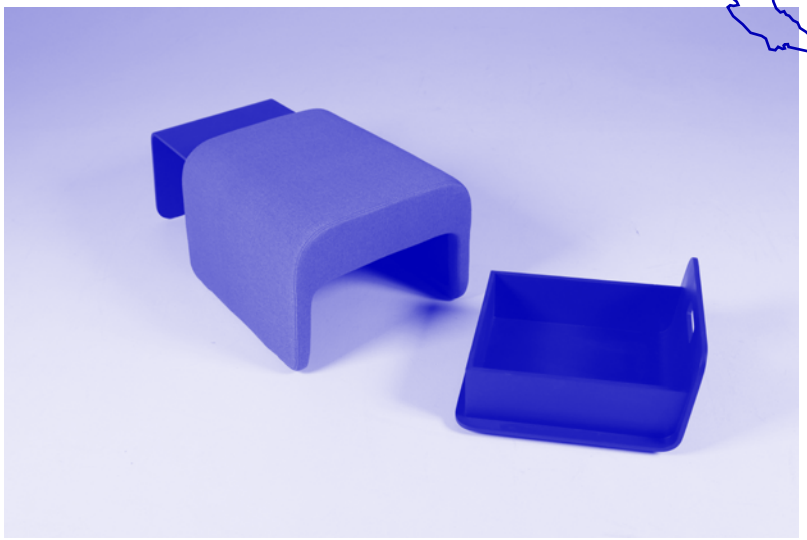
HomeWork, Vlatka Blakšić, Simona Dolinga, Margareta Kovačević, Irma Mihovec Schmidt

Mode2, Elizabeta Bošnjak, Lea Jurin,
Janja Roškar, Marko Šostar



SecretArea, Milena Jovanović, Tomica Perković,
Alica Pancer, Ivan Goran Žunar





Slide, Tvrtko Bojić, Domagoj Mamić, Marijana Tkalec, Marijana Penava

from one side, and hard from the other. Separated from the main body of the desk, this *pillow* becomes and independent portable, but stable working surface. It can be personalized by selecting different types of fabric and colours. Mode2 turns every corner of the home into an inspiring place to work.

SECRETAREA

Designers: Milena Jovanović, Tomica Perković, Alica Pancer, Ivan Goran Žunar

A desk is more of a place than an object. That is where ideas take shape and are turned into writings or projects. Concentration is the main requisite. – Jasper Morrison

SecretArea is a place of intimacy, a place where you can work but you don't have to. A place for you to contemplate, concentrate or communicate – virtually or by writing a letter. Fluid and open but, at the same time private and confidential. Work surface combined with an organization screen shaped as a cocoon reflects the product's core concept – flexible and dynamic organizational system where interaction between the object and the user is amplified. It stands in space free, appearing almost sculptural – an object that is space itself within itself.

SLIDE

Designers: Tvrtko Bojić, Domagoj Mamić, Marijana Tkalec, Marijana Penava

Slide is an experimental object that in its formal aspects embodies the elements of juxtaposed terms of the project task. It is reminiscent of the traditional ottoman and

transfers its usage into the contemporary world where the temporary work environment (office) moves into the cosiness of the living room (home). In short, this contemporary pouf can still be used to sit on – for it is upholstered from the outside, but can also be used to work at – since it is hard from the inside.

STUDENTS TRAINING PROGRAMME EVALUATION

All students' remarks were taken into consideration during the process of developing the *Practicing Design 1.0 Training Programme*.

Although the majority of students evaluated the training programme as *useful* and *very useful*, two (2) students assessed it as *less useful and informative than expected*. The Business part of the program was evaluated as *less useful* than the design part, due to the number of topics and students' familiarity with the content. All course materials received during the programme were considered useful.

The level of business knowledge of some participants was higher than assumed. Despite that, the programme was regarded as very ambitious, with too many topics in a short time. However, a bigger picture of the idea of the production process was received. Furthermore, it was suggested that the sessions should involve more practical work.

In addition to the request for more time to work on a project assignment (the brief), students suggested that it should be better defined. The company needs to develop an initial "customer profile" and thus direct the focus. The very purpose of the project task was not set clearly enough, therefore the suggestions of mentors were too diverse, which was sometimes confusing and contradictory. It is necessary to

provide separated work areas so that the teams could work undisturbed. Business and design mentors should be more coordinated in regards to giving feedback, consultations and advice to project teams and they should encourage communication between the teams.

Students proposed further upgrade of the theoretical part of the programme:

— A survey about the content and dynamics of learning in order to allocate more time for classes for which the increased interest is expressed
— Better interconnection between theoretical lectures with the brief

Finally, among the subjects not covered, the students stated the following topics:

— Specific tools and procedures for self-promotion and establishment of designers in the labour market
— Consumers' behaviour, pricing, distribution (product packaging and preparation for transport)
— Enhancing students' freelancing potentials

TEAM STRUCTURE

Most respondents agreed with the proposed interdisciplinary team structure (designers, technologists, economists, marketing experts) and considered that the structure is not as important as the motivation. Even the proposal that advocates only teams with designers by education, suggests that team members should possess knowledge in different subspecialist fields (product, visual communication, etc.)

DURATION

The offered model (4 two-day sessions in the time span of one month, plus a two-month period for prototype development) was rated *acceptable*, while the options of extended period of time (2 or 3 months, with a period of reflection and self-initiated work teams) were mainly assessed as the *optimal* choice. The option of *continuous daily work during the two weeks* was mostly rated as *unacceptable*.

"With all the pros and cons, this training programme was a very useful experience of working in interdisciplinary teams and an insight into how other professions think. It was also useful to work with mentors who have experience in product development."

TRAINING PROGRAMME PARTNERS

Croatian Designers Association (CDA) is a vocational design organization that gathers design practitioners and theorists. Its main goals are to advocate and promote professional and social interests of designers and to raise public awareness of the importance of design for social and economic development. CDA was involved in establishing the School of Design in Zagreb, which has radically changed the framework of design activity and higher design education in Croatia. In 1999 CDA launched a series of biennial Exhibitions of Croatian Design. The activity has increased since 2009 when the association was finally able to organize a regular exhibition program, lectures and public discussions in its own space. From then on, the CDA Gallery has served as a platform for exploring different strategies of exhibiting contemporary design in a gallery context and it has also developed a series of small scale research-based

exhibits exploring relevant topics, thus contributing to the dissemination of design knowledge. Additionally, throughout the years, CDA has developed several activities that foster informal education – Design 101, design festival D Day that serves as a knowledge exchange platform for young designers, and other specialized programmes for professionals such as Typographic course, Design discourse etc.

