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OPEN ACCESS CONTENTS ON DESIGN FOR EQUALITY, DIVERSITY AND INCLUSION  
FOR HIGHER EDUCATION PROGRAMMES

### **D 3.1.1. Development of a generalized teaching framework on Design for EDI**

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# 1. Introduction and Purpose of the Report

WP3 aims at developing replicable and scalable methodologies for the design of new teaching contents on Design for Equality, Diversity, and Inclusion (EDI) for different fields (i.e., product design, service design, communication, architecture, etc.). Information for the creation of themed contents, lectures and seminars for undergraduate (UG) and postgraduate (PG) modules should be created in an accessible way.

Four partner organisations – STU, UNICH, ASP, and ELISAVA (UNIFI is a supporting institution) – cooperate to develop a generalised teaching framework on Design for EDI based on the results produced in 2.3. and 2.4. deliverables. The result of A 3.1. is a document containing a proposal for a generalised teaching model on Design for EDI.

This document contains the teaching methodologies to use, the nature of teaching contents, the modalities for content delivery as well as the expected results that students are asked to achieve (e.g., the nature of inclusive design projects and the correlation with the assessment criteria set for Design for EDI). An open access report containing a synthesis of materials produced will be released through the project website and will produce a reference framework to be tested in A 3.2.

An outline of the A 3.1. activities and their implications within the EDIDesK project are shown below.

Effect	Proposal for a generalised Teaching Model on Design for EDI
<b>Quantitative indicators (as per KPI, see D.1.1.2.)</b>	Quantitative indicators: Not applicable.
<b>Efficacy</b>	Proposal for a generalised teaching model on Design for EDI, including teaching methodologies to use, the nature of contents, the modalities for content delivery, as well as the expected results that students are asked to achieve.
<b>Expected Results</b>	Generalised Teaching Model on Design for EDI.
<b>Links with Activities (As of WP2)</b>	Foundation elements for the progression of work with A 3.2. where data discussed in this report will be tested in a real studio-based teaching and learning activities with students, in four countries (Italy, Poland, Slovakia, and Spain).
<b>Impacts</b>	Data developed in A 3.1. will be used to continue the work for A 3.2. and A 3.3.

## 2. Methodology

### 2.1 Selection of Subjects/Modules in Terms of the Design Field

One of the goals of activity A 3.1. is to develop a framework with new **teaching contents on Design for EDI in five different design fields** (architecture, product design, system design<sup>1</sup>, communication design, and digital design) **to be considered for the pilot tests with students and stakeholders** in the next activity A 3.2. of the EDIDesK project.

<sup>1</sup> The system design field gathers multiple disciplines. By definition, system design fosters the development of product-service solutions (PSS), which are the combination of services, products (physical and/or digital), and strategic communication.

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Based on the report D 2.1.1. “Research and analysis of teaching contents on Design and EDI”, we can identify and select various design subjects/modules in different design fields with the highest EDI potential (level 1-5).

Module Evaluation based on EDI Contents Covered (EDI potential) of selected modules was conducted using a 5-level assessment scale comprising:

- **Level 1.** The module only covers selected issues about EDI.
- **Level 2.** The module covers selected issues about EDI, and some student works show elements concerning EDI issues.
- **Level 3.** The module covers selected issues about EDI, and most of the student work shows elements concerning EDI issues.
- **Level 4.** The module covers selected EDI issues, most student works include elements concerning EDI issues, and a cooperation with an external partner in the area of EDI is carried out.
- **Level 5.** The module is entirely/fully focused on EDI issues, and all student works properly address EDI issues.

Combination between EDI Levels (1-5) and duration of the module (short-mid-long) and suggestion on the modules in relation to levels is described in Table 1.

**Table 1** – EDI Levels and duration of the modules

EDI	Short length modules (up to 20 h)	Mid length modules (20 - 50 h)	Long length modules (50+ h)
<b>Level 1</b>	X		
<b>Level 2</b>	X	X (optional)	
<b>Level 3</b>	X	X	
<b>Level 4</b>		X	X (optional)
<b>Level 5</b>		X	X (optional)

Subjects/modules are related to different design fields based on classification related to macro-design fields rather than the subject itself, because in design disciplines a subject is often covered by different disciplines, which are described in the Table 2.

**Table 2** – Classification of design fields

Macro-design fields	Related disciplines or disciplines involved/correlated
<b>Architecture</b>	Architecture, Urban Planning, Interior Design, Exhibition Design, Landscape Design, Garden Design, Retail Design
<b>Product Design</b>	Industrial Design, Product Design, Human-Centred Design, Digital and Interaction Design (physical applications), UX Design, Ergonomic Design, Assistive Technology

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<b>Communication Design</b>	Graphic Design, Communication Design, Visual Design, Branding, Corporate Communication, Environmental Communication, Publishing/Publication Design, Advertising
<b>Digital Design</b>	UI/UX Design, Digital and Interaction Design (digital applications), App Design, Web-design, Design of IoT applications, Game Design, Media Design, Other Digital Fields (e.g. AI/VR/AR, etc.)
<b>System Design</b>	Product-Service System Design (PSS), Service Design, UX Design, Strategic Communication, Strategy Design, Critical Design or Discursive Design, Digital and Interaction Design (product and digital design combined)

## 2.2 Selection of Methods of Inclusive Teaching and Learning for EDI modules

EDI modules should be created in an accessible way. Therefore, it is necessary to select the most suitable methods of inclusive teaching and learning for EDI modules. Guidelines and methodologies for the design of new inclusive teaching modules will be tested in A 3.2. with students at participating organisations (universities) to assess the correctness of findings produced, the consistency of the inclusive teaching methodologies, and the activities to run in a studio environment.

Based on the database of the teaching methodologies, tools and guidelines for EDI in the report D 2.2.1. “Digital and traditional teaching and learning methodologies for Design and Design-related programmes”, we can identify and select the most inclusive teaching and learning methodologies with the potential for EDI.

Different methods of inclusive teaching and learning were analysed and discussed during the workshop in Katowice the 25<sup>th</sup> of October 2024, where all partners of the EDIDesK project presented different types of EDI modules (Figure 1), contents and student assignments (Figure 2) and competencies. The partners reviewed each section/stage of the module and discussed the experiences and evaluated the results. A more detailed description of the implementation of educational methods in selected EDI modules and courses is provided in Sections 3 and 4.

## 2.3 Selection of Topics and Contents Related to Design for EDI

The collection of all data gathered in the previous activities allowed to generate the needed information from which to extract data and patterns useful to generalize the most important topics and contents related to Design and EDI in different design fields such as Architecture, Product Design, Service Design, etc. These data are presented in the report D 2.3.1. “Qualitative and Quantitative Analyses of Best Practices: Contents and Teaching Methodologies”. The identification of a set of best practices among modules, contents, and teaching methodologies is a very important part of this project and constitutes the backbone for a smooth progression with the activities planned for the remaining WPs. A more detailed description of the most important topics and contents related to selected EDI modules and courses is provided in Chapter 4.

## 2.4 Specification of Student Assignments and Activities on Design for EDI

To reflect diversity of learners, various tasks in different modes of presentation and elaboration should be offered to them in the course/module related to Design and EDI in different design fields. Moreover, there should be a possibility to choose individual or group work when elaborating the selected tasks

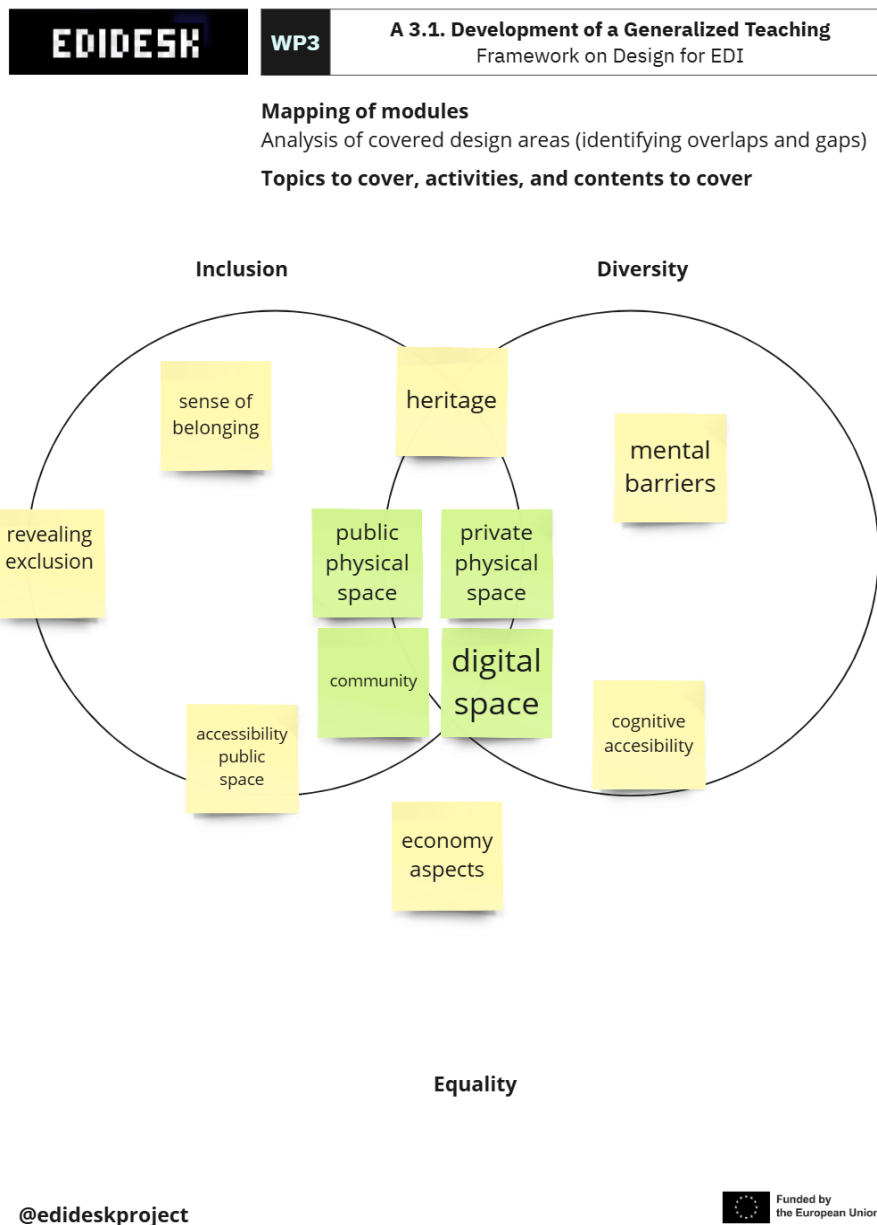
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and use multisensory ways of presentation to reflect various sensory perception abilities and learning styles. For example, there are three types of assignments to choose from in the Universal Design course in the study program Architecture and Urban Planning (FAD STU):

1. **A graphic poster** that represents analyses of selected public space or building according to Design for All/Universal Design,
2. **A written essay** on selected topics related to Equality, Diversity, and Inclusion (EDI),
3. **A document of accessibility survey** from the position of various users, including people with disabilities.

