



ATiENA

Bringing Accessibility and Design for All into Higher Education Curricula

Transnational Report - Work Package 1

State of Art: Mainstream Curricula Analysis



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Athena partners



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Executive Summary

Work package 1 “State of Art: Mainstream Curricula Analysis” is subdivided into three tasks:

Task 1.1 focused on the systematic selection of Higher Education (HE) domains based on the ISCED Fields of Education and Training 2013 classification system [UNE15]. This involved a collaborative process based on the focus group approach with experts from Spain, Cyprus, Czechia, and Austria, aiming to identify domains with educational and societal relevance. The key criteria for domain selection included the availability of suitable study programs in each partner country, and the domains' potential economic, political, and social impact. The primary challenge was the variation in available study programs across different countries, especially when comparing smaller and larger ones. The task resulted in the identification of seven main domains rated as "Extremely relevant," along with subdomains.

Task 1.2 involved the analysis of HE curricula and syllabi to identify those that incorporated principles of Accessibility and Universal Design. This task was carried out across four partner countries: Spain, Cyprus, Czechia, and Austria. The methodology included keyword searches within the scope of corpus linguistics, with some adjustments to accommodate national variations. Despite some country-specific challenges in finding suitable curricula, all four countries identified 21 curricula that met the criteria. The analysis revealed variations in the presence of Accessibility and Universal Design principles in curricula and syllabi across different academic domains and countries, with specific keyword rankings and frequencies detailed for each country. These findings provide essential insights for the Athena project's research into the inclusion of these principles in HE.

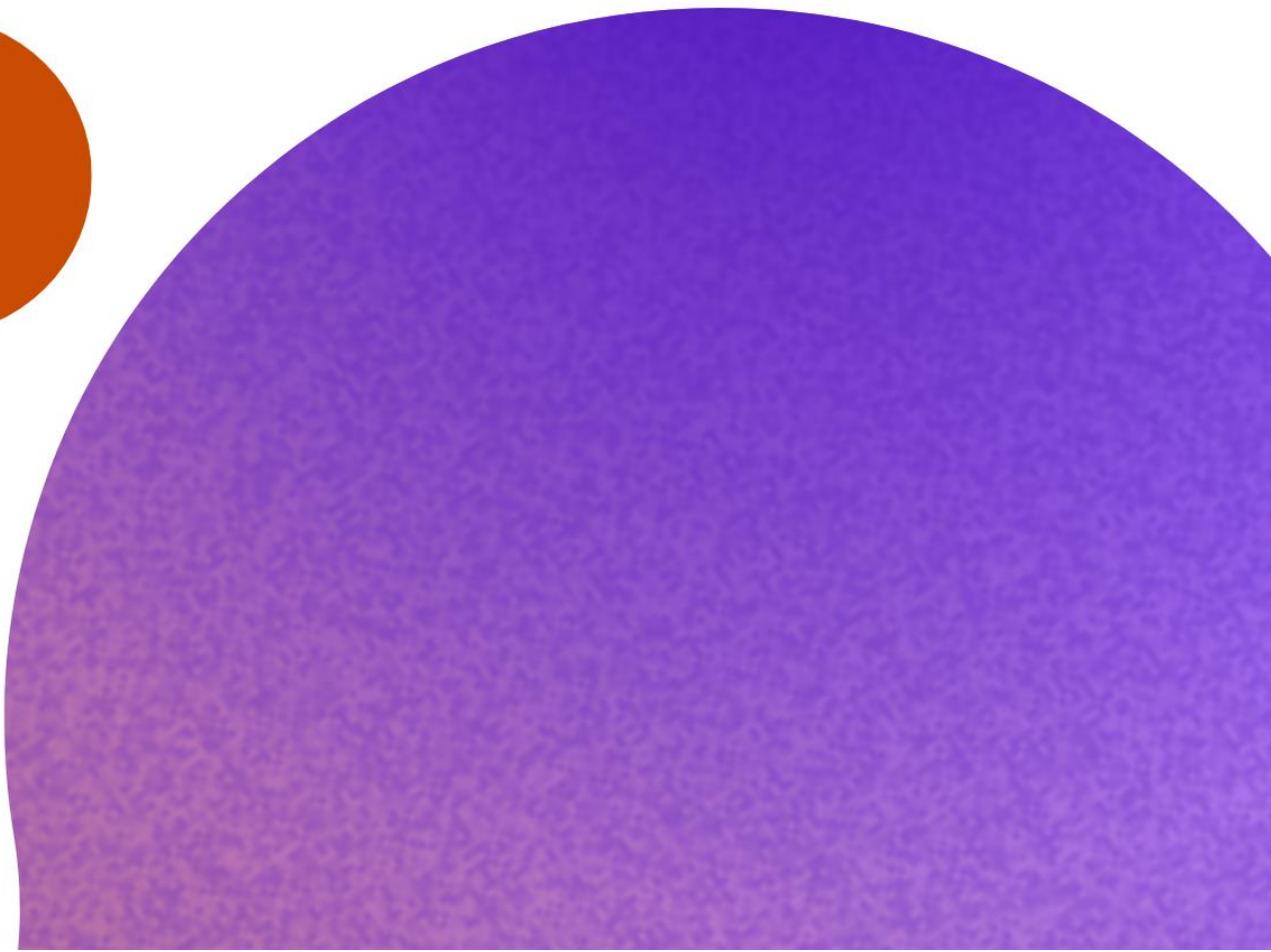
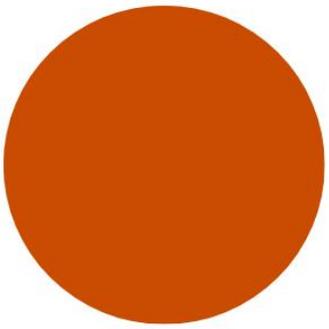
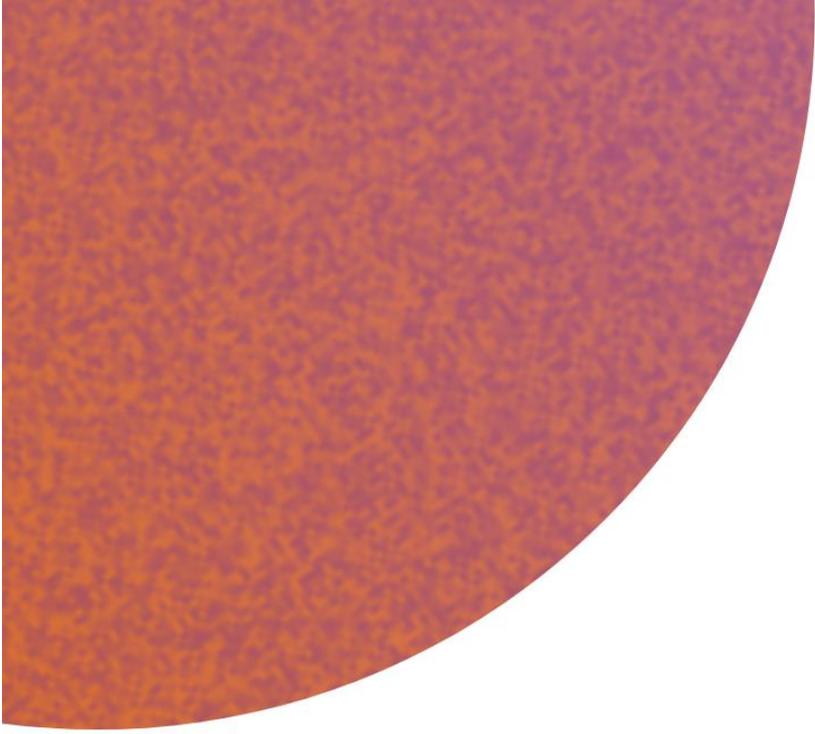
In **Task 1.3**, the qualitative analysis of the collection of curricula identified study programs which incorporate Accessibility, Universal Design and diversity (in their competences, course content descriptions, learning outcomes, etc.), and revealed diverse approaches across academic disciplines. The main activity of this task was categorising study programs into those integrating inclusion and accessibility throughout their curriculum and others addressing these topics through selected courses.

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Introduction

This report has been produced in the context of the ATHENA project and presents the findings of the analysis of university curricula in four countries regarding how accessibility and universal design are included in higher education curricula. ATHENA aims to “support the higher education sector in becoming more interconnected, innovative and inclusive [...] by developing and testing guidelines and recommendations on how to incorporate accessibility in curricula which will stimulate innovative learning and teaching practices to tackle social inclusion of persons with disabilities” [EUA22]. To do so, the project first sought to collect and analyse a sample of higher education curricula in selected domains. For the purposes of this task and taking into consideration the available resources and timeframe, university curricula from all academic partners in the consortium in Spain, Czechia, Cyprus, and Austria were selected.

University curricula define the scope and structure of a programme of study, the requirements to enter the programme, the learning objectives, outcomes and activities. Beyond being instructional blueprints, curricula reflect societal expectations, encompassing even the elusive "Hidden Curriculum" (as described by B.R. Snyder [SNY71]) that encapsulates unspoken attitudes and anticipated behaviours. Additionally, they carry political weight, directly or indirectly conveying the ideological standpoint and conceptualisation of the education type and values to be conveyed to learners, preparing them for their roles as citizens and future professionals.

Accessibility and Universal Design serve as the foundation for fostering greater independence and empowering self-determined participation. Their significance extends to individuals with disabilities, the ageing population, and various other societal groups. These principles act as essential gateways, bringing us toward the overarching objective of enhanced self-sufficiency and self-guided engagement across multiple domains, including education, employment, governance, administration, culture, and entertainment.

Definition of Accessibility

Accessibility is a fundamental principle that ensures equal access for all individuals, particularly those with disabilities [UNE21]. To achieve full inclusion, societies must address various barriers hindering persons with disabilities from accessing facilities, products and services. These barriers include physical obstacles like stairs, information made available in formats that are not usable for all, and services that are not comprehensible to individuals with disabilities. While some accessibility measures may be costly, there are low-cost, immediate solutions that can nevertheless make a significant difference.

This principle of accessibility applies across different aspects:

1. **Physical Environment:** Creating an accessible physical environment benefits everyone, not just individuals with disabilities. This includes removing obstacles in indoor and outdoor spaces, such as schools, medical facilities, and workplaces,

which might involve changes to buildings, sidewalks, curb cuts, and pedestrian pathways.

2. **Transportation:** Transportation is vital for independent living, allowing individuals to access various rights. Immediate steps should ensure that persons with disabilities have equal access to public transportation. This could involve measures like clear and multimodal announcements on buses and trains, accommodation for service animals, and Braille and symbol signage.
3. **Information:** Access to information is essential for decision-making and daily life activities. People in society rely on information in various forms. Accessible formats, like Braille, audio, symbols or sign language, should be made available, including on websites, and governments must ensure legislation and services for accessibility. This also extends to emergency information. Moreover, true accessibility not only grants individuals the means to obtain information but also emphasises that not only the retrieval of information is important; equally crucial is the interaction and active participation, fostering a more inclusive environment.
4. **Process:** However, full accessibility is more than single aspects but requires active participation across stages, starting with defining comprehensive requirements. Strategic planning, shaped by stakeholder involvement, follows to incorporate inclusive strategies. User testing evaluates accessibility, refining the process. Effective management ensures seamless integration of accessibility measures, fostering ongoing inclusivity throughout.

Definition of Universal Design

Universal Design is a broader concept that is defined by The Center for Universal Design at North Carolina State University as "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design." In a general context, it is a deliberate and comprehensive approach to design that seeks to create products, environments, and systems that are so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability [CEU23]. Its principles aim to ensure that the built environment, technology, services and products are usable and accessible by the widest possible audience without the need for specialised adaptations or retrofits [CON97]. Universal Design embraces the core values of human diversity, social inclusion, and equality, fostering an environment where everyone, regardless of age, ability, or background, can engage with and benefit from the designed solutions. Accessibility is about developing solutions to achieve universal design, which focuses but also goes beyond disability, as accessibility requirements may respond to the needs of diverse users. In addition, both universal design and accessibility cannot be viewed in disparity to assistive technology. Assistive technology is a tool for promoting independence and equal opportunities, but it can be such, only if environments are accessible and designed in ways that allow, encourage and support the use of AT.

Overall, if designers adhere to universal design principles, placing particular emphasis on ensuring accessibility for individuals with disabilities, and if experts consistently incorporate

individuals with diverse disabilities into design and development, a greater number of products, services and environments will be accessible and user-friendly for everyone, while also allow for the use of individual and customised assistive technology and other accommodations.

For the definition of other terminology used in this report, please refer to Entelis+ [ENT23]

Background and context of the project

Accessibility and Universal Design form the cornerstone for enabling independent living and full participation of individuals with disabilities across various societal domains, including education, employment, politics, administration, culture, leisure and sports, and entertainment [UNI06]. To accomplish this, it is imperative that Accessibility and Universal Design become integral components of mainstream HE curricula, shaping professionals, experts and researchers across diverse fields such as IT, Design, Arts, Architecture, Civil Engineering, Audiovisual, Teacher Education, Care and Social Sciences, Politics, Administration, Business, Economics, and Management. These professionals, experts and researchers must be equipped with knowledge about guidelines, standards, techniques, and tools in Accessibility and Universal Design, enabling them to skilfully design, implement, procure, set up, integrate, use, maintain and research accessible services and products for the benefit of individuals with disabilities, their communities, and society at large. The ATHENA project endeavours to craft a set of recommendations for the seamless integration of Accessibility and Universal Design into HE curricula, a significant stride towards fostering equal opportunities and social inclusion for individuals with disabilities. This collaborative effort between the European Disability Forum, representing over 100 million persons with disabilities in Europe, four universities with expertise in accessibility, and EURASHE, a key stakeholder in the European HE Area, will nurture the development of new practices and methods, ultimately influencing HE institutions to embrace the project's guidelines in the last phase of the project. With ATHENA, our aim is to revolutionise the HE sector, offering students an education that empowers them to play an active role in promoting accessibility and inclusion.

Purpose and objectives of Work Package 1 (WP1)

The primary purpose of Work Package 1 within the Athena project is to serve as the foundation upon which all other project efforts are built. Its central objective, characterised as the "State of Art: Mainstream Curricula Analysis," revolves around the identification of HE domains of significant relevance and priority for inclusivity and participation, as explained in Section "Task 1.1: Selection of HE Domains and Subjects". This entails conducting a comprehensive analysis, drawing from both state-of-the-art research and insights from stakeholders. WP 1 further aims to pinpoint an exploratory sample of curricula from these domains, examining the extent to which accessibility and the principles of Universal Design are adhered to, and how they are implemented within these educational contexts. This is the starting point of the following work aiming at formulating recommendations on the integration of Accessibility and Universal Design in HE curricula.

Accessibility in education: National context and legislative aspects

Below, we provide basic contextual information on accessibility and higher education in the countries of all academic partners (Spain, Czechia, Cyprus and Austria) with regard to existing legislation and the field of education.

Preliminary examinations of the national landscape indicate the following:

Across the countries of all academic partners – Spain, Czechia, Cyprus, and Austria – it is evident that programs in Education compared to the rest of the domains exhibit the highest degree of emphasis on accessibility and universal design. This particular focus is also well-embedded within each nation's legislative framework, consequently leading to specialised study programs focusing on training for educators to support students with disabilities effectively. Conversely, most other sectors within HE curricula show varying degrees of deficiency in their approach to accessibility and universal design, with only occasional exceptions (e.g. well-defined areas like web development on the forefront).