VERN' University of Applied Sciences is a successful educational institution with the main mission to provide students with professional competencies, entrepreneurship skills and business-orientation by academic excellence and socially responsible entrepreneurial action, through interaction, fulfilment and satisfaction. VERN's institutional goal is to enable the quality, efficient, just and international higher education, which contributes to the competitiveness of Croatian society. Within this goal, VERN's target is to become widely recognized, innovative and entrepreneurial university by the year 2020. One of the most recent VERN' activities – the development of Bachelor's Degree Programme *Business Oriented Design* deals particularly with those goals in relation to design education.

Prostoria is a furniture manufacturing company located near Zagreb. It operates in a space of more than 5000 m2, employs 135 people and is currently present on the European, the USA, South American, Australian, the Middle and Far Eastern markets. It is a young company, but well recognized locally, regionally and internationally. In a 5-year period the company has launched a mixed portfolio of sofas, sofa beds, armchairs, chairs, coffee tables, hangers and accessories, with a yearly growth of 20–30% in sales, mainly due to its fresh and innovative design. Design has been integrated with business from the very start of production owing to the design competition and collaboration with Croatian Designers Association and Croatian designers that have helped to launch of a few runner products that have brought the company great recognition.

Prostoria pursues quality and long-term profitable business growth in an ethical, financially responsible and sustainable manner.

PRACTICING DESIGN 1.0 TRAINING PROGRAMME

CASE STUDY MACEDONIA

PARTNERS

Public Room Skopje (PRS) / Design Organization;
Faculty of Art and Design at the European University, Skopje (EURM) / Educational Institution;
Zavar / Manufacturing Company

INTRODUCTION

The Macedonian training programme was created as a joint effort of all Macedonian project partners: Public Room, the Faculty of Art and Design at the European University and manufacturing company Zavar. Rethinking Design Education study research results showed that the process of formal education of Macedonian designers does not provide them with sufficient knowledge and skills in Design Management (to manage design action and people), Entrepreneurship and Overall Execution Competencies (manifested through the ability to display overall skills in the execution process). Therefore, the focus of the Macedonian training programme was on transferring managerial and business knowledge and skills strongly linked with the design context, and further practical integration of that knowledge within all design process phases. The programme has a strong focus on practical design skills.

TARGETED OUTCOMES

The program intended to provide the students with:

— Increased competencies for Product Design and Development, assisted with a set of tools and methods,
— Self-confidence in creating new products,
— Application of multiple functions in creating new products (e.g., Strategy, Product Management, Marketing, Finance, Industrial Design, Technology, Production, Project Management, Communication, Branding),
— Integration of acquired Business knowledge and skills needed for professional design practice.

TEACHING/LEARNING METHODS

The teaching and learning approach relies on classroom-based education side by side with hands-on experience in the workplace. Respectively, the following didactic elements were applied:

— Lecturing,
— Demonstrating (best practices, examples, evidences),
— Group discussions, meetings and working sessions,
— Hands on learning,
— Teamwork and collaboration,
— Field research,
— Self-studying,
— Presentations,
— Participant-cantered discussion in teams, and
— Workshops.

MENTORS AND LECTURERS

Trainers and lecturers are experts from different fields covering Design Research, Design Methodology, Product Design, Entrepreneurship, Marketing, Presentation Techniques, Strategic Management, Design Management, Visual and Verbal Communication. All mentors and lecturers are representatives from Design Centre Public Room, the Faculty of Art and Design and the Faculty of Economics at the European University, Skopje (EURM) and Zavar Company.

DESIGN MENTORS AND TEACHERS

Public Room – Design Centre
Aleksandar Velinovski – Design Manager/ Mentor and Coordinator;
Marija Novovic Jovanovska / Mentor and Coordinator;
Tamara Georgievska – Designer / Mentor and Coordinator in branding and market positioning (external consultant)

Faculty of Arts and Design, European University, Skopje
Associate Professor Jana Maneva – Chuposka, PhD / Mentor and Coordinator, Design Research;
Associate Professor Gordana Vrencoska, PhD / Mentor and Coordinator, Design Process, Visual Communication;
Assistant Professor Zoran Gjureski,
MA / Concept Development and Model Making;
Teaching Assistant Aleksandra Jovanovska,
MA / Model Making;
Teaching Assistant Blagojce Naumovski,
MA / Model Making;
Elena Makarovska / Technical Coordinator

BUSINESS TEACHERS

Faculty of Economics, European University, Skopje
Professor Lidija Naumovska, PhD /
Business and Management;
Assistant Professor Elizabeta Stameska,
PhD / Business and Management;
Teaching Assistant Verica Najdovska,
MA / Business and Management

Zavar Company
Marta Naumovska Grnarova /
Prototyping, Business and Management;
Violeta Cvetanoska /
Prototyping, Business and Management

KEY LEARNINGS

The cooperation of educational institutions and companies on real life projects that engage larger number of students should be intensified and broadened, since this has proved to be the best way for students to participate in practice based design education. Also, there is a growing need to find more effective ways of transferring economic and business knowledge to students of design, strongly linked with design context.

PARTICIPANTS

Given that the Macedonian partners agreed that pilot training programme firstly should be tested in a partner higher education institution, the participants of the programme were 15 students from first to final years of the Faculty of Art and Design and 3 students from the Faculty of Economics – the European University Skopje. The total number of students was limited to 18.

COMPANY BRIEF

Zavar is a company for production, trade, engineering and services in machine building and construction. In addition, the company is involved in construction and production of decorative elements and unique pieces of furniture made of stainless steel. The company's main role in the training programme was to determine the final project task through a company brief and to enable the production of the prototypes of the final design solutions within the company's technological and production facilities. Furthermore, the company executives gave valuable input for the successful completion of final project tasks and the whole design process conducted within the training programme.

THEME

A Rethink of the Side Table

CONTEXT

a side table can have multiple functions: it can be used as a main table in small spaces, coffee table, extra table for leaving things, placing lamps, decoration, flowers, computer etc.

TARGET GROUP

People who love arts, respect design, travel a lot and are of a higher social status. They belong to middle to middle/high social class with annual revenues exceeding 120.000 EUR. They are also familiar with and love Zavar Design brand and come from Sweden, Great Britain and France.

PRICE POSITIONING

Price should be over 300 EUR, but can be defined more precisely after the research and is expected to be different for different markets.