The first assignment is suitable for students with visual modal preferences, and the second assignment fits students with read/write and auditory preferences. The third assignment reflects the kinaesthetic preferences of the students, who learn more by using a body movement.

A more detailed description of the student assignments and activities related to selected EDI modules and courses is provided in Chapter 4.

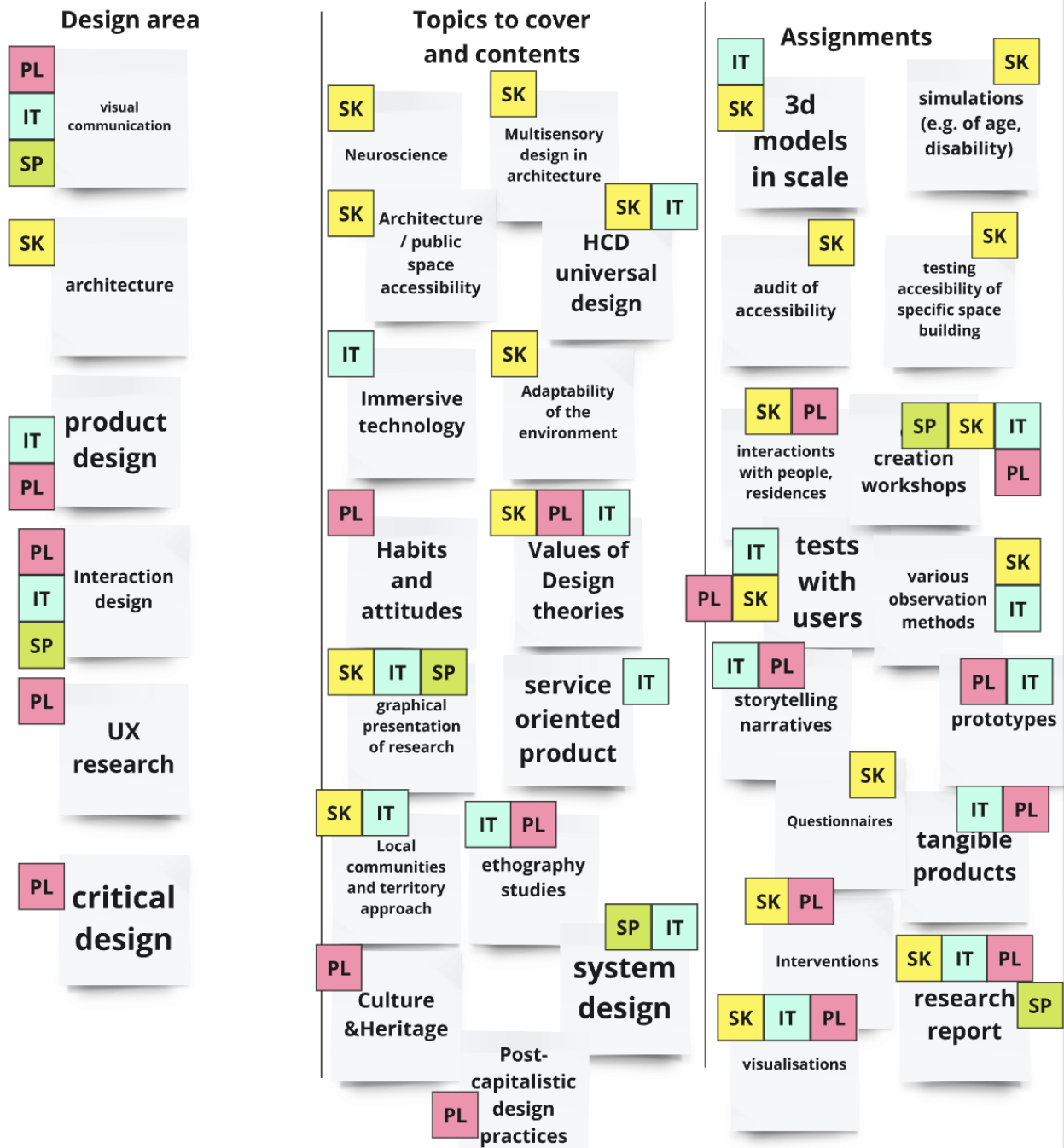


**Figure 1** – Mapping of modules during the workshop in Katowice on 25<sup>th</sup> October 2024.

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Generalized Teaching Framework on Design for EDI  
- analysis and discussion



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Figure 2 – Mapping of topics and assignments during the workshop in Katowice on 25<sup>th</sup> October 2024.

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## 2.5 Expected Results of Teaching and Student Assessment

The competency framework for students is an integral part of this research, complementing its focus on EDI-oriented educational objectives. It outlines the **competencies that students are expected to develop**. This set of competences applies universally to the educational process involved in EDI-oriented teaching, and as such should be considered and applied in both digital and non-digital learning environments.

The competency framework for students is described in the report D 2.4.1. “Virtuous contents and methodologies for promising replications into digital environments”. By employing this **competency framework**, alongside the EDI-oriented teaching content, academic teachers can utilize the tools more effectively, with a clear focus on the desired student outcomes and the competencies they aim to achieve. A more detailed description of the expected results of teaching and student assessment related to selected EDI modules and courses is provided in Chapters 5 and 6.

## 3. Teaching and Learning Methodologies for EDI

Higher education embraces a huge diversity of people with various characteristics as well as physical, sensory, learning, and communication differences that should be reflected in the teaching and learning processes. Students also have differences in the attention and pace of their work and learning. Therefore, it is necessary to respect the differences in learning and working abilities of individuals by using the human/student-centred methods, such as Universal Design for Learning, inclusive blended learning, multisensory and interactive forms etc.

### 3.1 Universal Design for Learning

The Universal Design for Learning (UDL) method was developed by Rose and Mayer (2008) in connection with cognitive psychology, taking into account various abilities and needs of students. The UDL method is based on understanding of different learning and communication styles, abilities and individual differences connected with three networks of human brain activities (Hehir and Katzman, 2012, p. 103):

- **Recognition network** – serves to receive, identify and interpret the various information perceived by the sensory organs (vision, touch, hearing, smell, etc.),
- **Strategic network** – determines how we plan, implement, and monitor our activities,
- **Affective network** – relates to motivation and interest in the activities.

Based on these three networks, Rose et al. (2008, p. 46) propose three basic principles of UDL method to achieve inclusive pedagogy:

- **Multiple means of representation** – by using multisensory ways of presentation to reflect various sensory perception abilities,
- **Multiple means of expression** – by providing students to choose mode of elaboration and presentation of the tasks and outputs (e.g. written, oral, audio-visual, graphical, etc.),
- **Multiple means of engagement** – by using different forms of engaging students in various activities, for example in the form of individual or group work, hands-on and interactive work,

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etc. (Behling and Hart, 2008, Edyburn, 2011, Ceresnova and Rollova, 2015, Ceresnova et al., 2017).

The UDL method provides solutions that are flexible and adaptable to various abilities and learning style preferences of each person. The UDL method is very useful and effective in responding to this variety of perception and communication to achieve better students' motivation and finally better learning outputs. In addition, multiple modes of representation, expression and engagement encourage students to each develop different learning styles and ways of processing information.

### 3.2 Multisensory and Interactive Forms of Teaching and Learning

Learning outcomes are closely related to the level of how teaching instruction respects and supports various learning styles and therefore it is important to use multisensory and interactive forms, including several ways of sensory perception and active involvement of participants.

Information and communication technologies can help to achieve a greater flexibility and adaptability to diverse requirements of students, for example by enabling the transformation of visual formats into audio or tactile formats. Interactive technologies can also help to more activate all learners by using interactive whiteboards, models, simulations, and other innovative tools to achieve the efficiency, attractiveness, and accessibility of education for all.

### 3.3 General Framework of Inclusive Teaching and Learning Methods for EDI

Based on the results of previous research in WP2, analyses and discussion during the workshop in Katowice the 25<sup>th</sup> of October 2024, the general framework of inclusive teaching and learning methods consists of different student-centred (human-centred) methods:

- **One-to-One Consultations:** Providing personalized guidance to help students navigate their projects and address individual challenges.
- **Collaborative Learning:** Encouraging students to work together on projects, fostering a sense of community and shared responsibility.
- **Teamwork with Self-Reflection:** Establishing an understanding of each member's strengths and skills. This process not only allows for individual development but also highlights the synergy created through collaborative efforts.
- **Hands-On Learning:** Engaging students in practical, experiential learning activities that reinforce theoretical concepts.
- **Peer Support and Feedback:** Encouraging students to help one another, facilitating a culture of constructive feedback among peers.
- **Flexible Tasks:** Designing assignments that students can adjust according to their individual skills, values, and beliefs, promoting personalization in their learning experience.
- **Collaborative Reading:** Assigning specific chapters for students to read together and discuss, enhancing their understanding and identifying practical applications in design practice.
- **Understanding Students' Skills:** Assessing the skill levels of students at the start of the course, especially in postgraduate studies where students may have diverse backgrounds and experiences.