Insights into the national situation for each country are provided in the following sections:

Austria

In the 2022/2023 academic year, there were 393,000 students in Austria. Of these, 280,000 were students at public universities, 71,000 at universities of applied sciences, 38,000 at teacher training colleges, 20,000 at private universities and 250 at theological colleges [STA23]. These universities have about 2689 different study programmes [STU23a].

In Austria, around 12 percent of students have one or more health impairments that restrict them in their studies, according to the additional study "On the situation of disabled, chronically ill and health-impaired students", the current student social survey. Women are more likely than men to be affected by an impairment that makes studying difficult. Students with impairments are also on average one year older (28.6 years) than students without impairments. Most respondents were already impaired before starting their studies. More than half of all students with disabilities surveyed perceive their impairment as a major restriction in their studies, and only 17 percent of all respondents know of a corresponding contact person at their university. If you want to study with a chronic illness or health impairment, special regulations apply in some areas to enable you to study at all or to help you complete your studies. We have researched and listed various regulations and funding opportunities for students with disabilities. In principle, students with disabilities can choose and pursue any degree programme. Therefore, it is important to clarify the special modalities that may apply to students with disabilities with the person responsible for study matters before starting the degree programme. During the discussion, it is then possible to determine or jointly check whether the requirements of the degree programme can be met. [STU23]

Universities are subject to the Federal Disability Equality Act. The Federal Universities Act covers the right to a modified examination method for students with disabilities. Many

universities in Austria have representatives for students with disabilities and chronic illnesses. They offer support and information; "Uniability" is their Austria-wide network. According to a comprehensive report on the situation of students with health impairments, 1.1 percent of all students - more men than women - state that they have a disability, and 12 percent have a health impairment. The National Action Plan for Persons with Disabilities 2012-202 lists five measures in the field of higher education [DUN23]:

- Raising awareness of inclusion as part of the negotiations for performance agreements for the period 2013-2015;
- Continuation of the pilot project "Studying as a Deaf Person" at the Vienna University of Technology and securing the "Integrated Studies" institutes;
- Ensuring a possible increase in the training programmes for sign language interpreters and sign language teachers as part of the negotiations for performance agreements with the university;
- Networking of existing support programmes;
- Assessing the situation of students with health impairments at universities.

Accessibility and inclusion are increasingly important issues in our society, politics, economy and education. Therefore, these issues must be taught in universities and included in curricula so that knowledge about them is passed on to students and then disseminated in society.

A notable example is teacher training in HE in Austria [BMS22, EUA23]. However, other areas of HE have some catching up to do. Even if such courses are occasionally offered as electives, it is crucial that they are seamlessly integrated (compulsory) into the curriculum, primarily if they deal with legal obligations specific to the field, which must be strictly adhered to.

Nevertheless, teacher training plays a key role in promoting accessibility and inclusive education. The following text describes the current situation in Austria:

Teacher Education Reform 2013: A significant milestone in Austria's commitment to inclusive education was the enactment of the Federal Framework Act on the Introduction of New Training for Teachers (FLG I No. 124/2013) in July 2013. This legislation mandated the inclusion of inclusive education in the training for all teachers. The Act on the Organization of University Colleges for Teacher Education emphasises the need for inclusive education as a central focus for primary school education and as a specialisation in general secondary education at all university colleges for teacher education. It aligns curricula with the objectives of Article 24 of the United Nations Convention on the Rights of Persons with Disabilities and highlights the importance of addressing the needs of people with disabilities in accordance with the Federal Disability Equality Act.

Early Intervention Training: In most provinces, NGOs provide specialised early intervention teacher training, covering a uniform curriculum. Some provinces offer co-financing, and specific training is available for certain disabilities like sensory impairments.

Kindergarten Teacher Education: Aspiring kindergarten teachers undergo a five-year

program after eighth grade, followed by a four-semester course in some cases. Specialised training in special needs and early intervention is also available.

Integration of Inclusive Education: In Austria's broader teacher education system, inclusive education is a core component. The curriculum includes “special education”¹ in the fourth and fifth years of teacher education (one to two hours per week). Since 2016, “Inclusive education” has also been incorporated, with two hours per week dedicated to this essential aspect. Additionally, “Educational partnerships” are integral to the basic teacher education curriculum.

Teacher Education at University Colleges: Austria's university colleges of teacher education offer vocational education and training across all teaching areas, specifically tailored for teachers. These institutions provide various teacher training courses and offer opportunities for specialisation. Teachers can choose from vocational education and training programs for primary and secondary levels, including academic and vocational education courses. Further continuing education and training opportunities are available for teachers in all teaching profession fields, including inclusion-related courses.

Cyprus

In Cyprus, education and disability service delivery systems are centralised but, at the same time, fragmented across authorities in the public sector. The education for learners with disabilities is under the Education of Children with Special Needs Law of 1999 (N. 13 (I) / 1999-2020) [MoEC23b]. The Law refers to provisions for children ages 3-18 years, with an extension to 21 years if learners stay in the public education system until the age of 21. This is the case for students who need to repeat a certain stage in their education or children in special schools. In general, according to the Law, learners with disabilities can attend: special schools, special units (which are small classrooms with learners with disabilities in the mainstream school) and mainstream classrooms, where they receive individualised support of special education or speech and language therapy some hours per week, out of the class. In addition, learners may be provided with assistive technology based on relevant assessments. Current educational advances in the country are turning more to inclusive education, though integration is the common practice. Within this framework, there are efforts to differentiate instructions, to use differentiated and more accessible materials and to provide reasonable accommodations as defined by the UNCRPD.

With respect to HE, the Law indicates that provisions for students with disabilities are a responsibility of the HE institution (public or private) and should comply with the requirements and provisions that are in place in current legislation, including reasonable accommodations such as: sign language provision, use of (assistive) technology, extension of exams time, personal assistants.

¹ For the purposes of this report and the project in general, we adhere to the term *inclusive education* to refer to the education for students with disabilities. Quotation marks “..” are used to reflect the terms used by third parties in primary sources cited in this report.

The European Disability Expertise (EDE), through the DOTCOM search engine [EC23], provides updated information relating to national policies and legislation linked with provisions at the EU level regarding disability issues. Regarding HE, the universities' disability policy and practice in Cyprus are based on three denominators:

- The legislation of the current Education of Children with Special Needs Law of 1999 (N. 13 (I) / 1999-2020), as described above.
- The provisions of the Department for Social Inclusion of Persons with Disabilities, for disability benefits and funding.
- The universities' own regulations and internal policy. This applies to both public and private universities, following the national legislation as well as the requirements of the UN Convention on the Rights of Persons with Disabilities.

Regarding transitioning from secondary education to HE through the Pancyprian University Entry Examinations, the Pancyprian Law of 2006 on University Entry Examinations (N. 22 (I) / 2006) [CBA23a], and the Pancyprian Law of 2017 on the Conduct of Examinations for Access in the HE Institutions (HEIs) of Cyprus and Greece (N. 14 (I) / 2017) [CBA23b] protect the rights of candidates with disabilities to reasonable accommodations by making specific references to their right to use individual equipment (assistive technology) during the exam, while other accommodations are also available according to the candidate's disability-related needs, e.g., provisions for mobility and cognitive accessibility, as well as access to mainstream technology, and differentiated examination material and procedures. The candidate's requests for accommodations are examined by a reasonable accommodations committee (Special Committee for the Provision of Facilities), so that the rights of persons with disabilities towards this aim are ensured. Furthermore, according to the Excessive Positions in Special Categories in the Public Universities of Cyprus, Regulations of 2009 [MoEC23b], a maximum of 6 percent of all undergraduate positions in public universities are allocated to students with disabilities and/or other severe conditions (including chronic illness) and mental health difficulties. There are "special criteria" required for these applicants to enter the university, which means that these students may be allowed lower attainment in entry examinations compared to other applicants. Nevertheless, decisions about placement are subject to the availability of positions, and therefore, applicants may be offered a placement in a department which was not their preferred choice. Finally, once students are enrolled in any program of studies, they may attend preparatory seminars offered by the public university they are going to attend in order to develop skills for studying at the university level, such as academic writing, presentation, library use, etc. These courses are not exclusive to students with disabilities. Students with disabilities are also eligible for individualised support offered by the university (personal assistants), as part of the reasonable accommodations and other accessibility and adaptations provisions.

Accessibility is not specified in any of the legislation mentioned above, especially in terms of accessibility of learning content and materials or accessibility integration in HE curricula. However, Cyprus has recently implemented the Web accessibility directive by putting into force the Accessibility of Websites and Mobile Applications of Public Sector Organizations Law of 2019 (50(I)/2019), which makes web accessibility compulsory for all public institutions, including public universities. Even though the law refers to mobile applications, it

only involves accessibility of information provided on websites and mobile apps, and not the learning content or other content of the websites and mobile apps. In addition, it does not apply to the private sector, and hence, nor the private universities' websites. Cyprus is already expected to develop and put into force a policy and legislative framework complying with the EU Accessibility Act for the accessibility of products and services. However, this is not expected to be ready before 2025.

Czechia

At the end of 2021, a total of 304.1 thousand students [VSC22] were studying at universities in the Czech Republic. More than nine out of ten were educated at one of 26 public universities and 28 thousand at one of 32 private universities. Most students attended Charles University in Prague (50.000), Masaryk University in Brno (32.000) and Palacký University in Olomouc (23.000).

Accessibility and inclusion have become increasingly vital concerns across various facets of our society, including politics, the economy, and education. Consequently, it is imperative to integrate these topics into university education and curricula, ensuring that students acquire knowledge about them and subsequently share this knowledge with society.

Before presenting the basic findings resulting from the research conducted in HE in Czechia, firstly, some critical information is provided regarding the national context of Czechia around issues of accessibility, disability and education.

Despite numerous formal declarations on different levels (legislation, university policies, etc.), with minimal practical impact, Accessibility and Universal Design continue to be rare components within university study programs. Consequently, a significant number of students are deficient in this knowledge.

There are no teaching programmes related to accessibility/universal design for teachers, except those focused on "special education". Therefore, this knowledge and expertise are missing on the general level among teachers. Since there are almost no teachers who can teach these topics and there are just a few experts in the country, that's probably the main reason accessibility is not covered in the mainstream curricula of most university study programs.

Fortunately, there has been a positive shift recently, with several universities now incorporating these subjects into their curriculum. These institutions have begun to introduce study programs and specialised courses that focus on accessibility and inclusive design, and this report discusses them.

Overview of Czech Legislation Related to Accessibility of HE

The key legislative regulations that determine the requirements of accessible HE in the Czech Republic are the following:

- Convention on the Rights of Persons with Disabilities, which entered into force for

- the Czech Republic on 28.10.2009.
- Act No. 198/2009 Coll. (Sec. 1–7) on equal treatment and on legislative means of protection against discrimination and amendments to certain other acts (Anti-Discrimination Law). This is the key law which defines the group of people with disabilities quite widely (according to Sec. 5, there is no doubt that, for example, persons with specific learning disorders and other invisible disabilities are, from the point of view of Anti-Discrimination Law, persons with disabilities) and grants them very excessive and sometimes not easily implementable rights – it introduces, for example, the possibility of positive discrimination (Sec. 7) and states that it is not discriminatory in the view of Anti-Discrimination.
 - Act No. 155/1998 Coll. (Sec. 7–10) on the communication systems of persons with hearing loss as amended by Act No. 384/2008 Coll. (hereinafter only Law on the communication systems). This law defines the use of communication systems by deaf and deafblind persons as their means of communication. For HE of persons with hearing loss, Sections 7 and 8 (right to free education in special communication systems and to the study of the systems themselves) are relevant. The well-known weakness of the act is the fact that it does not deal with the education of the service providers (e.g. sign language interpreters) and the service then cannot be provided due to the lack of providers.
 - Act No. 121/2000 Coll. on copyright or related rights (Copyright law), Section 38 is the relevant provision granting the persons with disabilities a free licence of an electronic or other accessible format of published works which would enable them to access documents published in a format inaccessible to them.
 - Decree No. 398/2009 Coll. about general technical requirements securing barrier-free use of buildings (Regulation on barrier-free use of buildings). A key legal regulation determining technical requirements for buildings and their parts to secure their use by persons with motor, visual, hearing and mental disabilities. The bottleneck of the Decree is the pragmatic provisions Sec. 2 and Sec. 14, which enable exemptions from normally mandatory provisions and which are in practice often applied particularly during the renovation of older buildings, including schools, instead of technical adjustments.
 - Act No. 111/1998 Coll. about universities and on change and amendments to other acts as amended by Act No. 137/2016 Coll. (Higher Education Act). The accessibility of HE institutions is not specifically defined by the law. The only relevant resolutions include Sec. 1, which vaguely refers to the accessibility of university education in compliance with principles of democracy; Sec. 21, which mentions the obligation of schools to publish information of accessibility; and Sec. 78, which also vaguely mentions the obligations a school has in relation to the persons with disabilities when it applies for institutional accreditation.
 - Rules for providing support to public universities by the Ministry of Education, Youth and Sports, Appendix No. 3 Financing increased costs connected with educating students with special needs. This is a methodological guide, which is amended every year. There are two main sources of financing for inclusive HE institutions, both enshrined in the same document. Firstly, counselling services and school infrastructures needed for providing counselling and other

indispensable services, as arises mainly from the Convention and the Anti-Discrimination Act, Act on the Communication Systems of the Deaf, etc. (i.e. not the service itself), are funded by the same principle that applies to mainstream students. The ministry does not specify the amount of money the individual HE institutions should spend on the necessary service (e.g. sign language interpreting, braille printing, speech-to-text reporting, adapting documents to an accessible format, etc.). Secondly, apart from counselling, the mechanisms of financing the increased costs incurred by HE institutions about incapacities are specified in the Appendix. The document contains a typology of students with special needs, which considers their disability, and a list of standardised measures designed to satisfy the needs of students with disabilities. The procedures result from an agreement between a student, professional service office of the HE institution and a representative of a faculty or a study programme based on the student's communicative possibilities, work and other specific needs. The main aim is to enable the student to successfully progress through the studies both formally and from the point of view of content and to reach the necessary goals of studies, work and/or research.

Since the key legislative regulations are focused on the accessibility of HE as such, the system of support centres for students with special needs at universities is currently well developed across the whole country. Apart from providing services, in the context of the Athena project, these centres can, if needed, provide their staff as lecturers to teach the topics of accessibility and inclusive design.

Spain

In Spain, there are 89 universities (50 public and 39 private universities) as of the academic year 2022-2023 [SII23]. In total, there are 9447 degrees (4226 BAs, 4025 MAs and 1196 PhD programs), making it the largest university system among the academic partners.