TECHNICAL REQUIREMENTS

Stainless steel (mirror or satin polished), copper, carbon steel (corroded or burned; painted is not an option because of the 100% recycling brand philosophy). Wood, stone, plastic, marble or glass can be used for the table top. Preferred option is 100% metal but it can be offered in a few variations. Dimension shouldn't exceed 50x50cm and the height can vary depending on the purpose.

DESIGN REQUIREMENTS

Design should be innovative, original, and multifunctional with unique aesthetics, in line or not in line with the existing radiator collections.

DESCRIPTION OF THE TRAINING PROGRAMME

The Macedonian training programme is divided into four consecutive parts plus the final part concerning the final execution process of project tasks conducted mainly in the partner company production facility. It was designed in a way to allow students to learn about all the procedures in the design process ranging from identification of possibilities, design brief, research, creative mapping, idea development, concept development, preparation of model and prototype, and its manufacturing. Economic, business and management topics of the programme support the students' knowledge and skills needed in real-life practice. As in the other two countries, the programme included all necessary conditions for the theoretical and practical application of knowledge, including ''one on one'' mentoring, monitoring of the development process of a product within the team, material input for producing design prototypes, and the exhibition of prototypes in Zagreb and Skopje.

PART 1: INTRODUCTION TO THE TASK AND CONCEPT DEVELOPMENT

DURATION

3 days

The main goal of the first part of the training programme was to train students to develop ideas and creative concepts *for a metal side table.* The students were introduced to the project task. Each group worked on designing a side table for particular market (France, UK and Sweden) together with the appointed mentor. Students were asked to conduct furniture market research for the country for which the product is intended and to

develop a SWOT analysis. Each team developed a mood board based on the target market, and it was presented by the team's representatives. After introducing the students to the topics regarding types of metal, features, product specifications and processing requirements, all three teams were asked to start developing design concepts. The concepts were elaborated in the form of design sketches. Finally, the students were introduced to presentation techniques and then continued with the finalization of their design concepts and preparation for the presentation. While students offered many interesting design concepts, three of them were selected.

TEACHING/LEARNING METHODS

lecturing, skills training, practice based learning, solving and presenting concrete practical assignments, teamwork.

PART 2: MODEL MAKING

DURATION

3 days

The main goal of this part of training was to train students in model making. After having completed the research phase and concept development, students approached model making. The students had a fully equipped workshop at their disposal and the following materials were available: wood, polystyrene, and cardboard in different thicknesses, metal profiles, steel wire etc. Together with their mentors, the students worked on defining the material choices and processing techniques that were most suitable for the shape of the proposed design. Afterwards, they had to prepare and assemble the components of the model, and deliver the final presentation of their models.

The models were presented before a committee composed of the project partners' representatives. The committee chose three models as the most appropriate for the given task. The three selected models, along with technical drawings and presentational drawings were further worked out together with Zavar Company.

TEACHING/LEARNING METHODS

skills training, practice based learning, solving of concrete practical assignments, teamwork, hands-on learning.

PART 3: PROTOTYPING

DURATION

7 days

The main goal of this part of training was to lead students through the process of prototype manufacturing, or in other words, introducing them to manufacturing procedures that represent the transformation of the idea into a materialized product. At this stage, students worked in the production facility of the partner company. They had the opportunity to be directly involved in the drafting process of the selected prototypes, to understand the working processes from a model to a prototype in a selected material, in this case metal. The prototypes were manufactured in the production facility of the partner company Zavar.

TEACHING/LEARNING METHODS

skills training, practice based learning, teamwork, hands-on learning.

PART 4: MARKETING MANAGEMENT, COMMUNICATIONS AND RETAIL

DURATION

2 days

The main purpose of this part of the programme was to clarify the business-client relationship perspective, to equip the students with the ability to think in a business environment and to communicate productively with future clients. The lecturers in this part of the programme were from the Faculty of Economics within EURM. This part of the programme comprises of two parts: theoretical and practical. The theoretical part provided students with an opportunity to get acquainted with economic terms and theories relevant to the design industry. In the practical part students were trained in skills that enable them to apply acquired theoretical knowledge. Students were introduced to topics such as: Marketing Mix, Cost Calculations, Distribution Channels, Product Promotion, Brand Development Strategies, Entrepreneurship/ Entrepreneur Characteristics, Property Protection and Copyright, Business Model Canvas, Brand Strategy, Negotiation and Presentation Techniques. Those theoretical inputs were applied through following practical tasks: calculations of prices in terms of the materials used for a particular design, drafting business model canvas for specific solutions, defining elements for brand development and strategy for brand promotion, role playing in simulation of negotiation and presentation situations.

TEACHING/LEARNING METHODS:

theoretical lecturing, skills training, solving of concrete practical assignments, teamwork.

After the completion of those 4 parts of the training programme, next two months students worked together with their mentors on the manufacturing process of prototypes in the production facility of the partner company.

The involvement of students in this project will be recognized as a mandatory form of internship for students for enrolment in the next academic year of the Faculty of Design and Arts.