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- **Motivation to Experiment:** Fostering an environment where students feel encouraged to experiment and understand that failure is a valuable part of the learning process—it's acceptable to fail.
- **Safe Environment for Feedback:** Creating a judgment-free space where students feel comfortable giving and receiving feedback. For example, students can prepare questions about their projects for the audience, prompting them to reflect on any gaps in their work or areas lacking supporting arguments. Additionally, reinforcing the idea that there are no "stupid questions" from the beginning of the course helps alleviate students' fears about their competence or education.
- **Guidance for Self-Assessment:** Encouraging students to engage in self-reflection, such as completing sentences like: “What I like most about my project is...”, and “In the next project, I would like to see...”

## 4. Teaching Models on Design for EDI

Teaching models on design for EDI derive from the nature of contents in the various design fields and modalities for content delivery. Considered design fields consist of architecture, urban design, interior design, product design, service design, social design, visual communication, and others. Each field has its content and key topics, in which EDI can be reflected. Regarding the modalities for content delivery, they are composed of presenting and consolidating contents through lectures, exercises, workshops, and discussion topics.

### 4.1 Contents and Modalities for Content Delivery

There are several ways of delivering content across educational levels. Focusing on the modalities for content delivery, undergraduate (UG) bachelor’s degree program and postgraduate (PG) master’s degree programs are considered. Moreover, the issue also concerns life-long courses intended not only for students, but also for the public. Modalities for providing content include not only the traditional way of receiving information from lectures, but also more innovative and active forms of learning with the opportunity to engage in exercises, workshops, or discussion topics.

#### 4.1.1 Architecture – Universal Design Course

Table 3 describes the proposal of a teaching model on Design for EDI within a theoretical and practical framework in the field of architecture and urban planning in undergraduate (bachelor) program.

**Table 3** – Universal Design Course, Faculty of Architecture and Design STU in Bratislava.

Topic	Activity / content	Modalities and duration in hours
1. Human-centred Design	Basic terminology and methodology of Inclusive Design, Design for All, Universal Design (7 principles), legislation and standards	Lecture (2 hours)

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<b>2. Diversity of people</b>	Experience the built environment from the position of person with limited mobility, sight, and orientation	Empathic simulation exercises (1 hour per each group of 15-20 students = 4-5 hours), Discussions with diverse users
<b>3. Universal Design of public spaces</b>	Principles of UD in exterior spaces used for public, examples of good practices	Lecture and case studies (1 hour)
<b>4. Inclusive learning environment</b>	Integration vs. inclusion, Universal Design for Learning, examples of good practices	Lecture and case studies (1 hour)
<b>5. Universal Design of public buildings</b>	Principles of UD in several types of public buildings (cultural, sports, workspaces, shops, and services etc.)	Lecture and case studies (1 hour per each type of buildings = 5 hours)
<b>6. Universal Design of residential buildings and social care facilities</b>	Adaptable and accessible housing, independent living, assistive technologies...	Lecture and case studies (1 hour)
<b>7. Multisensoriality and wayfinding</b>	Principles of multisensory information and wayfinding systems	Lecture and case studies (2 hours)
<b>8. Analyses of accessibility and UD principles in selected buildings or public spaces</b>	Implementing theory into practice	Seminar works, on-site surveys (e.g. accessibility audit), workshops, consultations, individual and group work (15 hours)

#### 4.1.2 Architecture – Design Studio

Table 4 presents the proposal of a teaching model on Design for EDI within a practical framework in the field of architecture and urban planning in undergraduate (bachelor) and postgraduate (master) programs.

**Table 4** – Design Studio, Faculty of Architecture and Design STU in Bratislava.

Topic	Activity / content	Modalities and duration in hours
<b>1. Assignment – several types of buildings</b>	Reference overview – selected examples of similar types of buildings with a focus on analysis from the user perspective	Consultations and presentations of selected examples (5 hours)
<b>2. Input analysis of the selected environment</b>	Site analyses, transportation, pedestrian access, greenery, analysis of user needs, etc.	On-site visit, participatory planning, consultations (5 hours)
<b>3. Work on the assignment</b>	Ideas and sketches, analysis of site plans and floor plans from the user	Consultations, presentations and critics (preliminary evaluations)

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	perspective, structures, shapes, working models, testing with users	40 hours
<b>4. Finalization</b>	Project documentation, visualisations, presentations, physical models	Consultations and final presentation and evaluation 30 hours

### 4.1.3 System Design

This section offers proposals of teaching models on Design for EDI within the theoretical and practical framework in the field of System Design / Product-Service System Design (PSS) in undergraduate (bachelor) and postgraduate (master) programs (Table 5):

- **Teaching offer 1 (service-product concentration):** 1.A. “Innovation Design” (UG program, University in Chieti – Pescara), 1.B. “Service Design” (PG program, University of Chieti-Pescara),
- **Teaching offer 2 (service-communication concentration):** 2.A. “Media and Experience Design” (UG program, University in Chieti – Pescara), 2.B “Strategic Communication” (PG program, University of Chieti-Pescara).

**Table 5** – System Design / Product-Service System Design, University in Chieti – Pescara (UNICH)

Topic	Activity / content	Modalities and duration in hours
<b>1. Design and Inclusivity</b>	<ul style="list-style-type: none"> <li>• Introduction to inclusivity in the System Design domain (according to teaching offer 1 or 2).</li> <li>• Traditional approaches and innovative market scenarios.</li> <li>• Opportunity for system/PSS designers (according to teaching offer 1 or 2).</li> </ul>	Lectures + Case studies (4 hours).
<b>2. EDI in Design</b>	<ul style="list-style-type: none"> <li>• Basic terminology and the concept of EDI in Design studies.</li> <li>• EDI-related societal scenarios (according to teaching offer 1 or 2).</li> <li>• Main references in the field such as authors, theories, designers, case studies, companies, etc. (according to teaching offer 1 or 2).</li> </ul>	Lectures (2 hours).
<b>3. Design culture on EDI</b>	<ul style="list-style-type: none"> <li>• The impact of EDI into design practices at the system/PSS design level (according to teaching offer 1 or 2).</li> </ul>	Lectures + Case studies (4 hours).

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	<ul style="list-style-type: none"> <li>• The contribution of system/PSS design to EDI-oriented projects (according to teaching offer 1 or 2).</li> <li>• Relevance for system/PSS designers.</li> <li>• Potential applications at the PSS level (according to teaching offer 1 or 2).</li> </ul>	
<b>4. Inclusive solutions (system design approach)</b>	<ul style="list-style-type: none"> <li>• Definition and features of an inclusive system-/PSS-oriented solution, and methods for effective solutions (according to teaching offer 1 or 2).</li> </ul>	Lectures + Case studies (4 hours).
<b>5. Design research processes (desk-based)</b>	<ul style="list-style-type: none"> <li>• Desk-based research (primary and secondary methods to collect sources).</li> <li>• User analysis and case study analysis.</li> <li>• Use of research data in Design.</li> </ul>	Lectures (4 hours).
<b>6. Innovative design and research processes (on field)</b>	<ul style="list-style-type: none"> <li>• Field studies (according to teaching offer 1 or 2).</li> <li>• User observation (according to teaching offer 1 or 2).</li> <li>• Ethnography.</li> <li>• Questionnaires.</li> </ul> <p>Use of research data in Design.</p>	Lectures (4 hours)
<b>7. Design and development of inclusive system-/PSS-oriented solutions (all teaching offer)</b>	<ul style="list-style-type: none"> <li>• Design and development of inclusive system-/PSS-oriented solution (according to teaching offer 1 or 2): <ul style="list-style-type: none"> <li>○ Design Brief.</li> <li>○ Concept Design.</li> <li>○ Final Design.</li> </ul> </li> </ul>	<p>Studio activity (52 hours) as follow:</p> <ul style="list-style-type: none"> <li>• 16 hours.</li> <li>• 10 hours.</li> </ul> <p>26 hours (including 8., 9., and 10.)</p>
<b>8. Manufacturing /prototyping techniques (social and environmental sustainability)</b>	<ul style="list-style-type: none"> <li>• Choose manufacturing/prototyping techniques that consider social and environmental sustainability criteria (according to teaching offer 1 or 2).</li> <li>• Choose suitable materials/digital media for industrial applications (according to teaching offer 1 or 2).</li> </ul>	Studio activity (4 hours)

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<b>9. Branding and promotion</b>	<ul style="list-style-type: none"> <li>Development of product branding (shapes, colours, finishing, logos, etc.).</li> </ul>	Studio activity (2 hours)
<b>10. Tests and simulation</b>	<ul style="list-style-type: none"> <li>Running real tests and/or full digital simulations of the proposed solutions with pre-identified users to assess the project's adequacy (according to teaching offer 1 or 2).</li> </ul>	Studio activity (2 hours)

#### 4.1.4 Product Design – Research and Discursive Design

This part discusses proposals of teaching models on Design for EDI within the theoretical and practical framework in the field of product design, research and discursive design in postgraduate (master) programs (Tables 6, 7, 8):

- **Form and meaning – supplementary course**, practical subject, elective course (PG program, Academy of Fine Arts and Design in Katowice),
- **UX research – supplementary module**, practical subject, elective course – 1<sup>st</sup> semester (PG program, Academy of Fine Arts and Design in Katowice),
- **Product design – design studio**, practical subject, elective course – 1<sup>st</sup> semester (PG program, Academy of Fine Arts and Design in Katowice).