As a general context for the report, Spain has had a long history of legislation on the right to education for people with disabilities, but until recently, there was no legislation on the inclusion of accessibility and universal design in higher education curricula, as detailed below. The Spanish ANED country report on equality of educational and training opportunities for young disabled people lists these laws up until 2010 (2010, p. 3), to which the European Disability Expertise (former ANED) adds two more up to January 2023 (2023, p. 25):

The Spanish Constitution (1985), the Organic Act on the Right to Education (LODE, 1978), the Royal Decree 696/1995 of 28 April; the Organic Law 2/2006, 3rd May, on Education (LOE, 2006); The Royal Decree on Vocational Training 1538/2006 of 15 December; the Royal Decree 395/2007 that regulates the vocational training for employment (CVET); the Organic Law 6/2001, of 21 December, on Universities, the Organic Law 4/2007, of 12 April; and the Royal Decree 1393/2007 of 29 October.

Organic Law 3/2020 of 29 December, 38 amending Organic Law 2/2006 of 3 May on Education. This law places greater emphasis on inclusive education and the use of special education centres more as centres of reference and support; and Organic Law 3/2022 of 31 March, 39 on the organisation and integration of Vocational Training. This law addresses the training of students with disabilities and makes various proposals to guarantee access to this training.

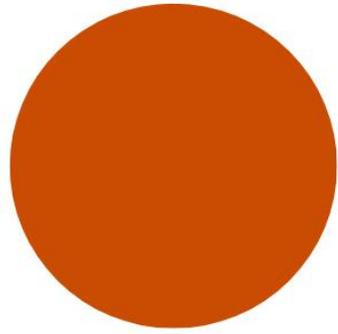
Additionally, public institutions must comply with accessibility laws, namely Law 51/2003, on Equal Opportunities, Non-discrimination and Universal Accessibility of Persons with Disabilities (LIONDAU) and the Royal Legislative Decree 1/2013, of 29 November, approving the Consolidated Text of the General Law on the Rights of Persons with Disabilities and their Social Inclusion. This is particularly relevant in our context given that, as of 2022, 82.8 percent of students attend public universities in Spain [MIN22].

Specifically, for our purposes, the most recent legislative step towards accessibility and universal design in HE can be found in the latest devoted legislation: The Organic Law of the University System (2/2023). Therein, it is stipulated that for universities to be established and validated, they need to deploy plans that guarantee gender equality as well as accessibility measures and reasonable adjustments for people with disabilities. Gender equality action plans are already in place in Spanish universities (for instance, fostering the incorporation of gender perspectives in research and teaching), but comparable accessibility and universal design action plans are lacking. This poses an opportunity for the ATHENA project.

More broadly, the legal requirement to incorporate accessibility and universal design in Spanish university curricula is established in the Royal Decree 1112/2018, on the accessibility of websites and mobile applications in the public sector, which transposes the EU Directive 2016/2102 of the same name. It states:

“The public sector bodies [...] shall promote measures for awareness raising, dissemination, **education and training in accessibility** in an effort to drive the owners of websites and mobile apps other than those covered by this Royal Decree to gradually and wherever possible integrate accessibility requirements, especially in connection with goods and services offered to the public.

The European Accessibility Act (Directive 2019/882) has also been transposed in Spain, in the Royal Decree 193/2023, of March 21, by which the basic conditions of accessibility and non-discrimination of persons with disabilities for access and use of goods and services available to the public are regulated. In this Decree, however, no references to education in accessibility are included.



Methodology

Explanation of the research methods in the three tasks

The following section gives an overview of the methodology, employed for work package 1 which involves the selection and analysis of a sample of higher education curricula in selected domains as to how accessibility and universal design are included in university curricula. This subtask focuses on the selection and analysis of a sample of education curricula in selected domains. The reader is advised to note that within the higher education domain only university curricula were selected for this task in light of available resources and time.

Task 1.1: Selecting (identifying, defining and prioritising) a representative and qualified list of HE-domains and subjects where Accessibility and Universal Design approach are of particular importance

Task Description: In this task, a comprehensive and qualified list of HE domains and subjects where the Accessibility and Universal Design approach held exceptional importance was identified. The domains considered included IT and Digitalization, Engineering, Design and Arts, Architecture, Civil Engineering, Audiovisual, Electronic Communications, Teacher Education (both mainstream and inclusive), Care and Social Sciences, as well as Politics with a specific focus on Administration, Business, Economics, and Management.

Method: This task utilised a combination of State-of-the-Art analysis and expert consultation to arrive at the list of HE domains and subjects.

Output: The output is a list of the 7 most crucial domains, with a list of especially important subdomains for each of the main domains.

Task 1.2: Collecting a sample of HE curricula in the selected domains

Task Description: Task 1.2 focused on the collection of a sample of HE curricula from the previously selected domains. This entailed gathering 21 curricula per participating country spread across the 7 domains.

Method: To collect these curricula, requirements for candidate curricula were defined, including the use of an extensive list of keywords. Based on this, experts in the respective countries conducted a quantitative analysis of each candidate's curriculum to ensure its suitability for our purpose. The output was a comprehensive collection of educational materials related to curricula.

Output: A comprehensive collection of educational materials related to curricula was created.

Task 1.3: Analysing of the sample if the Accessibility and Universal Design approach are included and how

Task Description: This task involved a thorough examination of the collected sample of HE curricula to assess whether and how the Accessibility and Universal Design approach was incorporated. This analysis explored the extent of integration, such as whether it was a mandatory course, part of various courses, an optional course, or perhaps presented as a small seminar with limited impact.

Method: A qualitative approach (thematic analysis) and moderated cross-partner and expert groups were employed for this task. It also identified good practices in curriculum design. The themes for the thematic analysis were derived from literature (see chapter Task 1.3 for further details).

Output: The outcome of this task was a tabular overview and a comprehensive discussion on the extent to which Accessibility and Universal Design principles were respected in the curricula.



Task 1.1: Selection of HE Domains and Subjects

Methodology for this task

Task 1.1 involved the selection of HE domains, which were based on the ISCED Fields of Education and Training 2013 (ISCED-F 2013) classification system. Task 1.1 and task 1.2. seek to answer the following research question:

Research Question 1: Is the Accessibility and Universal Design approach included in the sample of HE curricula in the selected domains?

ISCED Fields of Education and Training 2013 (ISCED-F 2013) is a classification system that categorises educational programs and courses based on their subject matter and content, allowing for the standardised comparison and analysis of education across different countries and regions. It provides a framework for organising education and training activities into distinct fields, facilitating the collection and dissemination of data related to educational levels and areas of study. [ISC13]

The methodology incorporated experts from each of the four partner countries (Spain, Cyprus, Czechia and Austria), engaging their insights through an in-situ focus group process. Our criteria for domain selection considered:

- the availability of sufficient suitable study programs in each partner country to facilitate cross-country comparisons, and
- the domains' potential for high economic, political, and social impact as identified by the experts.

This collaborative approach ensured a systematic and comprehensive selection of domains with meaningful educational and societal relevance.

Country-specific variations in the methodology

There were no country-specific variations of this task as the whole activity was complete in direct cooperation within a workshop facilitating the focus group method.

Difficulties/challenges of this task

This task encountered minimal difficulties or challenges. The primary consideration in our approach was the disparity in educational systems across countries, often influenced by their respective sizes. For example, comparing a smaller country like Cyprus to a larger one like Spain revealed significant differences in the range of available study programs. Consequently, we made sure to select domains that encompassed study programs available even in smaller countries, important for cross-country comparisons later on.

Findings and Results of this task

The task yielded a list of domains and subdomains rated for their importance regarding Accessibility and Universal Design within their curricula, while also considering the potential "economic/political/social impact" of the educational programs.

The rating system employed for this assessment included four categories to describe how relevant a domain is in regard to the economic, political and social impact:

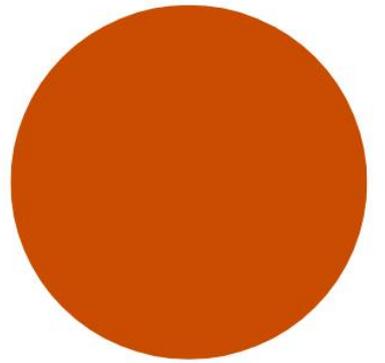
- extremely relevant
- relevant
- nice to have
- not relevant

Seven main domains were identified as "extremely relevant":

- Education
- Arts and humanities
- Social sciences, journalism and information
- Business, administration and law
- Information and Communication Technologies
- Engineering, manufacturing and construction
- Health and welfare

Each main domain contains a list of subdomains, all rated based on their relevance.

The detailed list of rated domains can be found in the appendix.



Task 1.2: Collection of HE Curricula

Methodology for this task

Experts of ATHENA established four key criteria for selecting texts for our ad-hoc corpus analysis. These criteria were: 1) coverage of seven areas of knowledge as defined by ISCED-F 2013 [ISC13]; 2) availability of the chosen HE programs across participating countries; 3) public availability of curricula and syllabi; and 4) the relevance of Accessibility and Universal Design in the curriculum. The corpus included both BA and MA programs for each domain. We have not considered PhD programs due to the high degree of variance in their structure among the four academic partners as well as the high degree of emphasis on research courses rather than content-based courses in their curricula.

The latter selection criterion required a quantitative analysis employing an extensive list of keywords and their translations into the national languages (found in the appendix). Experts in each respective country then conducted a quantitative assessment (through corpus analysis) of each candidate's curriculum to ensure its suitability for our research.

Keyword searches were carried out using Sketch Engine [KIL14] and examined in terms of absolute frequency, relative frequency, and dispersion, standard measures in corpus linguistics [BRE18]. This analysis enabled us to identify curricula and syllabi that incorporate accessibility and universal design, quantifying the occurrence of specific keywords.

It's important to note that sources and search strategies were adjusted to accommodate national variations. It is also worth noting that most universities publish curricula and syllabi in their national or regional languages, with only a few in English. Therefore, keywords were translated when necessary.

As a result, we acquired a comprehensive collection of educational materials, containing 21 curricula with relevant syllabi. Our primary aim was to distribute these evenly across the seven domains, with minor adjustments made if an insufficient number of suitable curricula were found, as detailed in the following chapter.

Country-specific variations in the methodology

Austria: In Austria Studienwahl.at was the primary source for acquiring curricula assisted by the database of EQAR [EQA23] to retrieve additional information. However, a more focused approach was adopted, emphasising specific domains as needed. Retrieving information for the curricula involved a multi-faceted approach: The process of acquiring curricular information involved downloading PDFs when available, generating PDFs from web content where appropriate, utilising web scraping techniques for extensive web data, and resorting to manual retrieval only as a last resort for a small number of study programs. For the keyword search, a comprehensive search encompassed all curricula and all associated syllabi for each study program, rather than singling out specific courses.

Cyprus: As Cyprus is a small country, the approach concentrated on specific domains, using the websites of all nine universities in Cyprus. For the keyword search, an extensive keyword search was conducted across the entire set of downloaded programs (curricula and syllabi). Search was divided into three subsequent searches due to the large dataset, including programs that may have had incomplete syllabi, and thus were not used in previous searches. The initial sample for analysis in Sketch Engine included only study programs that provided all relevant information (syllabi and program objectives and learning outcomes). However, the first analysis in Sketch Engine yielded limited results, prompting us to broaden our search to include additional study programs, even if they lacked some syllabi.

Czechia: In pursuit of a relevant sample, the initial approach using the Register of Universities and Study Programs proved unsatisfactory, even for general keywords related to accessibility, disability, and universal design. To overcome this challenge, an intensive manual keyword search was conducted on university websites during April and May, incorporating both ad hoc and targeted searches based on project expertise. Additionally, surveys were conducted among students, members of the Association of Service Providers for Students with Specific Needs, and accessibility professionals. Knowledge of local specialities and institutions with a history of support for students with special needs guided the search. The combination of these efforts, despite numerous negative responses and manual searches, eventually led to the discovery of the desired 21 relevant curricula, achieving the project's specified goal. The analysis was done at the level of the courses as no information was available at the level of the curriculum program objectives.

Spain: As expected, there were no particular challenges in finding a suitable sample in Spain. The country's abundant university program offerings ensured a wealth of publicly available curricula and syllabi. To retrieve the 21 curricula, universities offering the selected program were randomly selected from the RUCT (Register of Universities, Centres and Qualifications tool from the Ministry of Universities), which gathers all programs of study currently and formerly available in the country.

Overview of the dataset

National curricula were analysed according to the four criteria, including the keyword search until 21 matching curricula + syllabi relevant to Accessibility and Universal Design were found. The corpora for quantitative analysis for each country looked like this:

Austria: In April 2023, a dataset comprising 21 distinct curricula spanning seven domains was compiled. Each domain featured three curricula, ensuring representation from both master's and bachelor's study programs. Among the programs, five included all their syllabi within a single document, while one had no online syllabi available. For the remaining programs, individual syllabi were accessible online. Notably, the entire corpus was exclusively in the German language. The selection of study programs was made with the aim of providing comprehensive coverage of their respective domains. In general, this approach yielded positive results. However, in certain domains, finding programs that matched our criteria proved challenging (keyword search). Consequently, in a few instances, the focus of the selected study programs may appear slightly skewed in one direction or

another. For instance, the domain of business now includes “business informatics”, which is not the core focus of this domain. Unfortunately, the examined traditional business study programs did not incorporate accessibility or design-for-all principles. Similarly, within the arts and humanities domain, there is now an emphasis on language, driven by similar constraints.

Cyprus: In April 2023, two final datasets and corpora were created, for study programs (and respective curricula) taught in Greek (7) and English (14), respectively. Actually, in some cases, the curricula and syllabi were not both retrievable in the language in which the curricula were taught. The curricula were a total of 21, spanning to seven domains plus one different domain (Services domain was pertinent only to Cyprus). These programs included at least one of the keywords decided by the consortium, which appeared at least once, and bore meanings linked to the concepts and aims of the study. Some words which were captured by the keyword search held meanings which were not relevant to the study and were therefore not considered for analysis, e.g., "differentiation" was not always mentioned as the educational strategy leading to personalised learning. The number of curricula for each domain differed, in an effort to find programs that included the searched keywords. An effort was made to include both bachelor's and master's degrees for each domain, but this was not always feasible (e.g., some domains included only one program). From all the programs that were provided on the websites of the universities, an effort was initially made to include programs from different universities.

Czechia: The dataset resulting from this sampling effort comprises 20 relevant courses and one study program, with the goal of representing each of the seven defined domains. The courses span across these domains, offering a diverse range of subjects that encompass special education, digital competences for educators, social research, inclusive design, legal rights, user interface implementation, information services design, humanitarian computer applications, human-computer interaction, accessible architecture, and adapted physical education. The dataset includes a blend of English and Czech course descriptions, each providing specific insights into their content and relevance.

Spain: The Spanish corpus (collected between March and April 2023) is made up of 42 documents (21 curricula and 21 syllabi, all in Spanish). The Spanish dataset is divided into two subcorpora, one devoted to curricula and another to syllabi. The Spanish curricula subcorpus is noticeably larger than the syllabi subcorpus. Specifically, the curricula make up 94.06 percent of the corpus). This reflects the textual differences among the text types: public syllabi in Spain are considerably shorter, designed to be frequently and quickly consulted, while Spanish curricula are validated once and updated every few years. The latter contains, among others, the description, objectives and justification of the program; learning outcomes; study plan; and applicable university policy.

The study programs range from more widespread programs in Spain such as Primary Education, Law, Architecture, Computer Engineering and Medicine (mostly BAs) to some specialised MA programs more directly linked to accessibility and universal design, i.e. more narrow-focused programs: Audiovisual Translation; Gender Studies and Management of Equality Policies, Health, Integration and Disability; Artificial Intelligence and Disability and

Dependency. The choice of the latter group was motivated by the aim of finding good practice examples that could be incorporated into the more conventional, common programs.