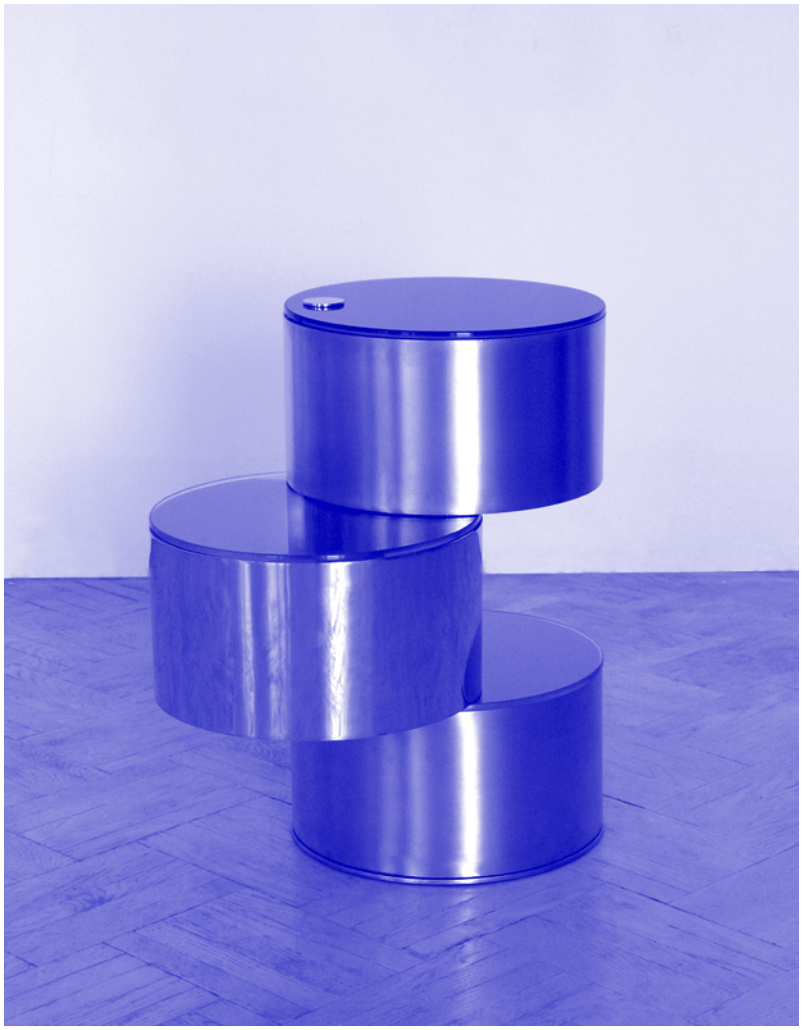
PRODUCT DESCRIPTIONS

SIDE TABLE

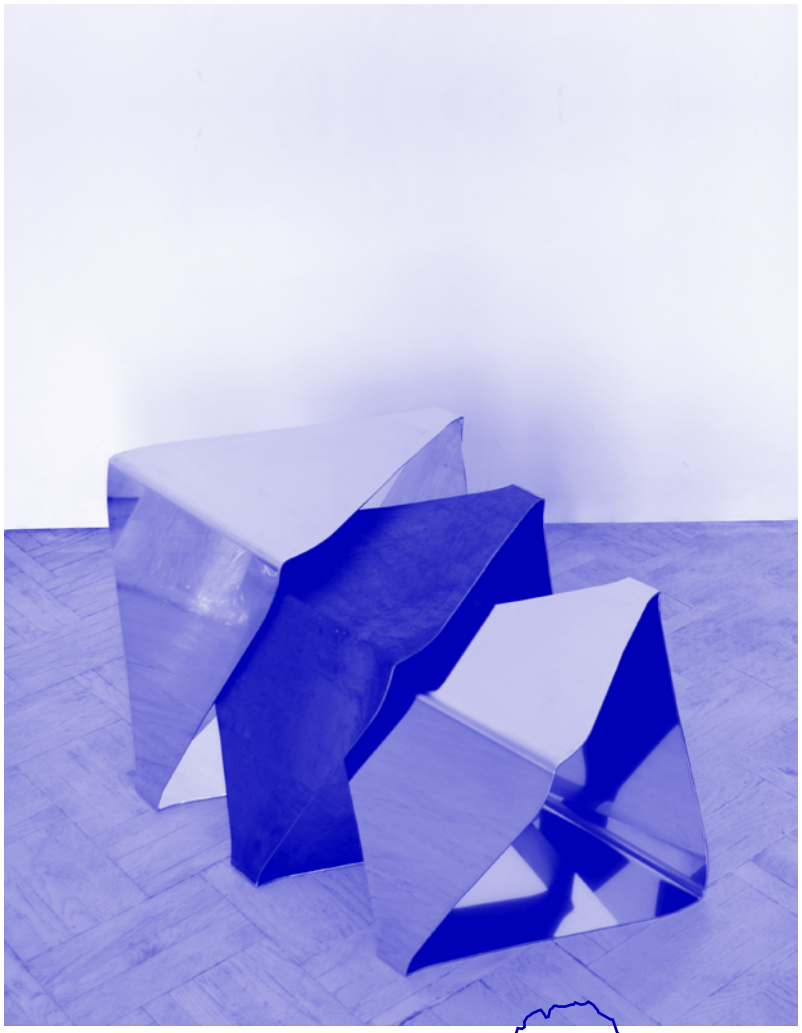
Designer: Danijela Savikj

The design is inspired by Zavar's radiator collections that have a dominant and unique aesthetics. Acknowledging the geometric shapes in the structure of the DNA molecule, the side table consists of four identical triangles merged together in their bases and their edges interchangeably.

The table design is in line with the targeted French market analyses, following the principles of high-quality luxurious furniture and the eclectic style dominant in French interiors. Also, the optical illusion which is often a theme in these interiors and designers' inspiration creating a very intriguing effect, was a challenge to be translated into a piece of furniture while using the elements like angles, shape and materials as well as space and light. Hence, the final design consists of three side tables in different sizes that look different when observed from different angles. Given the materials available, the visual effect and the aesthetic the design was aiming for, it creates an exclusive and lavish look combined with



Side Table, Emilija Srbakoska



Side Table, Danijela Savikj

Aurora Borealis Side Table, Snezhana Davitkova

raw cutting-edge table with a natural look coming in the middle. The materials used in this design are stainless steel for the smallest and the biggest piece, whereas the medium-sized table has an outer surface of corroded metal with the inner surface creating a slight contrast with the black metal. Therefore, the set of three tables creates a balance between the two opposing aesthetics.

SIDE TABLE

Designer: Emilija Srbakoska

The cylindrical form of a stump inspired project. The side table is very simple at first sight; it doesn't take a lot of space but is multifunctional. What makes it multifunctional is its mechanism that allows the table to be separated into three parts that rotate around the mechanism. Every part of the table works as a special area that can be used as a storage space. The design is simple, yet unique so it can fit easily every home or office.

AURORA BOREALIS SIDE TABLE

Designer: Snezhana Davitkova

The side table is inspired by the light, the Northern Lights or the *aurora borealis* in particular, named after Aurora the Roman goddess of dawn and the Greek name for the north wind, Boreas. The appearance of these lights is caused by the interaction of solar wind with the Earth's magnetosphere. Most of the table parts are constructed of highly reflective mirror steel material. The wavy metal bars that form the body of the table are associated with the aurora borealis wavy and curtain like form. The top glass part made of recycled materials resembles ice and comes in many different colours. In short, the design

brings the fascination of the aurora borealis, part of that miraculous light into a home.