**Table 6** – Form and meaning - supplementary course, Academy of Fine Arts and Design in Katowice (ASP).

Topic	Activity / content	Modalities and duration in hours
<p><b>How affirmative design practices reinforce EDI issues?</b></p> <p><b>Post-capitalistic design practices and alternative forms of organising</b></p> <p><b>Design &amp; inequality</b></p> <p><b>Value Theories &amp; Design</b></p>	<p>Students will conduct a personal design research project based on a shared brief. The brief will be open ended, leaving space for personal interpretation and allowing for aligning it to own interests and values. The outcome will be a design artifact: prototype, visualisation, diagram etc. and will be presented during the final exam and consulted via bi-weekly feedback sessions.</p>	<p><b>Study trip to the LUFT Association</b> – observation, conversation, interviews (5 hours).</p> <p><b>Design workshops</b> – design process, idea generation, identity analysis, learning by doing (40 hours).</p> <p><b>Prototyping workshops</b> – 3D modelling, mock-ups, learning by doing (40 hours).</p> <p><b>Prototype testing workshops</b> (5 hours).</p> <p><b>Presentation of project results to LUFT Association members</b> – presentation of projects, overview of defined identity-related issues, prototype presentations, discussion (5 hours).</p>

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		<p><b>Study trip to the LUFT Association</b> –supervision of the implementation of projects into serial production (20 hours).</p> <p><b>Public presentation of project outcomes</b> (5 hours).</p>
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**Table 7** – UX research – supplementary module, Academy of Fine Arts and Design in Katowice (ASP)

Topic	Activity / content	Modalities and duration in hours
<b>1 Human Decision-Making Process</b>	Analysis of a selected chapter from the book Thinking, Fast and Slow by Daniel Kahneman.	Presentation prepared by students (8h)
<b>2 Introduction to:</b>		
<ul style="list-style-type: none"> <li>• <b>user diversity</b></li> <li>• <b>design research methods</b></li> <li>• <b>data visualisation</b></li> </ul>	Short exercises done during the classes finalize with reflection and discussion.	Workshop (12h)
<b>3 Research by doing:</b>		
<ul style="list-style-type: none"> <li>• <b>establishing users' group</b></li> <li>• <b>establishing research questions</b></li> <li>• <b>building research scenario, selecting research methods</b></li> <li>• <b>designing data visualisation</b></li> </ul>	<ul style="list-style-type: none"> <li>• Conducting research.</li> <li>• Preparing presentation of the research status during the classes.</li> <li>• Writing research report.</li> </ul>	Learning by doing (40h)

**Table 8** – Product Design – design studio, Academy of Fine Arts and Design in Katowice (ASP)

Topic	Activity / content	Modalities and duration in hours
<b>Product design for a handicraft cooperative of people with disabilities.</b>	Conduct a design process for a product manufactured by people with disabilities.	design studio with workshop (30 h)

#### 4.1.5 Product Design – Design and Innovation

This section presents the proposal of a teaching model on Design for EDI within a practical framework in the field of product design in undergraduate (bachelor) program. This teaching model is focused on the development of the final thesis project in the bachelor program Design and Innovation at ELISAVA Barcelona School of Design and Engineering (Table 9).

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**Table 9** – Product Design - final thesis project, ELISAVA.

Topic	Activity / content	Modalities and duration in hours
<b>1. Human-centred Design and co-design</b>	Basic terminology, history, concepts and overall knowledge of participation in Design, from Participatory Design to Human-Centred Design to Co-Design	Lecture (2h)
<b>2. Inclusive education</b>	Workshop on enabling students in giving feedback on making education more inclusive	Workshop (1h)
<b>3. Community-centred design</b>	Basic terminology, history, concepts and overall knowledge of co-designing and participating in communities, from local to online communities	Lecture (1h)
<b>4. EDI and digital tools and culture</b>	The current role of EDI in the development of digital tools (software, platforms, AI) and overall digital culture, criticisms of current status and discussion over potential future directions of improvement	Lecture (2h)

#### 4.1.6 Digital Design

This part presents the proposal of a teaching model on Design for EDI within theoretical and practical framework in the field of digital design in postgraduate (master) program at the University of Florence (UNIFI) (Table 10):

- **Digital Design Laboratory** - Topics: Interaction Design, Design of IoT applications/Smart Object, Digital Do It Yourself (DiDIY). *In collaboration with module Informatics for Design.*

**Table 10** – Digital Design Laboratory, UNIFI.

Topic	Activity / content	Modalities and duration in hours
<b>1. Design and Inclusivity</b>	<ul style="list-style-type: none"> <li>• Introduction to inclusivity in the digital design domain.</li> <li>• Examination of traditional approaches and exploration of innovative market scenarios.</li> <li>• Opportunities for designers working with IoT and smart technologies.</li> <li>• Comparative analysis of assistive technologies vs inclusive design: theories, models, and design</li> </ul>	Lectures + Case studies (4 hours).

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	perspectives.	
<b>2. Equity, Diversity, and Inclusion (EDI) in Design Studies</b>	<ul style="list-style-type: none"> <li>• Introduction to basic terminology and concepts of Equity, Diversity, and Inclusion (EDI) within design studies.</li> <li>• Overview of Inclusive Design, Design for All, and Universal Design: relevant legislation, standards, and guidelines.</li> <li>• Societal contexts and scenarios related to EDI in design.</li> <li>• Review of key references in the field, including influential authors, theories, designers, case studies, and companies.</li> </ul>	Lectures (2 hours).
<b>3. Inclusive Solutions (methodology and approach to the design of interactive and digital systems)</b>	<ul style="list-style-type: none"> <li>• Definition and characteristics of inclusive, system-/PSS-oriented solutions.</li> <li>• Effective methodologies for IoT-driven inclusive design Relevance for system/PSS designers.</li> <li>• Digital Fabrication, Open Concepts - Co-creation through digital fabrication technology (Arduino - hardware and software prototyping)</li> </ul>	Lectures + Case studies (4 hours).
<b>4. Design research processes and planning</b>	<ul style="list-style-type: none"> <li>• Development of innovative digital products tailored to user behaviour and contextual needs.</li> <li>• Application of technological paradigms to model human-system/product interactions.</li> <li>• Integration of interaction design with product, system, and service design methodologies.</li> <li>• Prototyping techniques and validation methods using tools like Arduino and Figma (and others).</li> <li>• Evaluation of interactive product quality through innovative, multidisciplinary evaluation methods</li> </ul>	Lecture + Studio activity: 8 hours
<b>5. Design Process for EDI: Design and development of inclusive solutions</b>	Development phases including: <ul style="list-style-type: none"> <li>• Design Brief</li> <li>• Concept Design</li> </ul>	Studio activity (24 hours) as follow: <ul style="list-style-type: none"> <li>• 8 hours.</li> <li>• 8 hours.</li> </ul>

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	<ul style="list-style-type: none"> <li>● Prototyping</li> <li>● Final Design</li> </ul>	<ul style="list-style-type: none"> <li>● 8 hours</li> <li>● 4 hours</li> </ul>
<b>6. Testing and simulation</b>	<ul style="list-style-type: none"> <li>● Conducting real-world tests and/or digital simulations of proposed solutions with identified users.</li> <li>● Assessment of the project's adequacy and user alignment.</li> </ul>	Studio activity (8 hours)
<b>7. Production of Presentation Material (Final Project Presentation)</b>	<ul style="list-style-type: none"> <li>● Development of simulation videos and promotional materials for the project.</li> <li>● Emphasis on system functionality and human-system interaction models</li> </ul>	Studio activity (2 hours)
<b>8. Presentation and final discussion</b>	<ul style="list-style-type: none"> <li>● Final discussion and brainstorming activities.</li> <li>● Engagement with focus groups (including industry experts, academic representatives, and end-users) to identify scenarios for future implementations.</li> </ul>	Studio activity (4 hours)

## 4.2 Student Assignments

Students can **choose different modes of elaboration** and presentation from multiple options. They elaborate and present tasks and outputs in written, oral, audio-visual, graphical, or other preferred form, also combining them and thus making the presentation multisensory and inclusive. Very important in design practice is a type of assignment that involves **creating prototypes**, either to scale or at full size (1:1), and the possibility of testing and iterating the results. Developing a tangible object allows for testing and engaging with users to validate ideas.

Teaching staff use **different strategies to engage students** in various activities in accordance with inclusive pedagogy. Principles of Universal Design for Learning are widely used as well as Universal Design for Instruction, especially in tertiary education. Students are actively engaged for example in the form of individual or group work, hands-on and interactive work, and especially in participatory work with users.

### 4.2.1 Architecture – Universal Design Course

This section describes the proposal of student assignments on Design for EDI within a theoretical and practical framework in the field of architecture and urban planning in undergraduate (bachelor) program at the Faculty of Architecture and Design, Slovak University of Technology (FAD STU) in Bratislava (Table 11).

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**Table 11** – Universal Design Course – student assignments, FAD STU.

Task / Assignment	Modes of elaboration	Modes of engagement
<b>1 Audit of accessibility of public buildings</b>	Written, graphical (photo documentation, video)	Hands-on work (onsite, active participation of students), work in pairs
<b>2 Design of interactive / multisensory exhibits /exhibition room</b>	Written, graphical (design proposals)	Individual, creative, discussions and participations with users
<b>3 Analyses of accessibility and adaptability of residential buildings</b>	Written, graphical (photo documentation, design proposals)	Individual, research, creative, discussions with users, questionnaires
<b>4 Renovation of the outdoor public spaces</b>	Written, graphical (photo documentation, design proposals)	In pairs, creative, participation with users
<b>5 The influence of architecture on people</b>	Written, graphical (created or generated pictures)	Individual, research with the users of the environment

#### 4.2.2 Architecture – Design Studio

This section presents the proposal of student assignments on Design for EDI within a practical framework in the field of architecture and urban planning in undergraduate (bachelor) program and postgraduate (master) program at the Faculty of Architecture and Design, Slovak University of Technology (FAD STU) in Bratislava (Table 12).