Difficulties/challenges of this task

Out of the four countries, three encountered challenges while completing this task. Spain, being the largest and having the biggest educational system, did not face any issues. However, the other countries struggled to find suitable curricula that met the criteria. Eventually, all countries managed to identify 21 curricula, although not all of them covered all 7 domains evenly.

Obtaining the required information proved to be a challenge in general. The presentation of study programs varied significantly between countries and even among different universities. This variance affected the keyword search process and the ease of finding evidence of Accessibility and Universal Design in the curricula and syllabi. Consequently, the outcomes are not easily comparable to one another.

Insights into the national situation for each country are provided in the following sections:

Austria: For some domains it was difficult to find suitable curricula which met the criteria. For that reason, after multiple failed attempts, a more focused search was applied for these domains: 1) Business, Administration and Law, 2) Arts and Humanities and 3) Health and Welfare.

Cyprus: Since it was difficult to find suitable curricula that met the criteria for some domains, a more focused search was applied. The domains that manifested this difficulty were mostly Business, Administration and Law and Information and Communication Technologies. Also, the current composition of study programs does not seem to be strictly equivalent to the domains presented in ISCED-F 2013, and categorisation to one or another domain or subdomain seemed difficult in specific cases.

The syllabi documents were found as separate documents in other links for most of the universities (i.e. a separate document for each syllabus), while in others, the whole curriculum, including analytical syllabi, was included in the same document. Thus, to keep the same approach for all documents analysed, separate documents were merged into respective PDF files. Syllabi of compulsory courses had been made distinct from syllabi of elective courses so that this information could be used early in the research process, in case it was important for making the selection of data based on this. However, it is noted that it was not easy to retrieve this information in all documents and data available.

Czechia: Finding appropriate curricula in certain domains that satisfied the criteria proved challenging. A further complication in many cases - in addition to the difficulties described above - was the publication of only general information on the study program or the course, on the basis of which it was not possible to decide whether the study program was suitable for the data set. Moreover, too brief syllabi (often just a few very brief bullet points) were a

hindrance. Thus, it was virtually impossible to get a more concrete idea of the level of detail devoted to accessibility and inclusion.

Spain: There were no relevant challenges for this task in Spain, as explained in the general Methodology section.

Findings and Results of this task

All four countries, Austria, Czechia, Cyprus and Spain, eventually identified 21 suitable curricula meeting the criteria. Across the countries analysed in Task 1.2, common findings and similarities emerge regarding the inclusion of accessibility and universal design principles in curricula and syllabi. Notably, the presence of these keywords varies both in absolute and relative frequency. In Spain, for instance, the most frequent terms revolve around disabilities and accessibility, while more specialised terms are less prevalent, likely due to their broader context of rights and policies. In Cyprus, the presence of these keywords varies between curricula and syllabi, with some programs featuring more specific content on universal design and accessibility.

In Czechia, the Education, Information and Communication Technologies, and Social Sciences domains demonstrate a larger representation of accessibility and universal design, whereas the Engineering, Manufacturing, Construction, and Health and Welfare domains have comparatively lower representation. Similarly, in Austria, terms related to Accessibility, Assistive Technology and Universal Design are well present in some study programs in Education, Information and Communication Technologies, Social Sciences, and Engineering domains, while others have limited coverage. This suggests that accessibility and universal design are more prominently featured in certain academic disciplines, reflecting differences in the emphasis placed on these principles across various fields of study.

Austria: During this task, 40 curricula were analysed in total, employing a quantitative approach that involved keyword searches and resulting metrics. This process ultimately led us to identify 21 curricula that incorporated principles of Accessibility and Universal Design. Additionally, 21 syllabi were selected, one per curriculum, for further analysis in Task 1.3. A Linguistic analysis serves as the foundation for the selection of appropriate curricula. The ensuing paragraph encapsulates the key findings, highlighting the most prominent results.

In our analysis, some uncommon terms and expressions were encountered within the German language that proved challenging to locate, such as "Menschen im Mittelpunkt" (people at the centre) or "angemessene Anpassung" (reasonable adjustment) (absolute frequencies: 0 hits / 0.0 hits per million). Interestingly, for several study programs, only a limited number of courses contained accessibility or assistive technology-related terminology in their texts, while in contrast, numerous study programs featured more than two courses with relevant keywords (TU Wien - Civil Engineering, University Wien - Sports Science, FH Kärnten - Disability and Diversity Studies, FH - Salzburg Social Work, Universität Graz - Translation and dialogue interpretation). The term "Integrativ*" (integrative) surfaced most frequently (absolute frequencies: 78 hits / 65.91 hits per million), although its usage is not entirely indicative of our specific context, as it's also commonly employed in a migration-

related context. "Barrierefrei*" (barrier-free) ranked as the second most frequently identified term (39 hits / 32.96 hits per million), with a clear association with the intended context of people with disabilities in Germany. Additionally, "Barrierefreiheit" (barrier-free accessibility), in its noun form, was nearly as prevalent (26 hits / 21.97 hits per million). Beyond these terms, "unterstützend" (supportive) also appeared, albeit with some ambiguity within the German language and not necessarily specific to Persons with Disabilities (PwD). Notably, the attempt to rank keywords and search terms within a top 500 list yielded no usable results.

An analysis of curricula and syllabi revealed the following: "Barrierefreiheit" (Accessibility) is overrepresented in FH Kärnten's Disability and Diversity Studies program, while "Unterstützend" (supporting) is overrepresented in the University of Klagenfurt's Business Informatics and Primary Education curriculum. "Universal Design"/"Design for All" is of greater relevance in the field of architecture, and the English term "Accessibility" takes precedence in an IT-related context.

Cyprus: During this task, 175 curricula in total were analysed, employing a quantitative approach that involved keyword searches and resulting metrics. This process ultimately led to the identification of the above mentioned 21 curricula/programs that incorporated principles of Accessibility and Universal Design. Regarding both corpora (English and Greek), for several study programs, only a limited number of courses contained accessibility or assistive technology-related terminology in their texts, while in contrast, numerous study programs featured more than two courses with relevant keywords.

Regarding the Cypriot corpus of programmes in English, no keywords were located in the Curricula. With regards to the Syllabi in English, the keyword more frequently encountered in the corpus was *accessib** (45 hits). Of those, 25 were found in the graduate program Interaction Design and in particular in the syllabus Universal Design (Universal Design, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a], either in the text, or in tables. This keyword was also found in other programs where discussion of accessibility issues is to be expected, as well as once in the undergraduate program in Hospitality Management (Hospitality Management BBA, University of Nicosia, Cyprus) [UNIC23c]. Universal design had 15 hits, but all were found in the same syllabi where *accessib** was found. The ranking of (single word) keywords in a top 500 list did not provide any usable results, whereas 21 keywords had zero hits.

Regarding the Cypriot corpus of programmes in Greek, this yielded 2 hits in the curricula: *νοηματική* γλώσσα** (sign language) in the syllabus introduction in sign language of the curriculum of the Speech Therapy BSc in Health and Welfare domain (Speech Therapy BSc, European University Cyprus, Cyprus) [EUC23f]; and *σχεδιασμ* για όλους* (Universal Design) in the title of the homonym syllabus of the undergraduate program Multimedia and Graphic Arts in Arts and Humanities Domain (Multimedia and Graphic Arts BA, Cyprus University of Technology, Cyprus) [CUT23c]. Regarding the syllabi in the data set, *υποστηρικτικ**/assistive appears mostly in various syllabi in the undergraduate program in Occupational Therapy in Health and Welfare domain (Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23d], and also in Special and Inclusive Education (in total 71 times) in

Education domain (Special and Inclusive Education MA, European University Cyprus, Cyprus) [EUC23e]. The keyword also appeared a few times out of context (e.g., regarding supportive services). The ranking of (single word) keywords in a top 500 list did not provide any usable results, whereas 20 keywords had zero hits.

Of the initial keywords that were searched through Sketch Engine, 14 keywords mostly relevant to references specific to accessibility requirements and assistive technology (e.g., Braille, audio description, speech-to-text, etc) were not retrieved at all, across corpora in both languages (Greek and English).

Thus, the domains with the largest representation were Education and Health and Welfare, whereas Business Administration and Law had very small representation.

Czechia: During this task, dozens of curricula were analysed at different universities in total to find those which are relevant to the Athena project (it means where the desired keywords are covered). Both quantitative and qualitative approaches were used, combined with our expertise, knowledge of local specialities (where suitable study programs for our project are most likely to be found) and the results of surveys.

From the practical point of view, the steps were followed as described in the section Methodology, which describes the Czech-specific variations. All of these helped to address universities/ and study programs where Accessibility and Universal Design/Design for All might be incorporated.

This process resulted in 20 courses and 1 study program that cover principles of Accessibility and Universal Design/Design for All in one way or another and are relevant to the Athena project.

Unsurprisingly, the domains with the largest representation were Education, Information and Communication Technologies, Social Sciences, and Journalism and Information. The least representation was in the domains of Engineering, Manufacturing and Construction, and Health and Welfare.

Spain: Regarding the departing question of whether Accessibility and Universal Design are included in the sample, in terms of both absolute and relative frequency, the overall most frequent keywords throughout the corpus - that is, throughout all fields of knowledge and including specialised and non-specialised degrees - are “with disabilities” (498 hits/435,31 hits per million words), “accessibility” (331 hits/289,33 hits per million words) and “people/persons with disabilities” (221 hits/193,18 hits per million words). More “specialised” terms appear less frequently throughout, with several of the original keywords not being included at all in the selection of curricula and syllabi: “alternative text”, “plain communication/language”, “text-to-speech”, “reasonable accommodation/adjustment” etc. Some keywords specifically linked to particular domains are “audio description”, “voice recognition” and “subtitling”, which all concentrate in the Arts and Humanities curricula and syllabi; “assistive technology”, which appears exclusively in the Disability and Dependence MA curriculum and its devoted syllabus to assistive technology (Health and Wellness); and “Braille and screen reader”, which, though infrequent, concentrate in the Artificial Intelligence

MA curriculum (Engineering, Manufacturing and Construction). The reason behind more general keywords being more present throughout is that they are included in contexts outside the scope of this study: the rights of students with disabilities, the policies of the HE institutions in terms of inscription rates of students with disabilities, etc.

Prioritising the results in terms of relative frequency in order to allow for comparison among subcorpora [GRI10], the curricula subcorpus yields similar results to the overall corpus (both in terms of the keyword frequency ranking and relative frequency results), but the syllabi subcorpus diverges greatly. The most salient word in terms of relative frequency in this subcorpus is “accessibility” (1190,04 hits per million), followed by “with disabilities” (554,45 hits per million), “persons/people with disabilities” (446,27 hits per million), “universal design” (392,17 hits per million) and “accessible design” (392,17 hits per million). The difference among curricula and syllabi in terms of hits per million is noticeable, and it has to do with the fact that several of the syllabi are more specific in their content related to universal design and accessibility than common or conventional curricula.

In terms of the dispersion of the results, the most salient keyword (“with disabilities”) is overrepresented in the Health, Integration and Disability MA curriculum, while “accessibility” is more scattered across the corpus, with some overrepresentation in the Universal Design syllabus, as well as the Website Usability, Accessibility and Adaptability syllabus, and the Audiovisual Translation MA curriculum. As is to be expected, the Universal Design syllabus overrepresented many of the selected keywords: people “with disabilities”, “accessible design”, “universal design” and “design for all”, while the Health, Integration and Disability curriculum would be one of the more relevant for our purposes, overrepresenting the keywords “with disabilities”, “accessible design”, with another one being the curriculum, overrepresenting the keywords “accessibility”, “audio description”, “voice recognition” and “subtitling”. Other specific examples of relative overrepresentation of keywords are the Artificial Intelligence MA curriculum and the Audio Description and Subtitling syllabus (from the Audiovisual Translation MA).

Curricula Overview

The following table gives a complete overview of the study programmes selected for each domain. In the case of Czechia, it is courses and one study programme (as some courses are not linked to a specific study programme, the selection in Czechia was based on courses rather than study programmes).

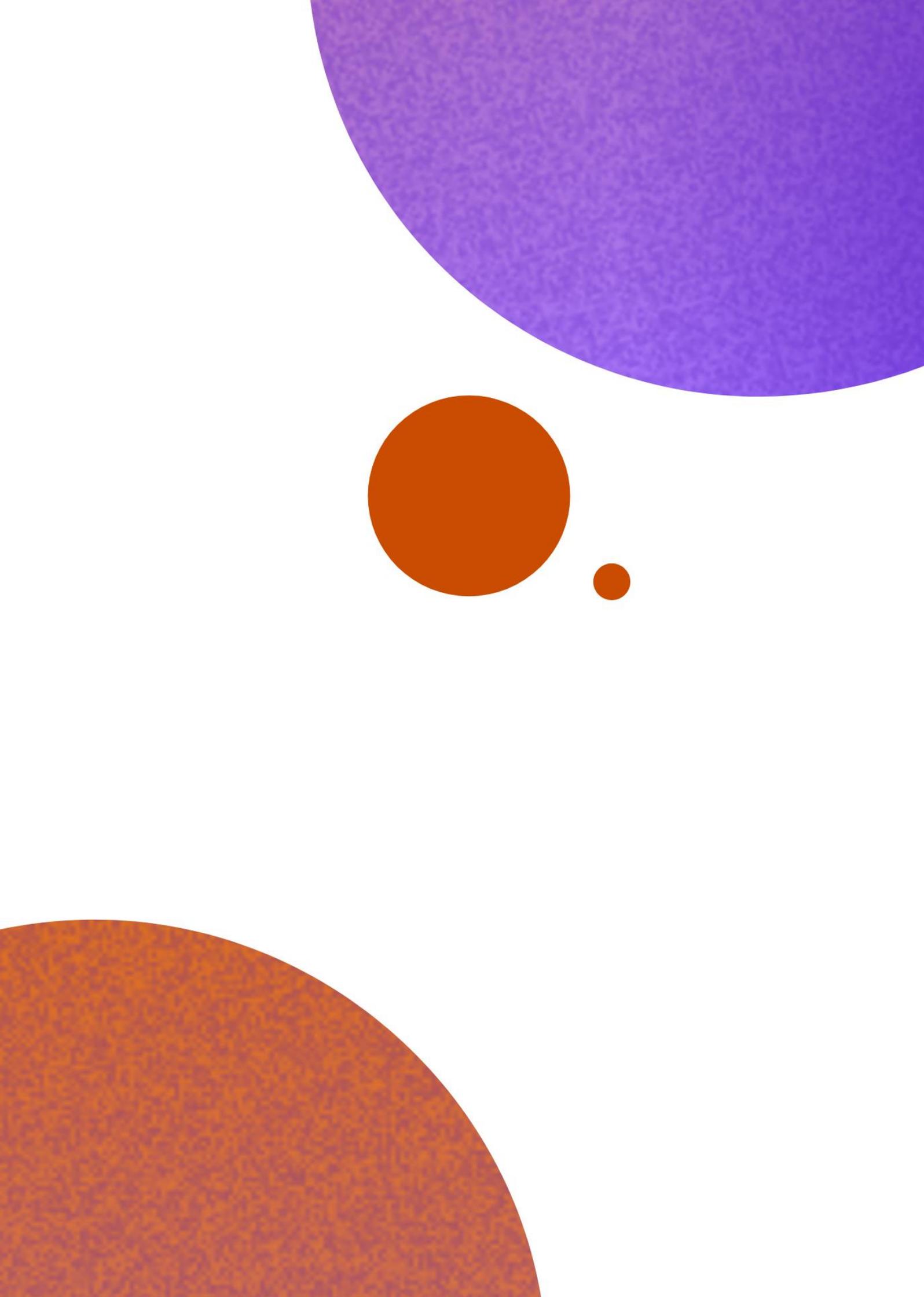
Table 1: Overview – Accessibility in study programs subdivided in areas of knowledge