TRAINING PROGRAMME PARTNERS

Public Room Skopje (PRS) is a Center for Design and Innovation located in the heart of Skopje. This hybrid space is situated in a building of 1.470m2, where local and international activities are being carried daily. Public Room designed a model for self-sustainability, and as a private non-profit civil society organization, manages to implement design and innovative activities in the whole region and beyond. Activities generated by social innovators, empower the non-profit sector from the region, influence the national cultural policies and intensify the cooperation in the field of culture, arts, design and architecture in relation with business sector. The organization sets up and implements programmes and events for professionals, in order to promote open and democratic societies within the region. In cooperation with well-established cultural, business and educational partners PRS organizes and offers alternative short term training courses in those areas not covered by standard educational programmes. Since 2011 Public Room has been developing and organizing an international platform for design and business exchange – Skopje Design Week with the aim to create public debate, idea development and realization of cultural exchange.

EURM's Faculty of Art and Design was established in 2006 as the pioneer in formal design education in the Republic of Macedonia. It has a mission to train specialized personnel of designers who can implement their knowledge as a creative expression in three major art departments: Graphic Design, Fashion Design and Interior Design. Graduates, educated in accordance with the European and world standards are

qualified to successfully apply their acquired knowledge on the working market both locally and internationally, thus contributing and improving the conditions for establishing recognizable "brands" of Macedonian products. Over the past 10 years the Faculty of Art and Design has built a strong network of partners and collaborators, such as British Council Macedonia, Institute Français, The National Gallery of Macedonia, Macedonian Artisan Trade Organisation, Knauf, Public Room, Osten Gallery, Design Austria and many others. The students regularly participate in graduate shows, Skopje Fashion Weekend, Skopje Design Week and various design competitions, winning many awards and accolades for their projects.

EURM, the Faculty of Economics' aim is pursuing academic success and for this purpose it offers undergraduate and postgraduate studies from the field of financial-banking and tax management, marketing management, health and pharmaceutical management and MBA management. The mission of the Faculty of Economics – EURM is above all, to provide a high –quality business education equal to the best European and world-renowned schools and to prepare students for successful integration in the competitive and changing market society.

Zavar is a family owned company established in 1988. Its main activity is the production of process equipment and pressure tanks from special materials. In 2003 Zavar established Zavar Design brand with the main mission to develop design products made of metal and stainless steel. The company currently employs 60 people and has a turnover of 1.3 million euro in which Zavar Design accounts for 15% of the total business. Zavar Company is an export-oriented company, cooperating with UK, Germany, Switzerland, Greece, Hungary and Italy. The main export products are pressurized process tanks for chemical and pharmaceutical industry, water treatment tanks, stainless steel furniture and accessories for shops and designer

radiators. The company is continuously investing in R&D, innovation and standardization.

APPENDIX

PRACTICING DESIGN 1.0 TRAINING PROGRAMME DETAILED PROGRAMME

UNIT 1	INTRODUCTION TO PROJECT ASSIGNMENT Informing and Problem Framing	
EDUCATORS	Project Managers (Vocational Organisation, Educational Institution, Manufacturing Company) Design and Business Mentors, Teachers, Trainers, Lecturers	
DURATION	2 – 4 days Additional work (Individual and teamwork): 2 days	
LOCATION	Classroom / Manufacturing Company Facility / Field work	
OBJECTIVES	Unit 1: Introduction to Project Assignment has two main objectives. The first is to inform, explain and clarify the project context, its specificities and the assignment. The second is to frame the problem on the basis of the acquired information. Additional objectives include broadening of the professional design and business knowledge and skills, which need to be applied during the assigned projects.	
CONTENT	Design = 60% Theory : Practice = 50%:50%	Design = 60% Theory : Practice = 50%:50%
THEORY	— Introduction to the project scope: information about stakeholders, resources, assignment — Design Research Methods — Design Thinking and Problem Analysis — Observation and Discovery: a) Problem Overview (from different perspectives: history, anthropology, ergonomics, etc.)	— Introduction to Business / Entrepreneurship and Project Management — Fundamentals of Innovation and Commercialization — Introduction to Business Oriented Design Thinking — Introduction to Marketing: Market Analysis, Market Research, Customer Needs

THEORY

b) Introduction to Industry and Trends
c) Index of References
— Identifying opportunities
— Prioritizing opportunities
— Modelling the benefits
— Introduction to Business Communication
— Team Management

PRACTICE

— Initial Project Statement
— Design Research
— Introduction to Materials, Technologies and Production Opportunities
— Determining the Criteria, Objectives and Requirements
— Task Clarification
— Visual Presentation of Researched Materials
— Creating Design Briefs
— Evaluation of Entrepreneurship Potential
— Project Management Phases
— Development of Questionnaires for Performing Market Analysis and Market Research for Customer Needs
— Client Profile
— Oral Presentation of Design Briefs
— Managing Functional Teams

LEARNING OUTCOMES

Upon completion of Unit 1: Introduction to Project Assignment, students will be able to:
— Self-organize project team
— Use convergent thinking to analyse available facts taking into account wider context (history, anthropology, ergonomics, trends, etc.)
— Use divergent thinking in understanding and defining the problem and proposing potential solutions
— Create, conduct and implement questionnaires and interviews for gathering information about potential customers
— Demonstrate communication skills by delivering oral and written presentations of their ideas and design brief for the project
— Verify and combine the importance of business, social and design skills
— Explore new techniques and technologies, group them and identify social trends in order to define design opportunities
— Take responsibility for evaluating and improving activities for given tasks

TEACHING / LEARNING METHODS

— Participant-centred teaching (responsive classroom and workshop approach)
— Mentoring and peer-to-peer learning

TEACHING / LEARNING METHODS

— Lecturing and presenting (theoretical lectures and references; best practices and examples)
— Interdisciplinary teamwork, co-learning, collaboration and interaction (giving/receiving feedback, improvements based on feedback, scenario development, think-pair-share, puzzle, observing, video and photo documentation etc.)
— Field research, field trips, site visits
— Group meetings, working sessions and discussions
— Self studying
— Design and business creative thinking methods (e.g. brainstorming, brainwriting, Gordon's' method, checklist of questions, morphological analysis, bionics, the list of attributes, for and against, synectics, etc.) and decision making methods

Participants are expected to use templates, forms, documents, research materials and equipment for all stages of the process.

PREREQUISITES

Knowledge gained through completion of a Bachelor's degree from either an institute of higher professional education or a university. Students' qualifications are assessed based on portfolio, biography, motivation and intake interview.