**Table 12** – Design Studio – student assignments, FAD STU.

Task / Assignment	Modes of elaboration	Modes of engagement
<b>1 Assignment and Research</b>	Written, graphical. Creation of the project brief and gathering relevant information, photo documentation	Presentation of the brief to students and to consultants, independent work, and group discussions
<b>2 Site visit</b>	Multisensory experience. Visiting the site to observe real-world conditions and context	On-site observation, taking notes, photos, and measurements
<b>3 Analysis</b>	Graphical. Analysing the context, surroundings, inspirations, users' needs, typology, etc.	Hands-on workshops, critical assessment of the environment and existing solutions
<b>4 Participatory Design</b>	Verbal communication, personal contact, interviews, and observations	Meeting and interacting with stakeholders (e.g. the client or the target user group), or simulating participatory design where students play the role of stakeholders.

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<b>5 Design and Development</b>	Graphical. Creating sketches, floor plans, sections, elevations, and 3D models, etc.	Individual work, feedback sessions, collaboration and sharing ideas with other students, users and consultants
<b>6 Finalization and Presentation</b>	Written, graphical. Completion of the A3 portfolio with visualizations, creation of the final poster (70x100 cm), and 3D model	Preparation for individual presentation, presenting final designs, and responding to feedback

### 4.2.3 System Design

This section describes the proposal of student assignments on Design for EDI within a practical and theoretical framework in the field of System Design / Product-Service System Design (PSS) in undergraduate (bachelor) programs and postgraduate (master) programs at the University of Chieti-Pescara (UNICH) (Table 13):

- **Teaching offer 1 (service-product concentration):** 1.A. “Innovation Design” (UG), 1.B. “Service Design” (PG),
- **Teaching offer 2 (service-communication concentration):** 2.A. “Media and Experience Design” (UG), 2.B “Strategic Communication” (PG).

**Table 13** – System Design / Product-Service System – student assignments, UNICH – Pescara.

Task / Assignment	Modes of elaboration	Modes of engagement
<b>1 General Design Brief (according to teaching offer 1 or 2 and the academic level such as UG/PG)</b>	<ul style="list-style-type: none"> <li>• Graphical (UG): a set of research sheets containing a synthesis of desk-based and field research processes documenting the motivation for an inclusive project (use of evidence-based approach).</li> <li>• Written + Graphical (PG): a research report containing a detailed and motivated synthesis of desk-based and field research processes documenting the motivation for an inclusive project (use of research-led approach).</li> </ul>	<ul style="list-style-type: none"> <li>• For UG: individual work resulting from collective studio-led pedagogical activities (i.e., one-to-one consultations, collaborative learning, teamwork with self-reflection, etc.).</li> <li>• For PG: either individual or group work resulting from collective studio-led pedagogical activities (i.e., one-to-one consultations, collaborative learning, teamwork with self-reflection, etc.).</li> </ul>
<b>2 Concept Design (according to teaching offer 1 or 2 and the academic level such as UG/PG)</b>	<ul style="list-style-type: none"> <li>• Graphical (UG) (based on task 1): a set of design sheets containing a conceptual idea for an inclusive solution.</li> <li>• Written + Graphical (PG) (based on task 1): a research and graphical report documenting the translation of research data developed into a mature and innovative inclusive solution.</li> </ul>	<ul style="list-style-type: none"> <li>• For UG: individual work resulting from collective studio-led pedagogical activities (i.e., one-to-one consultations, collaborative learning, teamwork with self-reflection, etc.).</li> <li>• For PG: either individual or group work resulting from collective studio-led pedagogical activities (i.e., one-to-one</li> </ul>

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		consultations, collaborative learning, teamwork with self-reflection, etc.).
<p><b>3 Final Design of the solution (according to teaching offer 1 or 2 and the academic level such as UG/PG)</b></p>	<ul style="list-style-type: none"> <li>Graphical (UG) (based on task 2): a set of design sheets containing a detailed technical development of an inclusive solution.</li> <li>Written + Graphical (UG): (based on task 2) a research and graphical report containing a detailed technical development of an inclusive solution.</li> </ul>	<ul style="list-style-type: none"> <li>For UG: individual work resulting from collective studio-led pedagogical activities (i.e., one-to-one consultations, collaborative learning, teamwork with self-reflection, etc.).</li> <li>For PG: either individual or group work resulting from collective studio-led pedagogical activities (i.e., one-to-one consultations, collaborative learning, teamwork with self-reflection, etc.).</li> </ul>
<p><b>4 Final presentation (according to teaching offer 1 or 2 and the academic level such as UG/PG)</b></p> <p><i>This task is always connected with task 3.</i></p>	<p>Oral for UG and PG (project presentation).</p>	<ul style="list-style-type: none"> <li>For UG: individual work.</li> <li>For PG: either individual or group work.</li> </ul>

#### 4.2.4 Product Design – Research and Discursive Design

This part presents proposals of student assignments on Design for EDI within the theoretical and practical framework in the field of product design, research and discursive design in undergraduate (bachelor) and postgraduate (master) programs at the Academy of Fine Arts and Design in Katowice (Tables 14, 15, 16):

- **Form and meaning - supplementary module**, practical subject, elective course (PG program),
- **UX research - supplementary module**, practical subject, elective course (PG program),
- **Product design - design studio**, practical subject, elective course – 1<sup>st</sup> semester (PG program).

**Table 14** – Form and meaning – student assignments, ASP – Katowice.

Task / Assignment	Modes of elaboration	Modes of engagement
<p><b>Personal Design Research Project</b></p> <p>Students will conduct a personal design research project based on a shared brief. The brief will be open ended, leaving space for personal interpretation and allowing for aligning it to own</p>	<p>Visual presentation - interviews, photographic documentation, conclusions of observations, written, oral, audio-visual, graphical, prototypes</p>	<p>Individual work, peer feedback sessions, discussions, expert lectures</p>

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interests and values. The outcome will be a design artifact: prototype, visualisation, diagram etc. and will be presented during the final exam and consulted via bi-weekly feedback sessions.		
<p><b>Reflective Design Process Report</b></p> <p>A record of the research and design process that clearly presents the development of the project and argues the design decisions made. It should document conclusions, thoughts, sketches, models, concepts and conclusions.</p>	Printed publication -approximately 2–3k words + illustrations (code samples, prototypes, test results, mind maps)	Individual work

**Table 15** – UX research – design studio – student assignments, ASP – Katowice.

Task / Assignment	Modes of elaboration	Modes of engagement
<p><b>1 How do products shape our everyday lives?</b></p> <p>Research of how inclusive a chosen product is and how it influences our habits and attitudes.</p>	Research report published on Medium: uxstori.es	Group work
<p><b>2 Analysis of a selected chapter from the book Thinking, Fast and Slow by Daniel Kahneman</b></p>	<p>Presentation that includes:</p> <ul style="list-style-type: none"> <li>• A list of the key theses and conclusions</li> <li>• A comment on the potential application of the theses in the research process</li> <li>• Other examples of behaviours related to the mentioned theses (at least one)</li> </ul>	Individual work

**Table 16** – Product design – design studio – student assignments, ASP – Katowice.

Task / Assignment	Modes of elaboration	Modes of engagement
<p><b>1 Analysis of information about handicraft cooperatives of people with disabilities</b></p>	Workshop – conversation, observation, interview, visual presentation, photographic documentation, conclusions of observations.	Group work, hands-on.

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<b>2 Identity identification for partnership institutions, related to place, to people, to history?</b>	visual presentation.	Group work, hands-on.
<b>3 Analysis of production possibilities by people with disabilities</b>  Techniques of production	visual presentation.	Group work, hands-on.
<b>4 Analysis of user needs and process</b>	storyboard – user scenario.	Hands-on, individual.
<b>5 Define the purpose of the project - describe the goal, define the vision.</b>  Define the results of the project for the company, community, users.	Written.	Hands-on, individual.
<b>6 Search for solutions - sketches, visualizations, mock-ups.</b>  Presentation of a design solution for the Luft community - pdf.	Sketches, visualizations, 3D mock-ups, final models.  Final visual presentation.	Hands-on, individual.

#### 4.2.5 Product Design – Design and Innovation

This section presents proposals of student assignments on Design for EDI within a practical framework in the field of product design in undergraduate program focused on the development of the final thesis project in the bachelor program Design and Innovation at ELISAVA Barcelona School of Design and Engineering (Table 17).

**Table 17** – Product Design - final thesis project – student assignments, ELISAVA – Barcelona.

Task / Assignment	Modes of elaboration	Modes of engagement
<b>Motivations, Positioning and Research plan presentation</b>	Literature Review, References, Research methodology.	Individual development, public presentation.
<b>Individual tutoring (4 week)</b>	Follow up: Visual representation, interviews, image/audiovisual documentation, written, oral, prototypes.	Individual.
<b>Midterm presentation: Exhibition setup + Elevator pitch 270 students</b>	Exhibition: visual representation, interviews, image/audiovisual documentation, written, oral, prototypes	Individual Feedback + Collective Exhibition.