	Austria	Cyprus	Czechia	Spain
Education	<p>3 study programs:</p> <p>BEd Secondary Education Teaching Degree in Fine Arts</p> <p>MA Secondary Education Teaching Descriptive Geometry</p> <p>MEd Primary Education with an extension to the 10-15 age group in Inclusive Education</p>	<p>5 study programs:</p> <p>BEd Primary Education</p> <p>BA Pre-Primary Education</p> <p>BSc Physical Education and Sports Science</p> <p>MA Special and Inclusive Education</p> <p>MA Technologies of Learning and Communication and STEAM</p>	<p>6 courses:</p> <p>BA Student with Special Educational Needs</p> <p>BA Inclusive Special Needs Education</p> <p>BA Inclusive Education</p> <p>MA Inclusive Pedagogy</p> <p>BA Integrative and Inclusive Pedagogy</p> <p>MA English Language Instruction in Heterogeneous Classes</p>	<p>3 study programs:</p> <p>BA Education Science</p> <p>BA Early Childhood Education</p> <p>MA Teaching in Secondary Schools, Vocational Training and Language Centres</p>
Arts and Humanities	<p>3 study programs:</p> <p>BA Transcultural Communication,</p> <p>MA General Linguistics (Grammar Theory and Cognitive Linguistics)</p> <p>MA Translation and Interpreting</p>	<p>6 study programs:</p> <p>BA Multimedia and Graphic Arts</p> <p>BSc Media Production</p> <p>MSc Interaction Design</p> <p>BSc Web Design and Development</p> <p>BA Interior Design</p> <p>BA English Language and Literature</p>	<p>2 courses:</p> <p>BA DigCompEdu: How to develop the digital competences of teachers and students</p> <p>MA Museum Inclusive Pedagogy</p>	<p>2 study programs:</p> <p>BA Fine Arts</p> <p>MA Social Communication</p>
Social Sciences, Journalism and Information	<p>3 study programs:</p> <p>BA Non-Profit, Social and Health Management</p> <p>BA Disability and Diversity Studies</p> <p>BA Social Work</p>	<p>2 study programs:</p> <p>BA Journalism</p> <p>BA Communication and Internet Studies</p>	<p>4 courses:</p> <p>BA Doing social research in older and other difficult-to-access populations</p> <p>BA Inclusive Aspects of Special and Social Education</p> <p>MA Social Inclusion and development of management skills of a Social educator</p> <p>MA Universal design - inclusion of alterity – accessibility</p>	<p>3 study programs:</p> <p>MA Gender Studies and Management of Equality Policies</p> <p>BA Social Work</p> <p>MA Health, Integration and Disability</p>

	Austria	Cyprus	Czechia	Spain
Business, Administration and Law	3 study programs: MA Business Informatics Mag.iur. Law LL.B. Business Law	1 study program: BBA Business Administration, Entrepreneurship and Innovation	1 course: MA Legal Clinic of Vulnerable Groups Rights	3 study programs: BA Law MA Business Administration and Law Consultancy MA Digital Communication
Information and Communication Technologies	3 study programs: BA Business Informatics MSc Media Informatics and Visual Computing MA Computer Science	1 study program: BSc Computer Information Systems	4 courses: BA Implementation of User Interfaces MA Inclusive Design BA Humanitarian Computer Applications BA Human Computer Interaction 1 study program: BA Information Services Design	3 study programs: BA Computer Engineering MA Software Development MA Web Engineering
Engineering, Manufacturing and Construction	3 study programs: MSc Architecture MSc Civil Engineering BSc Railroad Technology and Mobility	2 study programs: MSc Artificial Intelligence MArch Architecture ²	2 courses: BA Accessible Architecture MA Barrier-free Buildings	3 study programs: BA Architecture BA Civil Engineering MA Artificial Intelligence
Health and Welfare	3 study programs: MSc Health Assisting Engineering Dr. med. Human Medicine BSc Sports Science	3 study programs: BDS Dental Surgery BSc Occupational Therapy BSc Speech and Language Therapy	1 course: MA Didactics of Adapted Physical Education	3 study programs: BA Medicine BA Nursing MA Disability and Dependency
Services³		1 study program: BBA Hospitality Management		

² Integrated Master in Architecture, 5 years

³ Services domain was pertinent only to Cyprus



Task 1.3: Analysis of Accessibility and Universal Design

This task involves a thorough examination of the collected sample of HE curricula to assess whether and how the Accessibility and Universal Design approach was incorporated. Furthermore, this analysis explored the extent of integration, such as whether it was a mandatory course, part of various courses, an optional course, or perhaps presented as a small seminar with limited impact.

Methodology of this task

The analysis of the curricula collected aimed at responding to the second research question of the project proposal:

Research Question 2: How is the Accessibility and Universal Design approach included in the sample of HE curricula in the selected domains, in terms of:

- Construction and conceptualisation: disability construction, population of reference/beneficiaries, requirement, etc. Form and type of reference: mandatory course, mainstreamed in different courses, elective course, small seminars etc.
- Curricula aim: awareness, practical skills development, professional development, etc.

This research question was addressed by the development of a thematic coding scheme under the following rationale:

Main Category: Main thematic category that involved the main aspects identified in literature regarding accessibility. These are:

- **accessibility sectors**, referring to which sector of a country system (e.g. Culture and Leisure, Education Employment, etc.) is accessibility mentioned to be applied
- **area/type**, referring to which types(s) of accessibility areas (e.g. web accessibility, communication, easy language etc, within sectors accessibility is mentioned/applied)
- **conceptual construction**, referring to how accessibility is perceived in terms of the theoretical models of disability and diversity
- **population**, referring to possible groups of users/persons (e.g. specific impairment references)
- **requirement**
 - in terms of political, legal, social aspect, referring to whether accessibility is presented under legal or other policy and practice requirements and how it is presented (e.g. welfare provision, EU directive, UNCRPD-Human rights, etc.)
 - in terms of the implementation aspect, referring to whether accessibility is considered in relation to technical guidelines and standards, universal design, or universal design for learning

- **emphasis** and way, it is represented in the curriculum, referring to where and when accessibility is mentioned (e.g. in the curricula objectives and learning outcomes, in literature and bibliography, in the description of the content, etc.)
- **accessibility as part of projects or other activities** (e.g. specific national or EU funded project, structural funds, etc.)

Conceptual coding: Conceptual codes were then analysed under each category to capture the various aspects of each broader category.

Additional themes: Additional concepts that may emerge during the implementation of the scheme that correspond to any of the existing categories. If a new category emerges, it is added to the scheme.

The thematic content analysis of the selected curricula and corresponding syllabi is organised around the seven areas of knowledge as these have been defined as domains in Task 1.1, and include:

1. Education
2. Arts and Humanities
3. Social science, Journalism and Information
4. Business, Administration and Law
5. Information and Communication Technologies
6. Engineering, Manufacturing and Construction
7. Health and Welfare
8. Services

At the implementation of the thematic analysis, (just) Cyprus added “Services” as an eighth area of knowledge, as the country’s economic system largely depends on services, and it seems that many curricula refer to services, mainly hospitality management and tourism.

The following table provides an overview of how the coding system was applied within the project across areas, based on the existing literature on accessibility

Table 2: Categories and subcategories for qualitative content analysis

Categories	accessibility sectors	accessibility area/type	accessibility construction	accessibility population	accessibility as a requirement	accessibility as curricula emphasis	accessibility as part of projects or other activities
subcategories	culture and leisure education employment healthcare/medicine services tourism transport justice and law public administration enterprises/companies (new code) web/internet (new code)	built environment natural environment web accessibility other ICT - digital accessibility assistive products technologies communication easy to read personal autonomy human-computer interaction learning adaptation media accessibility physical sensorial usability user-centered design	medical (deficit) social (barriers) charity (pity) human rights (participation) consumer/client/economic target group	older people disability (impairment specific) visual hearing motor cognitive mental health communication autism spectrum cultural background gender diversity	social (civil society connections, welfare provisions) political (democratic) legal (EU, national, directives) human right (UNCPRD) technical (in any sector - guidelines, standards, techniques, tools) universal design/design for all (guidelines, standards, techniques, tools) universal design for learning (guidelines, standards, techniques, tools)	curriculum elective subject competences (for implementing accessibility) learning activities learning objectives course title learning outcomes course content description course resources course related research awareness (inclusive, equity) research and development about accessibility research with people with disabilities (co-design/co-production/co-research)	EU funded projects national structural funds - operational other seminar/workshop

Openness was maintained to new “invivo” codes that emerged from the textual material, where these were not already covered. The result was the following new “invivo” codes: *diversity within the category accessibility population*, as well as the new sub-category *curriculum within the category accessibility curriculum emphasis*, which was then also included in the overall project. In addition, the subcategories enterprises/companies and web/internet were defined only for Austria within the category accessibility sector.

Difficulties and challenges of this task

The level of detail of the curricula as well as the seminars varied quite a lot: sometimes very short to a mere listing of topics or keywords without descriptive text, but sometimes very extensive and detailed. Coding across different disciplines proved to be difficult in some cases, as the individual curricula were so subject-specific that coding was a challenge for encoders from outside the subject, but the fact that encoders came from different disciplines made it practicable. Also, intercoder reliability was ensured by coding as a team. In some cases, there was no clear separation between curriculum and lectures, i.e., in the curriculum there was not only a list of lectures by name, but already more detailed descriptions of the lectures. One challenge was also that some study programs are hybrid, i.e. they could be assigned to two domains in terms of content, but one domain was selected in the assignment.

Findings and Results per Domains of Education

In the following section, findings under each analysis category (as these are defined in Methodology above) per domain are described transnationally and aggregated across the countries Austria, Cyprus, Czech Republic and Spain.⁴ Before doing so it is important to provide a summary (Table 3) on where accessibility is included in the various curricula presented. This information was useful to examine whether accessibility is included as a separate compulsory or elective course, and in which part of the curriculum is considered important (e.g. learning objectives, course titles, course descriptions etc). Nevertheless, in the analysis per domain in the following paragraphs, accessibility emphasis is more explicitly presented per domain with justifying extracts and examples.

⁴ For detail for the national level finding, please get in touch with the respective national partner.

Table 3: Accessibility in different areas per domain of knowledge (category: accessibility curricula emphasis)

Domain Area of Curriculum	Education	Arts & Humanities	Social Sciences, Journalism and Information	Business, administration and law	ICT	Engineering Manufacturing and Construction	Health and Welfare	Services ⁵
Curriculum	Inclusive pedagogy.	Focus on (linguistic) inclusion and media accessibility.	Inclusion of Diversity and Disability Studies.	Respect for fundamental and equal rights, non-discrimination, and universal accessibility.	Emphasis on accessibility, usability and human-centred design.	Topics related to technical, social and economic aspects.	Emphasis on health assistive engineering, assistive technologies and disability-related ethics.	Focus on accessibility issues in tourism.
Course titles	Courses related to inclusion and special needs.	Courses related to Universal Design and Accessibility.			Courses related to Information Services and Design.	Courses related to accessibility, universal design, user-orientated construction.		A course including the discussion of accessibility issues in tourism.
Elective courses		Courses related to Universal Design, HCI, User Experience Design and Universal Design.		Courses related to gender and diversity issues.			Elective modules for specialisation.	
Competences for implementing accessibility	Reflection skills, design of interactive processes for diversity and inclusion, didactic skills related to media and assistive technologies.		Management skills, user-centred design, human-computer interaction.		Focus on research and development in accessibility.	Emphasis on research and development in accessibility.	Focus on assistive technologies, accessible communication and disability ethics.	
Learning objectives	To comply with guidelines and standards for inclusive education.	Addressing fundamental rights, equal opportunities, universal accessibility and values related to peace and democracy.	Focus on user-centred design and human-computer interaction. Course title: Gender and diversity courses.	References to the Convention on the Rights of Persons with Disabilities.		References to social models.	Focus on human rights requirements	
Learning Outcomes	Understanding inclusion, special needs and diversity.	Promoting awareness of accessibility as a human rights requirement.	Emphasis on accessibility, often linked to the Convention on the Rights of Persons with Disabilities.		Emphasis on design thinking and user research with an accessibility focus.	Emphasis on topics related to diversity and gender competences.		

⁵ Services domain was pertinent only to Cyprus

Domain Area of Curriculum	Education	Arts & Humanities	Social Sciences, Journalism and Information	Business, administration and law	ICT	Engineering Manufacturing and Construction	Health and Welfare	Services ⁵
Description of course content	Relevant phrases are included, related to inclusion, special needs and diversity.							Course content related to accessibility in tourism.
Learning Activities		Creation of participatory and physically accessible museum experiences.			Focus on design thinking, user research, information services design, management, services and strategic design with an accessibility focus.	Carrying out research and analysing case studies.		
Awareness (inclusiveness, equity)	Promotion of awareness of diversity and inclusion.	Raising awareness regarding multiple disadvantaged groups.	Addressing issues of inequality, anti-discrimination and social justice.	Addressing gender and diversity issues.				
Research & development on accessibility	Focus on universal design for learning.				Emphasis on research and development.	Focus on research and development.		
Course resources		Relevant phrases are included, focusing on gender and diversity.		Relevant phrases are included, related to gender and diversity issues.				

Findings per domain are presented with examples in the following sections.

Domain: Education⁶

In general, findings showed that accessibility in the domain of Education focuses on making learning environments and materials inclusive for students with diverse abilities and needs, including visual impairments, physical disabilities and students from different cultural backgrounds. It emphasises the use of assistive technology, alternative communication methods and inclusive pedagogy, ensuring compliance with guidelines and standards for inclusive education. In the following, the analysis of the results per category of analysis are presented.