UNIT 2 CONCEPTUALIZATION
Idea Generation and Concept Selection

EDUCATORS Project Managers (Vocational Organisation, Educational Institution, Manufacturing Company)
Design and Business Mentors, Teachers, Trainers, Lecturers

DURATION 2 – 4 days
Additional work (Individual and teamwork): 2 days

LOCATION Classroom / Production facility

OBJECTIVES The main objective of Unit 2: Conceptualization is to, based upon the design brief and all the corresponding experiences and acquired knowledge from the previous Unit, start generating ideas, develop several concepts (upon the design and business requirements), evaluate them and select the one concept for future development (for each team of students). Along with participating in the product design process, the goal of this Unit is to train students to address communication and business issues for the purpose of idea and concept presentation.

CONTENT

Design = 60%	Business = 40%
Theory:Practice = 20%:80%	Theory:Practice = 20%:80%

THEORY

— Introduction to Design Methodology — Introduction to Product Design Process	— Learning based on the theory topics delivered in the previous Unit (Business Oriented Design Thinking, Project Management, etc.)

PRACTICE

— Research and Idea Generation — 3D Sketching — Concept Generation — Visual, Ergonomics, Functional, Ecological, Material, Production and Technology Proposals — Concept Presentation and Evaluation — Functional and Feasibility Analysis — SWOT Analyses — Concept Revision — Concept Development — Project Statements	— Identification of Opportunities for the Inclusion of Communication and Business Components into Corresponding Phases of the Design Process

LEARNING OUTCOMES Upon completion of Unit 2: Conceptualization students will be able to:
— Analyse, synthesize and evaluate specialized facts, concepts, procedures, principles and theories to support design concepts
— Interpret, estimate, select, and creatively apply different relative facts, ideas, solutions and procedures required to generate new and valid concepts
— Take part in the interdisciplinary group decision making
— Improve presentations of Project Statements by including information related to materials, technologies and production opportunities as well as to business/commerce related aspects of the project
— Develop sketches and models of first ideas and concepts
— Analyse and valorise the strengths, weaknesses, opportunities and threats (SWOT) of each concept
— Select, clarify, develop and present selected concepts
— Recognize, evaluate and explain the application of creativity and innovation of concepts in relation to business potentials

TEACHING / LEARNING METHODS
— Participant-centred teaching (responsive classroom and workshop approach)
— Mentoring and peer-to-peer learning
— Lecturing and presenting (theoretical lectures and references; best practices and examples)
— Interdisciplinary teamwork, co-learning, collaboration and interaction (giving/receiving feedback, improvements based on feedback, scenarios development, think-pair-share, puzzle, observing, video and photo documentation etc.)
— Field research, field trips, site visits
— Group meetings, working sessions and discussions
— Self studying (individual work)
— Design and Business creative thinking and decision making methods

Participants are expected to use templates, forms, documents, research materials and equipment for all stages of the process.

PREREQUISITES Completion of Unit 1

UNIT 3	SOLUTION GENERATION Concept Development and Modelling	
EDUCATORS	Project Managers (Vocational Organisation, Educational Institution, Manufacturing Company) Design and Business Mentors, Teachers, Trainers, Lecturers	
DURATION	3 days Additional work (Individual and teamwork): 2 days	
LOCATION	Classroom / Production Facility / Field work	
OBJECTIVES	The main goal of Unit 3: Solution Generation is to provide the students with the necessary Design and Business skills needed for further concept development. This Unit is expected to provide students' teams with additional skills and knowledge in relation to Design Management, give deeper insights into Design Process, and navigate them while creating the drafts of their own Business Models.	
CONTENT	Design = 60% Theory:Practice = 30%:70%	Business = 40% Theory:Practice = 30%:70%
THEORY	— Design Management — Product Design Process	— Intellectual Property Protection and Copyright — Project Financing — Business Model Drafting (Business Model Canvas) — Design and Business Contracts
PRACTICE	— 3D Modelling — Physical Model Making — Concept (model Evaluation, Clarification and Development — Material and Dimension Specifications — Technical Documentation Draft — Functional and Standard Analyses — Prototyping Preparation	— Contract Drafting — Intellectual Property Protection and Copyright Plan — Development of Financial and Business Model (Business Model Canvas) — Timeline Related Risk Identification
LEARNING OUTCOMES	Upon completion of the Unit 3: Solution Generation, Students will be able to: — Critically comprehend, evaluate, interpret, estimate and apply special facts, procedures, principles and theories in concept development — Generate solutions based on evaluation of the requirements and specifications — Solve problems related to concept development — Manage communication and interaction with mentors and other teams — Make decisions concerning the intellectual property protection and copyright — Research and articulate contract options — Analyse financing opportunities and select the most appropriate one(s) for the given concept — Develop all elements for the Business Model Canvas — Present concepts to all the programme participants	
TEACHING / LEARNING METHODS	— Participant-centred teaching (responsive classroom and workshop approach) — Mentoring and peer-to-peer learning — Lecturing (theoretical lectures and presentations of specific subjects) — Hands-on learning — Interdisciplinary teamwork, co-learning, collaboration and interaction (giving/receiving feedback, improvements based on feedback, scenarios development, think-pair-share, puzzle, observing, video and photo documentation etc.) — Group meetings, working sessions and discussions — Self studying (individual work) — Design and Business creative thinking and decision making methods Participants are expected to use templates, forms, documents, research materials and equipment for all stages of the process.	
PREREQUI-SITES	Completion of Unit 2	

UNIT 4	SOLUTION DEVELOPMENT Prototyping
EDUCATORS	Project Managers (Vocational Organisation, Educational Institution, Manufacturing Company) Design and Business Mentors, Teachers, Trainers, Lecturers
DURATION	3 days Additional teamwork and time spent on prototype development: 10 days
LOCATION	Classroom / Production facility
OBJECTIVES	The objective of Unit 4: Solution Development is to help students develop their prototypes and define in detail the necessary technical requirements (dimensions, functions, materials and construction) and quality assessments. Furthermore, the goal is to train students to present their project by using previously acquired design and business skills.