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<p><b>Individual tutoring after midterm presentations (4 week)</b></p>	<p>Follow up: Visual representation, interviews, image/audiovisual documentation, written, oral, prototypes.</p>	<p>Individual.</p>
<p><b>Digital Thesis Submission</b></p>	<ol style="list-style-type: none"> <li>1. Thesis title/name and student ID/ University, department, and program/ Supervisor's name/ Date of submission</li> <li>2. Abstract: A concise summary of the thesis, including the research question, methodology, results, and conclusion.</li> <li>3. Acknowledgments (optional): A section to thank people or organizations that contributed to your work.</li> <li>4. Table of Contents: List of all major sections and subsections with page numbers.</li> <li>5. List of Figures and Tables (if applicable): Include diagrams, illustrations, or charts.</li> <li>6. Introduction: Background and context of the topic/Problem statement or design challenge/Objectives or goals of the thesis/Research questions or hypotheses Scope and limitations</li> <li>7. Literature Review: Overview of existing research, theories, and design precedents/Analysis of how they relate to your topic/Identification of gaps your work aims to address</li> <li>8. Methodology: Description of the research and design methods used/Justification for the chosen approach Tools, techniques, or software employed</li> <li>9. Design Process: Step-by-step description of the design process Ideation, sketching, prototyping, and iteration/Explanation of key design decisions/Any user research or testing conducted</li> <li>10. Results: Final design or project outcome/Visual documentation (e.g., sketches, prototypes, models, mockups)</li> <li>11. Discussion Interpretation of the results: Reflection on the success of the design in addressing the research question or problem/Limitations and areas for improvement</li> </ol>	<p>Individual.</p>

	<p>12. Conclusion: Summary of findings/ Contribution to the field of design Suggestions for future work</p> <p>13. References: Complete list of sources cited in the thesis (APA, MLA, or Chicago).</p> <p>14. Appendices (if necessary): Additional material such as detailed surveys, interview transcripts, or extended design documentation.</p>	
<b>Individual tutoring</b>	Public Defence preparation	Individual.
<b>Final thesis public defence</b>	Visual representation, image/audiovisual documentation, oral, prototypes.	Individual.
<b>Degree Show Exhibition and set up (more than two thousand visitors)</b>	Exhibition: visual representation, image/audiovisual documentation, written, oral presentation, prototypes.	Individual.

#### 4.2.6 Digital Design

This part describes the proposal of student assignments on Design for EDI within theoretical and practical framework in the field of digital design in postgraduate (master) program at the University of Florence (UNIFI) (Table 18):

- **Digital Design Laboratory** - Topics: Interaction Design, Design of IoT applications/Smart Object, Digital Do It Yourself (DiDIY). *In collaboration with module Informatics for Design.*

**Table 18** – Digital Design Laboratory – student assignments, UNIFI.

Task / Assignment	Modes of elaboration	Modes of engagement
<b>General Design Brief</b>	Written + Graphic (storyboard - user scenario, sketches): a research report containing a detailed and reasoned summary of documentary and field research processes documenting the rationale for an inclusive project.	Individual or group work resulting from collective pedagogical activities guided by a study (e.g., collaborative learning, group work with self-reflection, etc.).
<b>Concept Design</b>	Written + Graphic (ref. activity 1): a research report and graphic documenting the evaluation phase and the research data developed into an innovative, inclusive solution.	Individual or group work resulting from collective pedagogical activities guided by a study (e.g., collaborative learning, group work with self-reflection, etc.).
<b>Final Design of the solution</b>	Written + Graphic + Video (sketches, visualizations, 3D mock-ups, final models): a research and graphic report containing a detailed technical development of an included solution.	Either individual or group work.

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<b>Final presentation</b>	Project presentation: visual representation, image/audiovisual documentation, written, oral presentation, prototypes.	Either individual or group work.
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## 5. Expected Results of Teaching

At the end of the teaching process, students are expected to have acquired knowledge and competences about Design for EDI. The expected results of the teaching pathway contain both the nature of inclusive design in student projects and the correlation with the assessment criteria set for the teaching models on Design for EDI.

### 5.1 Architecture – Universal Design Course

The expected results that students are asked to achieve in the Universal Design Course in undergraduate study program in Architecture and Urban Planning (FAD STU – Bratislava):

- Students will be able to understand the diversity **of people** and to accept different needs and requirements of the users, including people with physical, sensory, mental, and other limitations.
- Students will be able to work with the **principles of Universal Design / Inclusive Design / Design for All** to create an inclusive accessible environment for all people.
- Students will be able to **identify barriers** in urban, architectural and interior environments, and then propose to remove obstacles in order to create an inclusive environment contributing to forming an inclusive society.
- Students will be able to **use multisensory elements** when creating the built environment and wayfinding systems.
- Students will be able to **apply the acquired knowledge in practice** when designing the built environment.

### 5.2 Architecture – Design Studio

The expected results that students are asked to achieve in the Design Studio in undergraduate and postgraduate study programs in Architecture and Urban Planning (FAD STU – Bratislava):

- Students will be able to use experience to **creatively apply knowledge gained from theoretical subjects** (composition, construction and typological subjects, universal design and accessibility).
- Students will be able to **determine the correct hierarchy of importance of all inputs into the architectural design process**, while each semester gradually increasing demands on the complexity of the solution, in different scales and sizes of buildings, and their ensembles, as well as the exterior from the public space to the urban areas.
- Students will be able to **work with the universal design method** to achieve social and ecological sustainability of the environment.
- Students will be able to **process architectural or urban designs and projects** under the supervision of an authorized architect or other authorized person.

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- Students will be able to **prepare and evaluate documents** for the needs of architectural or urban design.

### 5.3 System Design

The expected results that students are asked to achieve in the field of System Design / Product-Service System Design (PSS) in undergraduate and postgraduate study programs (UNICH - Pescara):

- Students will be able to **understand diversity of people** by employing a variety of research and design methods, both primary and secondary, and to accept different user needs, including people with physical, sensory, mental, and other limitations in relation to different contexts of use, according to the nature of solutions to be designed (services, digital and/or physical products, and strategic communication) that may have different levels of complexity.
- Students will be able to work with the **principles of EDI applied to design studies** (i.e., Inclusive Design / Design for Social Inclusion) so as to create an inclusive artefact having various levels of complexity for all potential people demanding it.
- Students will be able to **identify a variety of barriers**, including physical, cognitive, procedural, and technological, and then propose to overcome intrinsic design limitations to create inclusive artefacts that, because developed by employing a variety of design strategies, contribute to forming an inclusive society.
- Students will be able to **use multisensory elements** when creating the PSS-oriented solutions.
- Students will be able to **liaise with potential customers and professional partners** by developing focused analysis and design outcomes that are useful to start virtuous collaborations and market-oriented actions capable of reaching global markets.
- Students will be able to **deal with complex scenarios** and data to frame problems and to convert them into innovative inclusive solutions.
- Students will be able to **present the projects to wider audiences**, both academic and professional, to negotiate strategies that are adhering with the professional design practice, and to take control of the design process within certain timelines and constraints.
- Students will be able to **apply the acquired knowledge in practice** when designing a PSS-oriented solution in the form of service, physical and/or digital product, and strategic communication (both together or individually).

### 5.4 Product Design – Research and Discursive Design

The expected results that students are asked to achieve in the module Form and meaning in the field of product design, research and discursive design in undergraduate and postgraduate programs (ASP – Katowice):

- Students will be able to critically investigate contemporary humanities issues through an EDI lens, using discursive design and creative technology to challenge dominant perspectives and promote alternative narratives that embrace equity, diversity, and inclusion.
- Students will be able to address issues of power, politics, and responsibility in design by integrating EDI principles, ensuring their proposals and debates consider the needs and voices of underrepresented and marginalized groups.

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- Students will be able to adopt a research-through-design approach, using prototyping and physical-digital model-making to produce new knowledge that reflects inclusive practices and fosters cross-disciplinary collaboration grounded in EDI values.
- Students will be able to engage in bilingual (English and Polish) discussions, group seminars, and practical workshops, ensuring accessibility and inclusivity while developing skills in creative coding and other technologies relevant to diverse cultural and social contexts.
- Students **will be able to collaborate with experts from diverse fields**, such as economists, curators, and creative technologists, applying EDI principles to ensure inclusive and equitable engagement in interdisciplinary design projects.
- Students will be able to create a progressive learning environment by suspending traditional disciplinary boundaries and integrating EDI principles to address key emerging issues, ensuring their design solutions are inclusive, equitable, and culturally sensitive.

The expected results that students are asked to achieve in the module UX research – supplementary module in postgraduate (master) programs (ASP – Katowice):

- Students will be able to critically analyze and synthesize unbiased knowledge on EDI in design studies by linking insights from desk research and their own research outcomes.
- Students will be able to use multimodal tools, such as legible illustrations and structured writing, to effectively communicate EDI research outcomes in a clear and accessible manner.
- Students will be able to collaborate with diverse groups of users and stakeholders, develop empathy, and evaluate the inclusive impact of products and services by conducting user-centred research.
- Students will be able to express critical reflections on EDI by recognizing its role in various design contexts and employing mixed research methods to address diverse use scenarios.
- Students will be able to develop shareable knowledge on EDI by creating research reports that explore social, economic, technical, and environmental dimensions of inclusivity.
- Students will be able to overcome personal biases and cultural assumptions by comparing initial assumptions with research findings to refine their perspectives.
- Students will be able to adopt an open-minded approach to EDI by challenging stereotypes and integrating deeper insights gained from reflective research practices.

The expected results that students are asked to achieve in the module Product Design - Design Studio in postgraduate (master) programs (ASP – Katowice):

- Students will be able to independently engage in design activities and effectively contribute to interdisciplinary design teams, fostering collaboration with manufacturers, institutions, and social organizations while ensuring inclusivity and addressing diverse user needs.
- Students will be able to design products, services, and experiences with a heightened awareness of social responsibility, integrating EDI principles to create solutions that are equitable, accessible, and culturally sensitive.
- Students will be able to develop and model innovative ideas while adhering to universal, ethical, and responsible design principles, emphasizing inclusivity and diversity in their approaches.
- Students will be able to apply hard skills to design processes while critically analysing the ethical dimensions of their work, advocating for EDI values to ensure their designs respect and represent diverse perspectives and identities.