Category: Accessibility sectors

In the domain of Education, as expected, the main accessibility sector identified is education (meaning the education system). The focus in this sector is on inclusion, diversity and accessibility in education, particularly in the context of special needs education and inclusive learning environments. For example, the sector of education is largely mentioned in Educational Sciences such as the Education Science BA (University of Cadiz, Spain) [UCA23], Teacher Degree in Fine Arts BEd (Mozarteum Salzburg, Austria) [UMO23] and the MAs Educational Sciences: Special and Inclusive Education (European University Cyprus, Cyprus, Cyprus) [EUC23e], Technologies of Learning and Communication and STEAM (European University Cyprus, Cyprus) [EUC23g], Teaching in Secondary Schools, Vocational Training and Language Centres (Autonomous University of Barcelona, Spain) [AUB20], Primary School Teaching (University College of Teacher Education Lower Austria, Austria) [UCT23], Secondary School Teaching (Universität Wien, Austria) [UWI23a]

The use of special media and electronic/technical aids promotes independence and individuality in education. The sector of education in this context is prevalent in various curricula, including secondary education, vocational education, language centres, primary education and early childhood education. It often appears together with other codes related to accessibility and competence. The extracts below are an example of how the education sector is highlighted in the Education domain:

[Program curriculum:] “The program equips teachers with innovative teaching methods and skills, necessary for quality and effective teaching of students with special educational needs and/or disabilities. The program aims to train students regarding educational topics for children with disabilities and special educational needs, in the design of educational approaches that lead to differentiation in the context of inclusive education, as teachers of general and inclusive education, in educational research processes, as well as the development of pedagogical competence qualifications through pedagogy science courses and teaching

⁶ We use “Education” to refer to the domain/discipline and “education” to refer to the process of teaching and learning as well as the educational system.

methodology.” (Curriculum, Special and Inclusive Education MA, European University Cyprus, Cyprus) [EUC23e]

[The student] “will get acquainted with the diverse intellectual traditions in Inclusive and Multicultural Education, as well as with the more relevant aspects of these fields of study within the Early Childhood Education stage, familiarising themselves with fundamental bibliographic, audiovisual and informative resources”. (Learning objective within the syllabus Multicultural and Inclusive Education, Disability and Dependency MA, University of A Coruña, Spain) [UAC08]

“The module focuses on the development and learning support of young people with a physical or sensory disability at secondary level 1. The in-depth methodological and didactic competences are expanded through knowledge of the possible uses of specific media and (electronic) aids.” (Special questions of individual support areas I, Teacher Training Programme Primary Education - Inclusion PEA1015 MEd, University College of Teacher Education Lower Austria, Austria) [UCT23]

Category: Accessibility population

Data analysis in general shows that an "accessibility population" in the domain of Education, is not often identified as specific groups of users. It is rather identified as including students with disabilities and special educational needs, and sometimes connects to primarily visual impairment/blindness and physical/motor impairments, but also students from diverse cultural backgrounds and genders. In particular, Technologies of Learning and Communication and STEAM MA mentions that the student is trained to:

[Program curriculum:] “analyse and evaluate the use of technology as a means of social justice, promoting accessibility and equality in learning and communication for all individuals, regardless of ... gender ...” (Curriculum, Technologies of Learning and Communication and STEAM MA, European University Cyprus, Cyprus) [EUC23g]

Specifically, often the discussion of accessibility does not specify the type of disability, and diversity is also addressed, although less frequently. The importance of communication is also stressed, e.g., particularly in special and inclusive education, where the creation of alternative augmentative communication systems and technologies for children with complex communication needs is addressed, with students being trained in:

[Course content:] “Educational design and environment design for effective education of children with motor disabilities (e.g., accessibility, educational materials, alternative communication).” (Motor and Sensory Disabilities, Special and Inclusive Education MA, European University Cyprus, Cyprus) [EUC23e]

“Identifying and evaluating the main tutorial action measures for students with special needs for educational support” (Curriculum, Education Sciences BA, University of Cadiz, Spain) [UCA19]

Also, references to accessibility often refer to individuals without specifying types of disability or are linked to gender. Terms such as “inclusive education” or “inclusive schooling” are often used without specifying a particular disability, but there are instances of references to specific disabilities, particularly in relation to learning disabilities. In the extract below a blend of this approach is presented:

[Course content:] “... educational good is ensured for all students without exception, including students with disabilities and/or special educational needs, as well as students who are in a disadvantaged position and come from vulnerable social groups” (Teaching Methodology in a School for All, Special and Inclusive education MA, European University Cyprus, Cyprus) [EUC23e]

“Students consider the active organisation of inclusion as a task of schools as learning organisations and heterogeneity (including with regard to disabilities, learning and behavioural disorders, special talents, gender aspects, migration background, regional conditions, linguistic education, social, cultural and religious diversity, media cultures, socio-economic status) and inequality as framework conditions for educational careers and educational transitions.” (Design of Inclusive Educational Processes, Teacher Training MA, Universität Wien, Austria) [UWI23a].

[Course objectives:] "The aim of this course is to develop student teachers' professional competence in the area of special educational needs. Attention will be paid mainly to learners with specific learning difficulties (SpLD) and to exceptionally gifted learners." (English Language Instruction in Heterogeneous Classes, University of Pardubice, Czechia) [UPCE23]

Category: Accessibility area/type

In the domain of Education, learning adaptation is one of the most frequently assessed Accessibility areas/types, as suggested in the Accessibility sectors category. Again, it mostly refers to the context of special needs, as exemplified by the following extracts:

[Specific competences:] “Interpret the student’s different educational needs in order to propose the most appropriate educational actions; Propose the adequate educational support measures to cater for students with educational needs” (Curriculum, Teaching in Secondary Schools, Vocational Training and Language Centres MA, Autonomous University of Barcelona, Spain) [AUB20].

[Course content] “Contemporary approaches to teaching and learning e.g. differentiation and individualization of teaching, collaborative learning, interdisciplinary approach, investigation, teaching for the cultivation of metacognition, critical thinking, creative thinking.” (Teaching Theory and Methodology, Primary Education BA, University of Cyprus, Cyprus) [UCY23]

There is a focus on ICT - digital accessibility and the built environment in the accessibility areas, with physical and sensory accessibility being emphasised.

[Course content:] “Familiarisation and practice with assistive and mainstream technology software and applications for persons with disabilities” (Technology and Disability, Technologies of Learning and Education and STEAM MA, European University Cyprus, Cyprus) [EUC23g]

“Students [...] understand the designed environment and public spaces as conditions for living together, also against the background of inclusion and diversity.” (Art Education with Originals, Teacher Training Programme in Visual Arts Education BA, Universität Mozarteum, Austria) [UMO 23]

Category: Accessibility construction

Under this category, in the domain of Education, findings indicated an emphasis on understanding accessibility in relation to the social model of disability, i.e. disability is a socially constructed concept that addresses disadvantage, discrimination and the need for inclusion and diversity, as well as socialisation as citizens in a democratic society. The role of assistive technology in different educational programmes is highlighted, with some programmes referring to it in the context of a medical model, while others see it as a means of providing differentiation and overcoming barriers, which is more in line with a social construction perspective.

“Graduates can make productive use of the diversity of learners for their development, e.g. with regard to migration background, language education (multilingualism, German as a language of education, German as a second language), gender aspects, disability, special needs, political, cultural and religious issues, socio-economic status, educational background, media socialisation and expectations and demands on the education system. They have the ability to constructively and critically assess the effects of technologies and digital media on people and society [...]. Graduates are aware of the danger of stereotypical attributions and can deal with them in a reflective manner. Their knowledge of social and cultural contexts enables them to recognise and take into account the possibilities and limits of their actions.” (Curriculum, Secondary School Teacher Training Programme MA, Universität Wien, Austria) [UWI23a]

“Graduates...

- have in-depth knowledge in the context of educational processes for young people with hearing impairments/deafness, visual impairments/blindness and/or motor impairments
- have in-depth knowledge of auditory processing and perception disorders, hearing impairments, deafness; cerebral visual disorders, visual impairments, blindness and motor impairments
- have basic knowledge of the diagnosis of sensory impairments and can utilise diagnostic findings for support measures in an inclusive context (e.g. for communication situations)

- are familiar with current technical support systems and their possible applications for young people with sensory impairments (e.g. electro-acoustic hearing systems, keyboards for Braille)
- have basic knowledge of empirically based methods for educational support
- can design lessons (participatory) according to the respective needs and organise joint learning” (Special Questions of Individual Support Areas I, Teacher Training Primary Level - Inclusion PEA1015 MEd, University College of Teacher Education Lower Austria, Austria) [UCT 23]

[Resources:] “Cook, A.M. and Polgar, J.M. (2015). Assistive Technologies: Principles and Practice. Missouri: Mosby Elsevier” (Technology and Disability, Special and Inclusive Education MA, European University Cyprus, Cyprus) [EUC23e]

Furthermore, a dominant construction of accessibility/disability in the domain of Education is based on human rights and participation. A common competence in various educational programmes focuses on the design and development of learning spaces with attention to equity, emotional education, equal rights and opportunities, civic education and respect for human rights, as indicated by the following examples:

“Design and develop learning spaces with special attention to equity, emotional education and education in values, equal rights and opportunities among women and men, citizen training and respect for human rights which facilitate life in society, decision-making and the construction of a sustainable future”. (Curriculum, Teaching in Secondary Schools, Vocational Training and Language Centres MA, Autonomous University of Barcelona, Spain) [AUB20]

[Learning objectives:] “The aim of the course is to introduce the students with the contemporary trends of technology as a human right for the access of the people with disability to the natural environment, learning and communication. At the same time, an aim of the course is [the students] to familiarise themselves with assistive technology tools for persons with disabilities and their use as a means of differentiation in teaching and learning for the education of all children in an inclusive classroom. The aim also is the utilisation of technology in the pedagogical process in the context of inclusive school in a digital age and the opportunities to bridge the digital divide for persons with disabilities.” (Technology and Disability, Special and Inclusive Education MA, European University Cyprus, Cyprus) [EUC23e]

Category: Accessibility as a requirement: policy, legal and implementation

Based on the findings, accessibility as a requirement in the domain of Education seems to imply the legal and moral need and responsibility for inclusion and diversity. The following extracts indicate how accessibility is considered under the legal aspect:

[Learning outcomes:] “[students] Identify and analyse policies and practices at the local and international level that affect the effective implementation of technology in the education of children with disabilities.” (Technology and Disability, Technologies

of Learning and Communication and STEAM MA, European University Cyprus, Cyprus) [EUC23g]

[Course content description:] “Compliance with human rights for a social justice framework in Education.” (Inclusive and Multicultural Education syllabus, Disability and Dependency MA, University of A Coruña, Spain) [UAC08]

[Course objectives:] "Students will learn about, among other things, the current education system and related legislative and curriculum documents." (Inclusive Special Needs Education, University of Ostrava, Czechia) [OSU23]

[Course content:] "Legislative framework, possibilities and limitations of special education inclusion. Charter of Fundamental Rights of EU Citizens, Convention on the Rights of the Child, European Convention on Human Rights, White Paper, Charter for the 3rd Millennium, Standard Rules for Equalisation of Opportunities for Persons with Disabilities, National Plan for Support and Integration of Citizens with Disabilities, etc." (Integrative and Inclusive Pedagogy, Jan Evangelista Purkyně University in Ústí nad Labem, Czechia) [UJEP23]

In the domain of Education accessibility as a requirement in terms of the implementation and technical aspect, it is often linked to guidelines and design frameworks. In the extract below, design as a matter of accessibility is discussed, and a general human-computer interaction (HCI framework) aspect for all users is mentioned:

[Course content description:] “The design of Interaction for multiple form factors in interactive applications is explored focussing on (...) Accessibility ... This practical experience will be used to draw out principles of good design, accessibility and Human Computer Interaction.” (Web Technologies, Web Design and Development BSc, UCLan Cyprus, Cyprus) [UCLanCyprus23c]

In the context of study programmes such as Special and Inclusive Education or Technologies of Learning and Communication and STEAM, the concepts of Universal Design/Design for All and Universal Design for Learning are discussed, along with assistive technology, to address these accessibility issues. Universal Design for Learning includes guidelines, standards, techniques and tools to promote inclusion and diversity, and sometimes connected to differentiated instruction:

[Learning outcomes:] “To explain the theoretical background and to suggest practices of utilising contemporary trends in teaching such as ... the differentiation of teaching in classrooms with students with various skills etc.” (Teaching Theory and Methodology, Primary Education BA, Cyprus University, Cyprus) [UCY23]

[Transversal competence:] “Universal design and accessibility.” (Curriculum, Education Sciences BA, University of Cadiz, Spain) [UCA19]

Category: Accessibility curricula emphasis

The integration of inclusive pedagogy into teacher education is an important aspect of the education curriculum. In the domain of Education, accessibility references seem to be included in competences, outlined either as learning outcomes or learning objectives in the various relevant curricula.

For example, the curriculum of the Master in Primary Education with a focus on inclusion for pupils between the age of 10 and 15 in Austria [UCT23]. This curriculum has a strong focus on issues such as special needs, diversity and inclusion. It aims to equip educators with competences such as reflective skills, the ability to design interactive processes that take into account diversity and inclusion, and effective strategies for dealing with diversity, particularly in the context of students' personal development.

In addition, some teacher education programmes emphasise the development of didactic skills related to the use of media and assistive technologies to enhance the learning experience. For example:

[Learning objectives and competences:] “The course focuses on the design and evaluation of educational digital environments, in light of contemporary learning theories and learner-centred, person-centred, and universal design.” (Design of Learning Technologies, Technologies of Learning and Communication and STEAM MA, European University Cyprus, Cyprus) [EUC23g]

It is also worth noting that in the Education domain, even if accessibility is not explicitly mentioned, relevant phrases referring to disability and accessibility relevant concepts, such as inclusion, special needs and diversity, are mentioned in various parts of the curriculum, including course titles, course content descriptions, learning outcomes and learning activities. This is certainly the case of Spanish curricula, mostly in the Teaching in Secondary Schools, Vocational Training and Language Centres MA, but also in the Education Sciences and Early Childhood Education BAs:

“Learning objectives considering diversity among students.” (Curriculum, Teaching in Secondary Schools, Vocational Training and Language Centres MA, Autonomous University of Barcelona, Spain) [AUB20]

“The primary level teacher training programme with an extension to the age range 10 to 15 in inclusive education requires an increased appreciation and recognition of diversity in education and upbringing as an explicit and implicit qualification feature. Teachers who are qualified in their areas of responsibility fulfil the requirements for teachers in inclusive schools at primary level, lower secondary level and in special school (upper) levels, particularly in dealing with heterogeneity, constructively handling specific questions and challenges in individual areas of support and being able to work in a team with other teachers and/or members of other professions. In the context of inclusion-oriented analysis, planning, design and leadership skills, they are able to critically reflect on issues of educational and empowerment equity and combine empirical knowledge and academic reflection on perspectives of inclusive

education and special education.” (Curriculum, Primary Education “Inclusion PEA1015 MEd, University College of Teacher Education Lower Austria”)[UCT 23]

In addition, accessibility course content descriptions and learning objectives and outcomes focus on Universal Design for Learning, which includes guidelines, standards, techniques and tools. This content is described and included in the mandatory curricula of educational programmes.

“Theme: Didactic strategies in terms of diversity and inclusive education at the Early Childhood Education Stage

Subthemes:

Addressing diversity in the classroom, avoiding the “tourism curriculum

Universal design of flexible learning environments.” (Curriculum, Primary Education and Early Childhood Education MA, Spain) [AUB20]

Domain: Arts and Humanities

Overall, accessibility in the domain of Arts and Humanities extends to cultural and educational contexts, with a particular focus on sensory accessibility. This includes features such as audio description and subtitling to make arts and culture accessible to a wider audience, especially those with sensory and intellectual disabilities. In the following, the analysis of the results per category of analysis is presented.