CONTENT	Design = 60% Theory:Practice =20%:80%	Business = 40% Theory:Practice = 20%:80%
THEORY	— Brand Development — Visual Identity Development — Technical Drawings — Standardization and Quality Requirements — Introduction to Rapid Prototyping / CNC Prototyping	— Presentation Skills — Negotiation Skills — Brand Development — Brand Communication Strategy — Creative Writing
PRACTICE	— First Prototype Assessment — Material and Construction Definition — Standard Requirements — Technical Drawing / Detailing Quality Analyses — Visual Representation and Product Identity — Visual Communication and Ideas Articulation — Project Statements	— Detecting Elements for Brand Development and Brand Communication Strategy — Playing Negotiation and Presentation Scenarios — Product and Brand Development Strategy — Brand Communication Strategy — Textual and Visual Presentation of the Project for Diverse Audiences

LEARNING OUTCOMES	Upon completion of Unit 4: Solution Development, students will be able to: — Create, evaluate, assess, suggest and apply special facts, procedures, principles and theories in solution / product development — Manage critical and complex communication and interaction between all participants — Define and create in detail technical requirements, including dimensions, material and construction for developing prototype — Analyse and use relevant standards and quality requests — Develop verbal and visual documentation of the process — Create and develop prototype — Define intellectual property protection and copyright for the project/product — Create contract proposals — Explain the advantages of a selected financial model — Revisit and fine-tune Business Model Canvas — Present concept and product development strategy to all the participants — Set tasks for further brand development and brand communication
TEACHING / LEARNING METHODS	— Participant-centred teaching (responsive classroom and workshop approach) — Mentoring and peer-to-peer learning — Lecturing (theoretical lectures and presentations of specific subjects) — Hands-on learning — Interdisciplinary teamwork, co-learning, collaboration and interaction — Group meetings, working sessions and discussions — Self studying (individual work) — Design and Business creative thinking and decision making methods Participants are expected to use templates, forms, documents, research materials and equipment for all stages of the process.
PREREQUI-SITES	Completion of Unit 3

UNIT 5 — FOLLOW UP AND EVALUATION
Prototype Testing, Branding and Promotion

EDUCATORS — Project Managers (Vocational Organisation, Educational Institution, Manufacturing Company)
Design and Business Mentors, Teachers, Trainers, Lecturers

DURATION — 2 months

LOCATION — Classroom / Production facility / Field work

OBJECTIVES — The main objective of the final phase of the project: Follow up and evaluation is to engage students in the manufacturing process of prototypes, to prepare them for effective on-line and face to face communication with teams and mentors and to enable them to assess the effectiveness of the project from the design, marketing and commercial point of view. The first test of success of the final project task is to be evaluated at the exhibition.

CONTENT
Design = 80%
Theory:Practice = 20%:80%
Business = 20%
Theory:Practice = 20%:80%

THEORY
— Verification of the Design and Business Methodology and Process
— Sales and Distribution Strategies

PRACTICE
— Art Direction
— Production of Visual and Verbal Exhibition Material
— Prototypes Exhibition
— Product Testing and Preparation for Production Implementation
— Sales and Distribution Strategy Proposals
— Budgeting PR activities
— Identification and Analysis of Changes to Project Scope, Causes and Effects of Project Changes

LEARNING OUTCOMES — Upon completion of the final stage of the project: Follow up and evaluation: students will be able to:
— Perform complex activities and combine all the acquired knowledge and skills in all Units of the training programme
— Verbally and visually present the product and brand and advocate for proposed solutions
— Contribute effectively to the exhibition preparation and opening
— Promote own product
— Improve product based on the results of product testing and its preparation for market implementation
— Evaluate the entire process of developing the product as solution to the problem

LEARNING OUTCOMES — — Highlight necessary skills and tools to be used in future to implement these activities

TEACHING / LEARNING METHODS
— Participant-centred teaching (responsive classroom and workshop approach)
— Mentoring and peer-to-peer learning
— Hands-on learning
— Interdisciplinary teamwork, co-learning, collaboration and interaction
— Group meetings, working sessions and discussions
— Self studying (individual work)

PREREQUISITES — Completion of Unit 4

RECOMMENDED LITERATURE

DESIGN

Baxter, M. (2002), Product design, A practical guide to systematic methods of new product development, Nelson Thornes Ltd., Cheltenham, UK.

Cross, N. (2006), Designerly Ways of Knowing, Springer-Verlag, London.

Laurel, B. (2003), Design research, methods and perspectives, The MIT Press, Cambridge, MA / London.

Lefteri C. (2014), Materials for Design, Laurence King Publishing, Ltd., UK.

Parsons, T. (2009), Thinking Objects: Contemporary Approaches to Product Design, AVA Publishing, Switzerland.

Ulrich, K. T. and Steven D. Eppinger, S. D. (2016), Product Design and Development, Sixth Edition, McGraw-Hill, New York.

BUSINESS

Bangs, D.H. (2002), Market Planning Guide, Kaplan Publishing.

Bangs, D. Jr. (2005), Business Plans Made Easy, Entrepreneur Press.

Bangs, D.H. (1996), Business Planning Guide, Kaplan Publishing.

Fisher, R., Ury, W.L., Patton, B. (1991), Getting to Yes: Negotiating Agreement Without Giving In, New York: Penguin Books.

Hybels, S., Weaver II, R.L. (2014), Communicating Effectively, McGraw-Hill.

Osterwalder, A., Pigneur, Y. (2014), Business Model Generation - A Handbook for Visionaries, Game Changers, and Challengers. Hoboken (NJ): John Wiley and Sons, Inc.