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- Students will be able to identify and investigate real-world problems through their own research, using an EDI lens to prioritize the needs of underrepresented and marginalized communities in their design solutions.
- Students will be able to balance technical expertise with a deep understanding of EDI principles, embracing the designer's role as an advocate for equitable, responsible, and inclusive design practices.
- Students will be able to independently manage and execute their projects, demonstrating responsibility, critical thinking, and accountability in their design decisions while ensuring their outcomes align with EDI principles and values.

## 5.5 Product Design – Design and Innovation

The expected results for a final design thesis at the bachelor's level (ELISAVA – Barcelona) vary by students' motivation and positioning, but there are common goals and outcomes that students are required to achieve. These expectations are designed to demonstrate a student's ability to integrate design theory, research, and practical skills into a cohesive and professional project.

- **A Clearly Defined Problem or Opportunity**
  - Expected: Identify and articulate a relevant design challenge or opportunity based on research, user needs, or societal issues (such as EDI).
  - Demonstrates: Critical thinking and an understanding of the design context and the role of EDI in it.
- **A Comprehensive Research Base**
  - Expected: Conduct thorough research, including literature reviews, user studies, market analysis, or precedent analysis.
  - Demonstrates: Ability to gather, analyze, and synthesize information to inform design decisions taking EDI into account.
- **An Original and Innovative Design Solution**
  - Expected: Develop a creative and original design that addresses the identified problem or opportunity effectively and taking EDI into account.
  - Demonstrates: Innovation, problem-solving skills, and the ability to think outside the box.
- **User-Centred Approach**
  - Expected: Incorporate user feedback and usability testing into the design process.
  - Demonstrates: Understanding of user needs and the ability to create solutions that are functional, aesthetically pleasing, accessible and coherent with EDI.
- **A High-Quality Final Output**
  - Expected: Present a polished final deliverable, such as a product prototype, digital interface, architectural model, or visual communication piece.
  - Demonstrates: Professional-level execution of design skills, including attention to detail, craftsmanship, or technical proficiency.
- **Documentation of the Design Process**
  - Expected: Provide a detailed account of the design process, including ideation, iteration, prototyping, and refinement.
  - Demonstrates: Transparency and understanding of design methodology.
- **Alignment with EDI, Sustainability and Ethical Standards principles**

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- Expected: Address issues of sustainability and ethical considerations within the project, applying EDI principles to ensure inclusive and equitable engagement in design projects.
- Demonstrates: Awareness of the broader implications of design and of EDI.
- **Clear and Compelling Communication**
  - Expected: Present the project through a professional report, presentation, and/or exhibition.
  - Demonstrates: Ability to effectively communicate ideas, concepts, and the value of the design to diverse audiences.
- **Alignment with Program Learning Outcomes**
  - Expected: Show proficiency in the core skills and knowledge areas outlined by the program.
  - Demonstrates: Mastery of the academic and practical competencies acquired during the course of study.
- **A Vision for Future Work**
  - Expected: Provide a roadmap for how the design could be further developed or implemented, taking EDI into account.
  - Demonstrates: Strategic thinking and an understanding of real-world applications. By meeting these expectations, students demonstrate their readiness to enter the professional design field and contribute meaningfully through their skills and creativity.

## 5.6 Digital Design

The expected results that students are asked to achieve in the Digital Design Course in postgraduate (master) study program (UNIFI):

- **Understand and apply the principles of inclusivity in digital design**
  - Recognize and integrate concepts of inclusivity, equity, and diversity (EDI) within the design context.
  - Distinguish and adopt both traditional and innovative approaches in inclusive market scenarios.
- **Design inclusive and user-oriented solutions**
  - Analyze and address diverse user needs by developing products, systems, and services that align with inclusive design paradigms.
  - Apply theories and models from assistive technologies and inclusive design to the design process.
- **Utilize advanced methodologies for digital design**
  - Implement effective methodologies for system-oriented and Product-Service System (PSS)-driven design.
  - Leverage digital fabrication techniques (e.g., Arduino, Figma, hardware and software prototyping).
- **Adopt a Human-Centred Approach and Inclusive Design**
  - Incorporate user feedback and usability testing into the design process.
  - Understanding of user needs and the ability to create solutions that are functional, aesthetically pleasing, accessible, and aligned with EDI principles.
  - Empathize with the concept of EDI and apply it during all phases of the design process.
- **Integrate research and planning into the design process**

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- Plan and develop innovative products based on human-system interactions and contextual needs.
- Evaluate the quality of interactive products using multidisciplinary and innovative assessment methods.
- **Prototype and test design solutions**
  - Develop functional prototypes and conduct real-world tests or digital simulations to verify their alignment with project requirements.
- **Produce communication and presentation materials**
  - Create multimedia content (e.g., simulation videos) to showcase the functionality of designed systems and human-system interaction models.
- **Collaborate effectively and communicate results professionally**
  - Present final projects in a professional manner and engage industry experts and end-users in constructive discussions to identify future development opportunities.

## 6. Assessment Criteria and Methods

**Assessment criteria help to evaluate student attitudes, knowledge (understanding) and skills (application) of EDI principles in design contexts.** It is important to share the success criteria with students. Peer-assessment and self-assessment can also contribute for students to be more involved in the assessment process. The possible criteria based on teaching models on Design for EDI are described in Chapters 6.1. Attitudes, 6.2. Knowledge and 6.3. Skills.

### 6.1 Attitudes

Attitudes refer to the underlying beliefs, values, and perspectives that shape how students approach design problems and processes. When it comes EDI (Table 19), these entail:

- To tackle various levels of EDI issues.
- To create safe emotional and mental space for the process of learning.
- To understand the role of the designer and its limitations.

**Table 19** – Attitudes.

<b>1. Attitudes</b>
The content of the modules should be flexible to accommodate the students' readiness to tackle various levels of EDI issues.
<b>2. Attitudes</b>
Modules should include creating a safe emotional and mental space for the process of learning, to go beyond students' initial expectations on EDI.
<b>3. Attitudes</b>
The modules should refer to understanding the role of the designer and its limitations.

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## 6.2 Knowledge

Knowledge encompasses the understanding and application of design principles, theories, methods, and practices. When it comes EDI (Table 20), this entails:

- to acknowledge that EDI is an **integrated part of the design process**
- to understand EDI approach as an ongoing process of defining its scope
- to focus on a **critical approach** towards current standards and tools in the EDI area
- to introduce the design as intervention in specific environment, context
- to introduce some aspects of knowledge from the social sciences

**Table 20** – Knowledge.

<b>1. Knowledge</b>
Modules should present that EDI is an integrated part of the design process.
<b>2. Knowledge</b>
Modules should introduce the state of knowledge about the EDI approach as an ongoing process of defining its scope.
<b>3. Knowledge</b>
Modules should include assignments that focus on a critical approach towards current standards and tools in the EDI area.
<b>4. Knowledge</b>
Modules should introduce the design as intervention in specific environment, context.
<b>5. Knowledge</b>
The modules should introduce some aspects of knowledge from the social sciences

## 6.3 Skills

Skills refer to the abilities and techniques that students acquire to effectively create and communicate visual solutions. When it comes EDI (Table 21), these entail:

- to apply various methods, used in the design process, which can **address different aspects** of the EDI approach
- to use various research methods allowing to **identify problems** in EDI area
- to use both soft and hard skills
- to develop project management skills
- to **work with real stakeholders** and provide students with full responsibility for gathering **feedback from users** and stakeholders
- to train soft skills in communication with users and stakeholders
- to support complex self-reflection of gained competencies

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**Table 21 – Skills.**

<b>1. Skills</b>
Modules should present the universal use of methods, used in the design process, which can address different aspects of the EDI approach.
<b>2. Skills</b>
Using various research methods allow to identify problems in EDI area
<b>3. Skills</b>
The module structure should develop both soft and hard skills in students simultaneously.
<b>4. Skills</b>
The module should include development of project management skills.
<b>5. Skills</b>
The modules should include working with real stakeholders and providing students with full responsibility for gathering feedback from users and stakeholders.
<b>6. Skills</b>
Modules should include the stages where the revision of soft skills in communication with users and stakeholders takes place.
<b>7. Skills</b>
Complex self-reflection of gained competencies.

## 6.4 Assessment Methods

Assessment methods in design education refer to the various strategies and tools used to evaluate students' understanding, skills, and creativity in design disciplines. In relation to EDI, these involve:

- Individual consultations and assessment (including self-assessment, peer assessment) during the semester to achieve a comprehensive processing of the project work.
- Evaluation of the quality of the processing of the project work in midterm and final stage (presentations, drawings, quizzes, tests, project evaluations).
- Public presentation of the project process and the results of the project work including the final model/poster.
- Discussions with public (users) about the project work and results in midterm and final stage.
- Comparing the initial assumptions with the project/research results (including self-assessment, peer assessment).
- Written or oral exam - test of the knowledge, attitudes and skills in Design for EDI (including theoretical and practical tasks).
- Overall evaluation of the subject/module on Design for EDI (quality of lectures, exercises, project work, teams, etc.).

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## 7. Proposal for a Generalized Teaching Models on Design for EDI

Based on the results of previous research, reviews, analyses and discussion during the workshop in Katowice the 25<sup>th</sup> of October 2024, we propose the following teaching models on Design for EDI, which will be tested in undergraduate (UG) and postgraduate (PG) programs at EDIDESK partner universities - STU, UNICH, ASP, ELISAVA and UNIFI from December 2024 to July 2025.

### 7.1 Architecture

**Module names:** **Universal Design** (UG, Design field: Architecture and Urban Planning), **Design Studio** (UG/PG, Design field: Architecture and Urban Planning).