Category: Accessibility sectors

In this domain, accessibility covers the sectors of culture, leisure and education. For example, the culture and leisure sector is covered extensively in the curriculum of the Audiovisual Translation MA [AUB21], with a particular focus on audio description and subtitling. This sector is associated with sensory accessibility, as indicated in the extract below:

“The main objective of the module is to get the students acquainted with the basic media accessibility modalities: audio description and subtitles for the Deaf and hard of hearing. The main characteristics of each modality and different techniques and professional standards are presented.” (Curriculum, Audiovisual Translation MA, Autonomous University of Barcelona, Spain) [AUB21]

Cultural and leisure accessibility in this context refers to the right of individuals to access cultural experiences, including film, television, theatre, opera and museums. The accessible services sector is also targeted, with a particular focus in the Interaction Design MSc:

[Program curriculum:] “e-Accessibility, which targets the removal of the barriers encountered when trying to access and use digital media products, services and

applications” (Curriculum, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a]

The sector of services primarily focusing on web and digital accessibility as well as accessibility of products and services is also highlighted in curricula in the domain of Arts & Humanities. Some examples are the curricula of the Multimedia & Graphic Arts BA and specifically the course Design for All (Multimedia & Graphic Arts BA, Cyprus University of Technology, Cyprus) [CUT23c] and the Web Design syllabus within the Fine Arts BA curriculum, Complutense University of Madrid [CUM11]. Another example is the Interaction Design MSc (Cyprus University of Technology, Cyprus) [CUT23a], which underlines the importance of the EU's Digital Agenda in removing barriers to the use of services and emphasises the collaborative aspect of delivering accessible products and services. Public administration is also mentioned, discussing EU's Digital Agenda and its role in areas such as accessibility and e-government:

[Program curriculum:] “EU Digital Agenda - This course⁷ differentiates itself from other Interaction Design and HCI programs by addressing worldwide and European Union’s priorities as highlighted by the EU’s Digital Agenda. These are:

- e-Inclusion, as reflected by the European Commission’s view on the role of eGovernment, eHealth and eInclusion domains in sustainable human development
- e-Accessibility, which targets the removal of the barriers encountered when trying to access and use digital media products, services and applications”

(Curriculum, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a]

In addition, Interior Design BA includes the concept of designing accessible restaurants:

[Course content description]: “The subject deals with Interior Design problems within a restaurant environment. Through the analysis of: the functionality of space; layout; spatial perception; accessibility issues; as well as functional workings of both the front and back of house students will acquire the knowledge needed for a fully working design proposal.” (Interior Design Studio 4, Interior Design BA, Frederick University, Cyprus) [FRE23a].

Category: Accessibility population

The "accessibility population" in the domain of Arts and Humanities, includes people with disabilities in general, but with a particular focus on people with sensory impairments, specifically in the Audiovisual Translation MA curriculum [AUB21], or certain intellectual disabilities. For example:

⁷ Meaning actually “program”

“Public TV stations will increasingly be obliged to offer a larger percentage of accessible content via subtitling for the deaf and hard of hearing and audio description. And even more theatres, opera houses and museums offer audio description and audio guides to allow users with sight loss to enjoy their works and services.” (Curriculum, Audiovisual Translation MA, Autonomous University of Barcelona, Spain) [AUB21]

[Learning outcomes:] “Identify the needs of different groups that are often not taken into account in the design process, for example, people with visual impairment, cognitive problems, motor problems, the elderly.” (Design for All, Multimedia & Graphic Design BA, Cyprus University of Technology, Cyprus) [CUT23c]

As indicated in the example provided above, the accessibility population also includes older people and the ageing society in general.

Category: Accessibility area/type

As probably expected, in the Arts & Humanities Domain, accessibility also focuses on the built environment, especially when it comes to museums and cultural heritage sights, with a focus on physical and sensory accessibility. For example, the Museum Inclusive Pedagogy course of Masaryk University, Czechia explicitly addresses the physical and sensory accessibility of museums, emphasising principles of social inclusion and the concept of the museum as participatory and socially purposeful, as shown in the example below:

[Course objectives:] "The aim of the course is to acquaint students with the issue of physical and sensory accessibility of museums." (Museum Inclusive Pedagogy MA, Masaryk University, Czechia) [MUNI23b]

In addition, the types of accessibility in Arts and Humanities identified in the analysis include interfaces for disabled and elderly people, assistive devices, communication, and sign language. Many of the entries in this category relate to digital and web accessibility. For example:

Several programmes across countries, such as Interaction Design (Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a], Media Production (Media Production BSc, University of Central Lancashire Cyprus, Cyprus) [UCLanCyprus23b], Multimedia and Graphic Arts (Multimedia and Graphic Arts BA, Cyprus University of Technology, Cyprus) [CUT23c] or Communication and Internet Studies (Communication and Internet Studies BA, Cyprus University of Technology, Cyprus) [CUT23b] emphasise the importance of digital accessibility, web accessibility and usability. As stated above, the Audiovisual Translation MA (Audiovisual Translation MA, Autonomous University of Barcelona, Spain) [AUB21] emphasises the importance of media accessibility and communication.

Specific examples include a course about Universal Design:

[Pedagogical script:] “The main aims of this session will be to demonstrate how integrating accessibility best practices within an organisation can lead to a reality

where accessibility is considered as a core value in the design of products/services. Furthermore, future insights into what a web that is inclusive for all means, is discussed.” (Universal Design, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a]

Category: Accessibility construction

Similarly, to the domain of Education, in the domain of Arts & Humanities, accessibility/disability is seen as a social construction and focuses on social barriers. For example, the Interaction Design study programme of the Cyprus University of Technology addresses the specific needs of older people and people with disabilities when using ICT and assistive technology. An emphasis is placed on “e-inclusion” in line with the European Commission's perspective on the role of e-government, e-health and e-inclusion in sustainable human development” (Curriculum, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a].

Accessibility/disability is also constructed in economic terms and the target group is seen as consumers, clients or audiences, emphasising the importance of considering different stakeholders in the field and explicitly mentioning marketing issues, or as a target group for the concept of human-centred design and user experience. For example:

“Students will be able to produce [...] both intralingual and interlingual subtitles, targeted at different types of users (including deaf and hard of hearing).” (Curriculum, Audiovisual Translation MA, Autonomous University of Barcelona, Spain) [AUB21]

[Program curriculum:] “Knowledge of stakeholders (marketing, software developers, designers, engineers)” (Curriculum, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a]

There is also a focus on constructing accessibility in terms of human rights and social aspects, particularly in relation to the opening up of museum and cultural environments, social inclusion, participatory museums and socially purposeful museums. The extracts below are examples of this kind of data:

[Course objectives:] “The aim of the course is to acquaint students with the issue of social inclusion in museums and the concept of the museum as participatory and socially purposeful.” (Museum Inclusive Pedagogy MA, Masaryk University, Czechia) [MUNI23b]

[Course syllabus:] “1. Introduction – physical and sensory accessibility of museums, museums and social inclusion, participatory museum, socially purposeful museum.” (Museum Inclusive Pedagogy MA, Masaryk University, Czechia) [MUNI23b]

Category: Accessibility as a requirement

The need to provide professional support for different target groups and to address multidimensional disadvantages is emphasised. For example:

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[Program curriculum:] “Knowledge of stakeholders (marketing, software developers, designers, engineers);” (Universal Design, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a]

In terms of technical requirements focus on aspects such as user experience principles, WCAG 2.0 guidelines and techniques for designing accessible human-computer interfaces, as shown in the example below:

[Course content description:] “Mapping the WCAG 2.0 Principles, Guidelines, and Success Criteria to the Accessible UX Principles and Guidelines.” (Universal Design, Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a]

Also, in terms of standards regarding media accessibility, in the Audiovisual Translation MA at the Autonomous University in Barcelona, national standards on audio description and subtitling for the deaf and hard of hearing are included in the bibliography of the dedicated module:

“AENOR (2012): *Subtitulado para personas sordas y personas con discapacidad auditiva* [Subtitling for the deaf and hard of hearing]. Standard. UNE 153010:2012, Madrid: Asociación Española de Normalización y Certificación (AENOR).” (Curriculum, Audiovisual Translation MA, Autonomous University of Barcelona, Spain) [AUB21]

Social requirements are also covered, with some programs looking at linguistics and diversity in society. For example in English Language and Literature BA of the University of Central Lancashire Cyprus, the following is mentioned:

[Course content description:] “This module covers a range of key themes associated with socially-minded areas of linguistics, including sociolinguistics. Students are introduced to the types and significance of variation in society, and explore regional variation, bilingualism and multilingualism, sign language and the deaf community, diglossia and code-switching, pidgins and creoles, language and gender, and variation due to age, education, occupation, social class and register.” (Language Variation in Society course, English Language and Literature BA, University of Central Lancashire Cyprus, Cyprus) [UCLanCyprus23a]

In addition, accessibility is considered a human rights requirement in the Spanish Fine Arts BA and the Social Communication MA curricula, where final projects must consider fundamental rights, equality, universal accessibility, and values related to peace and democracy; and more specifically in the case of the Audiovisual Translation MA:

“The end-of-degree project must take into consideration the fundamental and equality rights between women and men, equal opportunity principles and universal accessibility for people with disabilities, and values aligned with the culture of peace and democracy.” (Curriculum, Fine Arts BA, Complutense University of Madrid, Spain) [CUM11]

“There is a social need and demand for accessible products that foster an equal access to culture, which is a universal right.” (Curriculum, Audiovisual Translation MA, Autonomous University of Barcelona, Spain) [AUB21]

Category: Accessibility curricula emphasis

In the Arts and Humanities, accessibility in curricula emphasis seems to relate to the discipline and whether this is considered part of the competences of the future graduates, so included in learning outcomes, or part of the general knowledge, that is probably included solely in short reference in content.

For example, in curricula relevant to language and communication, there is a strong focus on learning objectives related to language, with sign language treated as a foreign language for the linguistic inclusion of people, including those with hearing impairments:

“The Bachelor’s degree in Transcultural Communication offers a scientifically founded introduction to all areas of transcultural communication for the following languages: Arabic, Bosnian/Croatian/Serbian, English, French, German, Hungarian, Italian, Austrian Sign Language, Russian, Slovenian, Spanish, Turkish.” (Curriculum, Transcultural Communication BA, Universität Graz, Austria) [UGR23b]

There are also very specific curricula in Arts & Humanities where the relevance to accessibility is demonstrated in titles of specific courses such as Universal Design (Interaction Design MSc, Cyprus University of Technology, Cyprus) [CUT23a], User Experience Design (Media Production BSc, University of Central Lancashire Cyprus, Cyprus) [UCLanCyprus23b] and Design for All (Multimedia & Graphic Arts BA, Cyprus University of Technology) [CUT23c]. This is also the case in Spain, particularly in the Audio Description and Subtitling for the Deaf and Hard of Hearing module within the Audiovisual Translation MA (Autonomous University of Barcelona, Spain).

In addition, the focus on accessibility in the Arts and Humanities extends to learning activities and skills for implementing accessibility, such as creating participatory and physically accessible museum experiences and the production of media accessibility services such as audio description and subtitling for the deaf and hard of hearing. For example:

[Course learning outcomes:] "After completing the course, the student will be able to explain the concept of a participatory museum and the principles of physical and sensory accessibility of the museum." (Museum Inclusive Pedagogy MA, Masaryk University, Czechia) [MUNI23b]

[Specific competences:] “Manage audiovisual translation, media accessibility, multimedia, web and video game localisation projects; Apply the specific methodology, techniques, rules and standards to innovate professionally and in terms of research on Audiovisual Translation and Media Accessibility.” (Curriculum, Audiovisual Translation MA, Autonomous University of Barcelona) [AUB21]

Category: Accessibility as part of projects or other activities

There are only a few instances in the Audiovisual Translation curriculum that are directly linked to the research projects of the programme's lecturers. For example:

“HBB4ALL (Hybrid Broadcast Broadband for All) (ref. 621014) (Members: lecturers 1 and 5).

ACT (Accessible Culture and Training). Erasmus + Strategic Partnerships. 2015-1-ES01-KA2013-015734. (UAB). 2015-2018. (Members: lecturers 1 and 5).

Visuals Into Words (VIW). Projects "Europa Excelencia", Ministry of Economy and Competitiveness, ref. FFI2015-62522-ERC” (Curriculum, Audiovisual Translation MA, Autonomous University of Barcelona, Spain) [AUB21]

Domain: Social Sciences, Journalism and Information

In this domain, accessibility means ensuring that information and communication is accessible to a wide range of people, including people with disabilities, older people and people from different backgrounds. It focuses on universal design, assistive technologies and accessible web and documents. In the following, the analysis of the results per category of analysis are presented.

Category: Accessibility sectors

Different sectors of accessibility are covered in Social sciences, journalism and information. For example, in Social Sciences there is criticism of how accessibility is presented in the sector of health/medicine. More specifically, there is an emphasis on analysing the historical development of medicine, psychiatry and disability care, sometimes with a focus on challenging medicalisation and standardisation:

[Specific competence:] “Become aware of the basic sociological, psychological and medical principles involved in disability.” (Curriculum, Health, Integration and Disability MA, Complutense University of Madrid, Spain) [CUM12]

The sector of Justice and Law, was also identified in the domain of Social Sciences, Journalism and Information with references to anti-discrimination, equality, diversity management, disability management and gender mainstreaming for companies and public institutions are addressed. An example of this is the programme of the Health, Integration and Disability MA:

[Course content description:] “Ability to understand the main plans and programs on disability in our country and to understand and critically analyse an individual and/or community program.” (Curriculum, Health, Integration and Disability MA, Complutense University of Madrid, Spain) [CUM12]

“Contents are: Beneficiaries with disabilities, prohibitions of discrimination, Equal Opportunities for Disabled Persons Act, protection against dismissal, "Disabled Persons' Representative", employee protection, labour and social court proceedings, (...) Equal Treatment Act, prohibitions of discrimination on the basis of gender, general labour law, integration into the labour market, Residential Homes Act, Accommodation Act. The legislation is analysed at the state, federal and European law level as well as at the level of international conventions.” (Law in the Disability and Diversity Studies, Disability and Diversity Studies BA, FH Kärnten, Austria)- [FHK23].

Category: Accessibility population

In this domain, the accessibility population seems to be considered a diverse group of people, including older people, people with disabilities in general, and people with specific challenges such as hearing impairments, physical and intellectual disabilities, and mental health issues. For example:

“Analysis of the issues regarding ageing among people with disabilities. Awareness, capabilities, skills and expertise to intervene in the ageing and dependency process. Training on good practices in centres for older adults and people with disabilities.” (Curriculum, Health, Integration and Disability MA, Complutense University of Madrid, Spain) [CUM12]

It also includes people representing different dimensions of diversity such as social, gender, political, cultural and religious, this is particularly relevant in the Gender Studies and Management of Equality Policies MA curriculum:

[Course content] “Gender and disability. The discourse of *functional diversity*” (Curriculum, Gender Studies and Management of Equality Policies MA, University of La Laguna, Spain) [ULL12].