NOTES

PROJECT PARTNERS

Austria

designaustria®

Croatia

HDD
hrvatsko
dizajnersko
društvo

VERN'
VELEUČILIŠTE

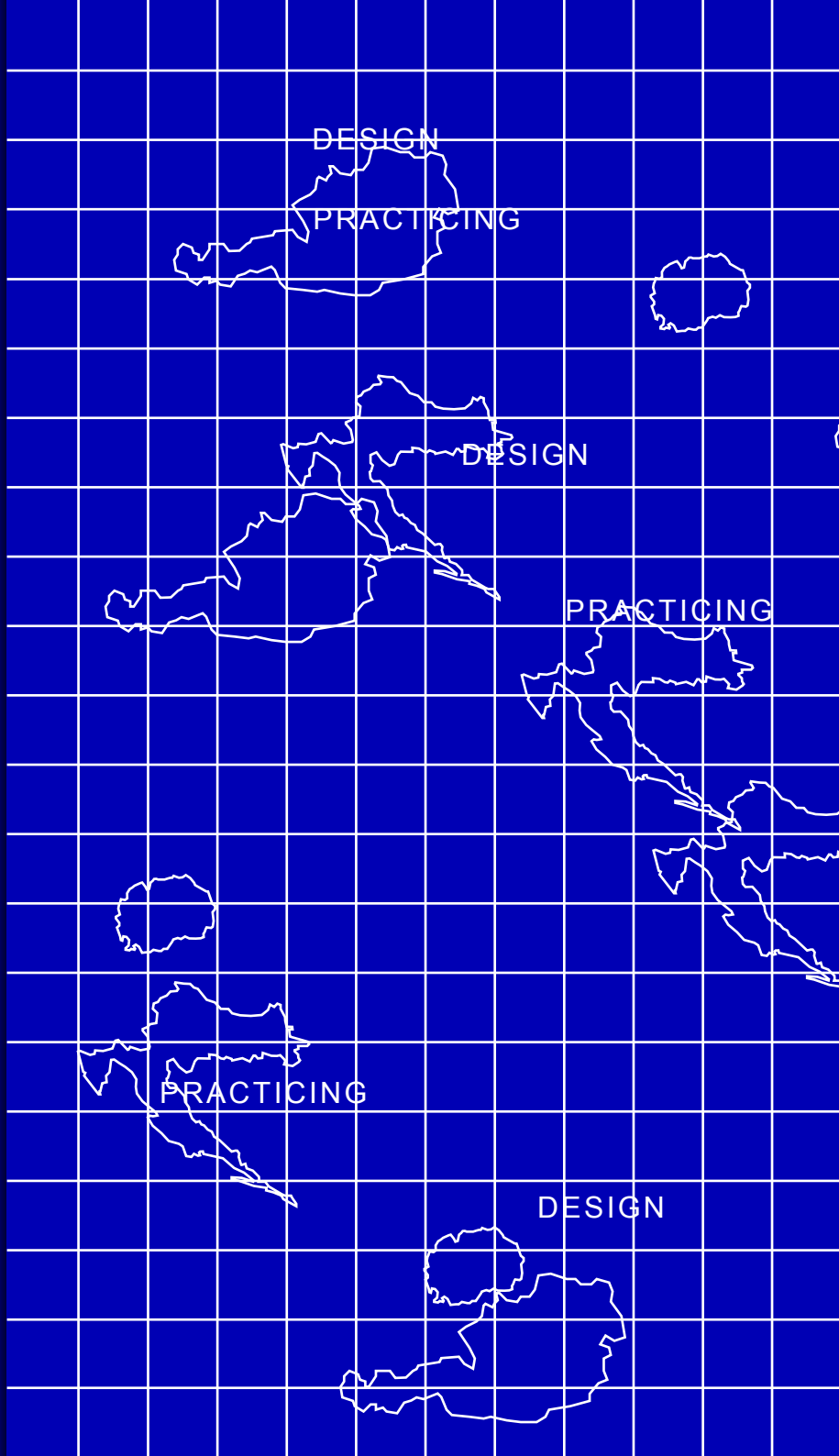
prostoria

Macedonia

PUBLIC ROOM

EUROPEAN
UNIVERSITY
R. MACEDONIA

ZAVAR
design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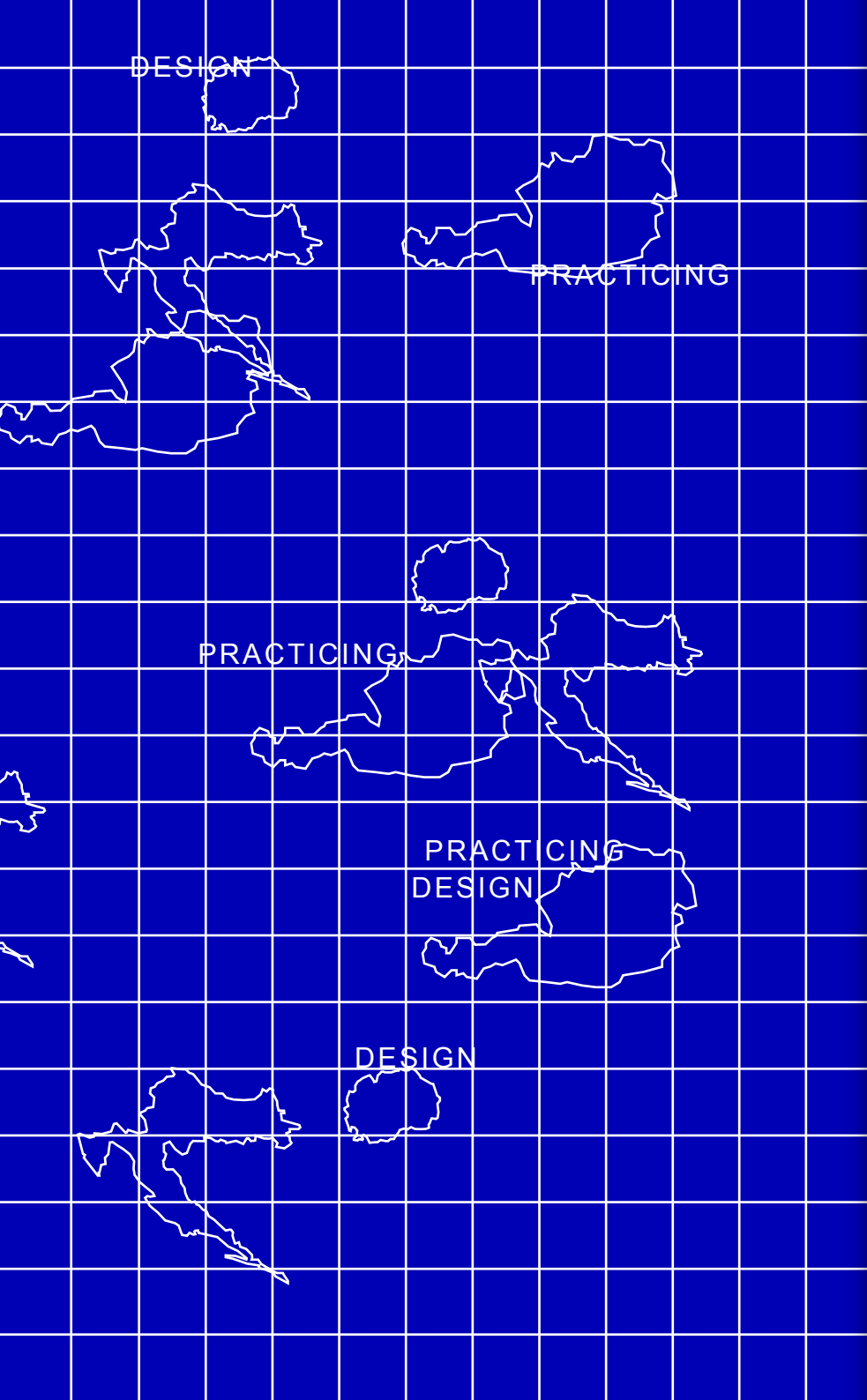
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