**Assignments/Stages of assignment:** 1st stage Empathic exercise (Diversity of people), 2nd stage Analyses/research of the built environment (Inclusive Design / Design for All / Universal Design principles, accessibility), 3rd stage Design proposal (modifications, new interventions), 4th stage Presentation and consultation of design proposal.

**Activities & Effect:** simulation of diversity in the built environment, on-site exploration of the built environment, questionnaires/interviews with users, research of the best practices, graphical elaboration of the posters.

**Assessment & Reflection:** discussion among students and users, pros and cons of selected environment (adaptability, accessibility, inclusion vs. segregation, etc.), evaluation of the design proposals of student works, test of the students' knowledge (exam).

**Teaching methods + inclusive approach:** UDL active engagement of students, 7 principles of UD, one to one consultation, UDI interaction among students.

**Best practices/Competences** (defined in Chapter 6): Attitudes 1., 2., 3., Knowledge 1., 2., 3., 4., 5., Skills 1., 2., 3., 4., 5.

### 7.2 System Design – UG

**Module names:** 1) **Innovation Design** (UG, service-product concentration), 2) **Media and Experience Design** (UG, service-communication concentration).

**Assignments/Stages of assignment:** Stage 1) General Design Brief, Stage 2) Concept Design, Stage 3) Final Design, Stage 4) Final presentation.

**Activities & Effect:** Individual work with research and design data, Feedback.

**Assessment & Reflection:** Individual/group assessment, Final exam. Discussion among students and users (one-to-one consultations, collaborative learning), teamwork with self-reflection, evaluation of the design proposals (student works).

**Teaching methods + inclusive approach:** Action research, Double Diamond for Inclusive Design, UDL active engagement of students, one to one consultation, UDI interaction among students. Other methodologies for inclusive teaching and learning include, flexible tasks, safe environment for feedback.

**Best practices/Competences** (defined in Chapter 6): Attitudes 1., 2., Knowledge 1., 4., 5., Skills 2., 3., 5.

### 7.3 System Design – PG

**Module names:** 1) Strategic Communication (PG, service-communication concentration), 2) Service Design (PG, service-product concentration).

**Assignments/Stages of assignment:** Stage 1) General Design Brief, Stage 2) Concept Design, Stage 3) Final Design, Stage 4) Final presentation.

**Activities & Effect:** Individual/group report with research and design data, Feedback.

**Assessment & Reflection:** Individual/group assessment, Final exam. Discussion among students and users (one-to-one consultations, collaborative learning), teamwork with self-reflection, evaluation of the design proposals (student works).

**Teaching methods + inclusive approach:** Action research, Double Diamond for Inclusive Design, UDL active engagement of students, one to one consultation, UDI interaction among students. Other methodologies for inclusive teaching and learning include, flexible tasks, safe environment for feedback.

**Best practices/Competences** (defined in Chapter 6): Attitudes 2., Knowledge 2., 3., 4., Skills 1., 3., 4., 5., 7.

### 7.4 Product Design – Research and Discursive Design

**Module name: Product Design.**

**Assignments/Stages of assignment:** Stage 1) Analysis of information about handicraft cooperative of people with disabilities, Stage 2) Workshop – Conversation, observation, interview, Stage 3) Defining the identity of the cooperative, Stage 4) Analysis of production possibilities by people with disabilities, Stage 5) Analysis of user needs and process, Stage 6) Defining the purpose of the project - describe the goal, defining the vision, Stage 7) Defining the results of the project for the company, community, and users, Stage 8) Solutions and final presentation.

**Activities & Effect:** Individual and group work, learning by doing, workshops, prototyping and testing, final presentation for the users and stakeholders.

**Assessment & Reflection:** Individual/group assessment, Final exam. Discussion among students and users (one-to-one consultations, collaborative learning), teamwork with self-reflection, evaluation of the design proposals (student works).

**Teaching methods:** Inclusive Design toolkit (Cambridge University), Double Diamond for Inclusive Design, Inclusive Design/UDL Method (Universal Design Learning Method), HCD, feedback sessions (group and individual).

**Best practices/Competences** (defined in Chapter 6): Attitudes 1., 2., 3., Knowledge 1., 4., Skills 1., 3., 4., 5., 6., 7.

**Module name: Form and Meaning.**

**Assignments/Stages of assignment:** Stage 1) Contextualization and tools, Stage 2) Engagement and field work, Stage 3) Synthesis and conceptualization, Stage 4) Refinement and production.

**Activities & Effect:** Individual work, learning by doing, workshops, prototyping and testing, final presentation for the users and stakeholders.

**Assessment & Reflection:** The Theatre Feedback method, Internal review, Feedback sessions, Individual/group, final exam, evaluation of the design proposals (student works).

**Teaching methods:** Workshop, collaborative reading, EDI toolkits for researchers (Newcastle resources), FLOE Inclusive Learning Design Book, Open brief, Reflective process journal.

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**Best practices/Competences** (defined in Chapter 6): Attitudes 1., 2., 3., Knowledge 1., 2., 4., 5., Skills 1., 3., 5., 6., 7.

**Module name: UX Research.**

**Assignments/Stages of assignment:** Stage 1) Introduction: how products influence on people? Concept of exclusion, accessibility, and inclusion Stage 2) Defining research area and research group, Stage 3) Research scenario, Stage 4) Conduction research and its revision, Stage 5) Research report.

**Activities & Effect:** Individual and group work, learning by doing (research involving experiments, user observations, etc., and preparing research reports), workshops and feedback sessions (drawing conclusions from each research step, organizing information, defining next steps), final exam (evaluation of the research report).

**Assessment & Reflection:** Individual/group assessment, Discussion among students (one-to-one consultations, collaborative learning), teamwork with self-reflection, Evaluation of the design proposals (student works).

**Teaching methods:** Workshop, collaborative reading, EDI toolkits for researchers (Cards for Humanity, Inclusive Design Cards Government of Ontario, Exclusion Calculator Lite v2.1), FLOE Inclusive Learning Design Book.

**Best practices/Competences** (defined in Chapter 6): Attitudes 1., 2., 3., Knowledge 1., 2., 4., 5., Skills 1., 3., 5., 6., 7.

## 7.5 Product Design – Design and Innovation

**Module name:** Bachelor Final Project (Design field: Product Design).

**Assignments/Stages of assignment:** Literature review, Analysis, Development, Final Assessment

**Activities & Effect:** State of the art (needs analysis), Define own framework (topics), Attend lessons (methodologies), Research/Analysis/Prototyping, Oral/written defence, Feedback.

**Assessment & Reflection:** Degree of applications of principles.

**Teaching methods + inclusive approach:** SID Toolkit, Lectures + Workshop, Inclusive design toolkit, Service design toolkit, learning by doing, Inclusive design works, Oral presentation, Written document.

**Best practices/Competences** (defined in Chapter 6): Attitudes 2.,3., Knowledge 1., 2., 3., 5., Skills 2., 4., 7.

## 7.6 Digital Design

**Module name: Digital Design Laboratory.**

**Assignments/Stages of assignment:** Stage 1) General Design Brief, Stage 2) Concept Design, Stage 3) Final Design, Stage 4) Final presentation.

**Activities & Effect:** Individual/group report with research and design data, Feedback.

**Assessment & Reflection:** Individual/group assessment, Final exam. Discussion among students and users (one-to-one consultations, collaborative learning), teamwork with self-reflection, evaluation of the design proposals (student works).

**Teaching methods:** Action research, Inclusive Design toolkit, Double Diamond for Inclusive Design, UDL active engagement of students, one to one consultation, UDI interaction among students. Other

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methodologies for inclusive teaching and learning include, flexible tasks, safe environment for feedback.

**Best practices/Competences** (defined in Chapter 6): Attitudes 1., 3., Knowledge 1., 3., 4., Skills 1.,2., 3.

## 8. Conclusion and Discussion

In the process of teaching and testing modules on Design for EDI, it is important to consider several factors that are very important in relation to EDI teaching and learning:

- **GROUP ENGAGEMENT MEASUREMENT:** Assessment of the work of individuals within the group – how to perform it effectively?
- **RESEARCH REPOSITORY:** How to collect students' research and share it with other groups of students to learn from it or continue their work.
- **ENHANCING SOCIAL SKILLS:** Strengthening students' self-confidence in overcoming their fears in interactions with users and breaking down barriers in communication with strangers. Support from institutions and universities can help, as research and interviews are conducted for specific purposes. We need to emphasize to students that communication skills are essential for designers in their daily practice, especially when working with users and stakeholders.
- **WORKING IN THE FIELD vs. EXPECTATIONS OF THE COMMUNITY:** There should be awareness that working with communities and groups of people may lead to some expectations. The objectives, outcomes, and limitations of projects should be clearly presented, along with how the community can use the outcomes of the research. There are practices at other universities that address this issue, such as establishing Neighbourhood Relation Offices that collect and manage contacts with local communities.
- **USING THE POWER OF FEEDBACK SESSIONS AMONG STUDENTS:** We can utilize each student's experience to broaden the perspectives of others. For example: students can examine EDI (Equity, Diversity, and Inclusion) values in each other's projects, merging diverse opinions; conducting individual research on the same topic and comparing results can lead not only to prepare a comprehensive report but also to broaden students' perspectives.
- **HOW TO COLLECT EFFECTIVE FEEDBACK ABOUT THE CLASSES:** There is an issue with collecting student feedback, as the percentage of students who share their thoughts is low, and responses at the end of the semester tend to have low value (this is particularly visible in Poland and Slovakia). A practice used during the semester, called "stop-start-continue," can be implemented in class using Mentimeter. This allows students to see responses during class, agree on necessary corrections, and collectively determine what should be changed. This approach enables progress in class effectiveness throughout the semester and allows for testing new strategies for teachers.

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