[Course content description:] “This module covers a range of key themes associated with socially-minded areas of linguistics, including sociolinguistics. Students are introduced to the types and significance of variation in society, and explore regional variation, bilingualism and multilingualism, sign language and the deaf community, diglossia and code-switching, pidgins and creoles, language and gender, and variation due to age, education, occupation, social class and register.” (Language Variation in Society, English Language and Literature BA, University of Central Lancashire Cyprus, Cyprus) [UCLanCyprus23a]

There are also programmes that include accessibility without specifying groups. For example, in journalism (Magazine Journalism and Production, Journalism BA, Frederick University, Cyprus) [FRE23b], there is focus on the readership of products and the use of titles and subtitles, without reference to specific populations. This concept also applies to the service code, where receiving information can be considered a service.

Category: Accessibility area/type

As Social Sciences is actually a quite broad domain, it seems to cover different areas of accessibility. The importance of universal design is emphasised in various contexts, including the built environment, assistive technologies, active assisted living, accessible internet, documents, and inclusive and assisted communication for participatory engagement. Some examples include the following:

[Learning outcomes:] “Identify and apply the design methodologies and adequate criteria when designing environments, products, services or technological elements to fit the different user abilities.” (Curriculum, Health, Integration and Disability MA, Complutense University of Madrid, Spain) [CUM12]

[Learning objectives:] “The aim of the course is to introduce students to the basic principles, models and methods of Human Computer Interaction (HCI) and enable them to design easy-to-use interactive computing systems and to evaluate the usability of interactive computing systems.” (Human-computer Interaction, Communication and Internet Studies BA, Cyprus University of Technology, Cyprus) [CUT23b]

These aspects are often addressed in programmes related to user-centred design, human-computer interaction and web accessibility, such as the Universal Design course in the Health, Integration and Disability MA [CUM12] and the User-centred design course in the Communication and Internet Studies BA [CUT23b]:

“Deepening in the principles and methods of user-centred design and excellent understanding of the importance of usability and user experience.” (User-centred design, Communication and Internet Studies BA, Cyprus University of Technology, Cyprus) [CUT23b]

The digital accessibility of ICT and assistive product technologies is also addressed, as in:

[Learning outcome:] “Facilitate the understanding of new technologies and assistive products to achieve an accessible environment.” (Curriculum, Health, Integration and Disability MA, Complutense University of Madrid, Spain) [CUM12]

Category: Accessibility construction

Accessibility is a multifaceted concept in this domain. It is viewed through different lenses, including the medical perspective, which focuses on medicalisation, pathologizing, disciplining and normalisation. An example is the following:

[Learning outcome:] “Obtain in-depth knowledge on the characteristics (aetiology, symptoms, course, prognosis...) of the most common health problems.” (Curriculum, Social Work BA, University of Huelva, Spain) [UHU09]

Some examples indicating accessibility in the framework of the social dimension of disability that considers socio-cultural development, diversity and intersectionality are presented here:

“Disability as a social phenomenon; The modern construction of disability in Western societies: Capitalist economy and disability; societies of normalisation and disability. Disability as a social phenomenon: the heteronomous construction of a disability social identity. Disability as a political movement: the emergence of activism. The transformation of the law on disability.” (Curriculum, Health, Integration and Disability MA, Complutense University of Madrid, Spain) [CUM12]

Also, an economic, client-centred perspective is constructed:

“Using practical examples, students reflect on the offers and needs of social services in the aforementioned [diversity and intersectionality] areas. Graduates are sensitised to different fields of activity in order to deal professionally with the diverse life situations and multidimensional disadvantages of their clients and to develop innovative solutions.” (Dimensions of Diversity and Intersectionality, Social Work BA, FH Salzburg, Austria) [FH23a]

Also, some study programmes also emphasise empowerment, self-directed diagnostic materials, peer counselling and self-advocacy. For example:

“The course focuses on ways of realising self-determination (self-advocacy, personal assistance, peer counselling, peer support). Empowerment-oriented and self-advocacy-controlled diagnostic manuals, support concepts, assistance plans, etc. (e.g. "Index for Inclusion", "Tools for personal future planning") are at the centre of attention in order to identify possible courses of action for inclusive professional practice. to make inclusive professional practice recognizable.” (Representation of Disabilities in Critical Discourse, Diversity and Disability Studies BA, FH Kärnten, Austria) [FHK 23]

In a legal construct, explicit reference is made to the Convention on the Rights of Persons with Disabilities and its application in law - e.g. the course Law in Disability and Diversity Studies: Adulthood (Diversity and Disability Studies BA, FH Kärnten, Austria) [FHK 23].

Accessibility is approached from a social perspective, focusing on inclusion and exclusion, barriers to dependency, the social construction of disability, current perspectives on disability in Western societies, disability advocacy and activism, changes in disability-related legislation, and proposals for a sociology of disability. These proposals take into account the influence of factors such as neoliberalism and globalisation. An example of this perspective can be found in the course content description of the History and social structure of disability course in the Spanish Health, Integration and Disability MA:

“Barriers or challenges to dependency: inaccessible physical environment, negative attitudes, lack of appropriate technology, services and social policies.

Introduction: Disability as a social phenomenon

The modern construction of disability in Western societies: Capitalist economy and disability; societies of normalisation and disability.

Disability as a social phenomenon: the heteronomous construction of a disability social identity.

Disability as a political movement: the emergence of activism.

The transformation of the law on disability.

Proposals for a Sociology of Disability: Neoliberalism, globalisation, economic-instrumental rationality and disability” (Curriculum, Health, Integration and Disability MA, Complutense University of Madrid, Spain) [CUM12]

Category: Accessibility as a requirement

In the domain of Social Sciences, Journalism and Information, the category of accessibility as a requirement in all aspects (i.e. legal, ethical, political requirement and technical, standards requirement), covers several important aspects. Both universal design and accessibility as a requirement are prominent in social science curricula and syllabi, particularly those with a social focus, including links to civil society and welfare provision. The social requirement is linked to addressing social inequalities related to factors such as poverty, unemployment, poor health, disability and lack of education

Findings indicate curricula that highlight the importance of accessibility as an ethical and policy issue in the framework of diversity management within organisations and companies (Diversity and Disability Studies, FH Kärnten, Austria [FHK23]), accessibility as part of the political self-advocacy strategies by people with disabilities (e.g. Health, Integration and Disability MA, Complutense University of Madrid [CUM12]), and legal aspects related to anti-discrimination laws, disability equality laws, national, international and supranational legislation and international conventions (Diversity and Disability Studies, FH Kärnten, Austria [FHK23]).

It is interesting to note that in the domain of Social Sciences, Journalism and Information there is a specific connection of accessibility as a requirement in the framework of the Convention on the Rights of Persons with Disabilities and its implementation at the national level. For example:

[Syllabus] "International legal framework defining equal opportunities and accessibility; Czech legislation defining equal opportunities and accessibility" (CORE040 Universal design - inclusion of alterity, Masaryk University, Czechia) [MUN123e]

Curricula also address both the international legal framework defining equal opportunities and accessibility and national legislation related to these issues, as indicated in the example below:

[Competence:] (The student) “knows and understands the areas of responsibility on dependency and disability among the different public administrations.” (Curriculum, Social Work BA, University of Huelva, Spain) [UHU09]

In addition, in this domain, accessibility as a requirement often has a social dimension, including links to civil society and welfare provisions. The social requirement in some programmes is linked to social inequalities. An example of such can be found in the learning outcomes of the Spanish Social Work BA:

(The student) “is able to evaluate how social disparities and inequalities (linked, for instance, to poverty, unemployment, poor health, disability and lack of education and other sources of inequality) impact human relations and generate situations of need, discomfort, precarity, vulnerability, segregation, etc.” (Curriculum, Social Work BA, University of Huelva, Spain) [UHU09]

In curricula in the field of disability studies under the domain of Social Sciences, it seems that there is a strong focus on diversity, inclusion of disadvantaged groups, management skills (e.g. disability and diversity management), awareness raising and participation.

Category: Accessibility curricula emphasis

This domain covers a wide range of topics related to the field of disability studies as well as the field of social work. Hence, as probably anticipated, relevant curricula (e.g. Diversity and Disability Studies [FHK23] and Social Work (Social Work BA [UHU09], Health, Integration and Disability MA [CUM12]). In extensive and focused on disability and diversity curricula like these, concepts relevant to accessibility are covered in various parts of the curriculum such as course content, electives, competences, learning objectives, course titles and learning outcomes. For example, the content description of the Social Work and Dependency course in the Social Work BA covers the following topics:

“Topic 1: Disability and dependency. General considerations and conceptual problems. Topic 2. Regulatory framework on the protection of dependent persons. Topic 3. Regulatory framework on the protection of persons with disability. Topic 4: Models of disability. Topic 5. Dependency and disability within the social intervention framework. Topic 6: Gender inequalities. Topic 7: Caring for the carer.” (Curriculum, Social Work BA, University of Huelva, Spain) [UHU09]

Another example are competences students should gain in the course “Disability and handicap, generations and ageing” in the BA Social Work:

“Graduates have interdisciplinary knowledge of diversity and intersectionality. They are able to reflect on the concepts and scientific approaches they have learned, which deal with the interaction of the dimensions of gender, age, religion and

ideology, ethnicity, sexual orientation, physical abilities as well as social class and nationality. They also have knowledge of the life situations of social work recipients, in particular on the topics of disability/disability, generations/age, gender/sex and migration/transculturality.” (FH Salzburg, Austria) [FHS23a]

Another example is the Communication and Internet Studies BA (User-centred design course, Communication and Internet Studies BA, Cyprus University of Technology, Cyprus) [CUT23b] where there is an emphasis on learning objectives and learning outcomes related to user-centred design and human-computer interaction.

Domain: Business, Administration and Law

Accessibility in the context of Business, Administration and Law, seems to be used to promote equality, diversity and social justice. It covers different aspects of accessibility, such as the built environment, usability and ICT accessibility. Gender and diversity are emphasised and international standards such as the Convention on the Rights of Persons with Disabilities are often referred to. In the following, the analysis of the results per category of analysis is presented.

Category: Accessibility sectors

In this area, accessibility seems to be mainly mentioned in the curricula under the sector of justice and law, which is probably expected. Representative study programmes include general programmes in Law (Law BA, University of Alcalá [UAL08], Legal Clinic of Vulnerable Groups Rights MA, Masaryk University [MUNI23f]) or more specific programmes in Legal Gender Studies (Law Mag.iur., JKU Linz) [JKU23a] and courses in programmes focusing on social justice such as courses on Legal Clinic of Vulnerable Groups Law (Legal Clinic syllabus within the Law BA, University of Alcalá [UAL08]).

In this framework accessibility is connected to topics such as disability equality law and disability recruitment law, but also particularly equal treatment law, for example in the content of the Legal Clinic syllabus:

“The right to access justice for persons with disabilities/chronic illnesses. The financial and fiscal rights of persons with disabilities/chronic illnesses.” (Legal Clinic syllabus, Law BA, University of Alcalá, Spain) [UAL08]

Another example is the course “Legal protection in Antidiscrimination Law”:

“In-depth examination of the legal claims and sanctions in anti-discrimination law and the various legal protection options. The legal protection channels of the Equal Treatment Act (GIBG or GBK/GAW-G), the Disability Equality Act and the Disability Employment Act (BGStG-BEinstG), the Federal Equal Treatment Act (B-GIBG) and the Upper Austrian Anti-Discrimination Act (Upper Austrian ADG) are dealt with. Further contents are the problems in cases of multiple discrimination and

intersectional discrimination.” (Legal Protection in Anti-Discrimination Law, Law Mag.iur., Johannes Kepler Universität Linz, Austria) [JKU23a]

Another example is course Legal Clinic of Vulnerable Groups Rights (Masaryk University, Czechia) [MUNI23f]:

[Course objectives:] “This course aims to provide students with basic information about vulnerable groups' rights and familiarise them with their (non) fulfilment in practice.” (Legal Clinic of Vulnerable Groups Rights, Masaryk University, Czechia) [MUNI23f]

Category: Accessibility population

In the domain of Business Administration and Law, and since Law was the sector of emphasis, accessibility references seemed to be connected to a range of population including different target groups such as older people, people with disabilities, people from different cultural backgrounds, different genders and different forms of diversity:

“The course [Categories of Inequality in Comparative Law] deals with different categories of social and legal inequality (e.g. gender, ethnicity, class, sexual orientation) and their interplay. It introduces the method of comparative law. In the form of a micro-comparison, a legal comparison of the consideration and analysis of individual life circumstances along the categories of gender, ethnicity, etc. takes place.” (Law Mag.iur., Johannes Kepler Universität, Austria) [JKU23a]

In this framework, concepts relevant to accessibility are also connected specifically with people with disability and people with chronic illnesses through issues on the regulation of disability rights, privacy, data protection in the context of health and disability, and social protection, information systems, ethics, crime, social justice, accessibility and cybercrime. An example can be found in the Legal Clinic syllabus:

“This syllabus [...] is based on the experience acquired since the academic year 2012-2013. Academic Clinic at UAH has specialised on legal literacy regarding people with disabilities or chronic illnesses, particularly persons with HIV.” (Legal Clinic syllabus, Law BA, University of Alcalá, Spain) [UAL08]

Category: Accessibility area/type

Many areas/types of accessibility are covered in this domain: from the built environment, through personal autonomy (e.g. Law BA, University of Alcalá [UAL08]), to ICT and web accessibility in relation to collaboration (Business Administration and Law Consultancy MA, University of Granada [UGR21]).

Usability (specifically in the context of web application) is also covered as an aspect/type of accessibility, even though not synonymous, and this is covered in the Business, Administration and Law Consultancy MA curriculum under the theme of "Interoperability, Collaboration and Accessibility”:

“Edit (web) contents and structure them in a coherent, navigable and accessible manner.” (Curriculum, Business Administration and Law Consultancy MA, University of Granada, Spain) [UGR21]

Category: Accessibility construction

In the domain of Business, Administration and Law accessibility is constructed around two main theoretical frameworks of conceptualising disability and diversity issues: socially and legally.

“Under a social model construction, the focus is on inclusion and exclusion and the importance of diversity management and change management. This course [Strategic Diversity Management] focuses on the strategic implementation of diversity-specific aspects and the associated organisational change. We therefore deal in detail with issues relating to the implementation of diversity strategies (target agreement processes, means-objective relations, operationalisation and evaluation as well as methods for diversity-specific organisational analysis). As this implementation in most organisations involves changes in the organisational culture, we will deal with the various fields of action of targeted change management. On the other hand, we discuss individual elements of knowledge management, as a continuous transformation between implicit and explicit diversity-specific knowledge is generated in these change processes.” (Strategic Diversity Management, Business Law LL.B., Wirtschaftsuniversität Wien) [WUW23]

Under the legal construction, accessibility concepts are presented with reference to relevant legislation such as the Equal Treatment Act, the Disability Act and to the Constitutional Court and the European Court of Human Rights (e.g. Law Mag.iur., JKU). The latter is also referred to within the category accessibility requirement. The focus is on social justice, participation and accessibility.

In addition, accessibility is also constructed around a more general perspective of diversity and human rights, including disability and gender issues: For example:

“The course focuses on the strategic implementation of diversity-related aspects and the associated organisational change. The course focuses on the strategic implementation of diversity-related aspects and the associated organisational change. Therefore, we deal in detail with questions of the implementation of diversity strategies (target agreement processes, means-end relations, operationalisation and evaluation as well as methods of diversity-specific organisational analysis). Since in most organisations this implementation is associated with changes in the organisational culture, on the one hand we deal with the different fields of action of goal-oriented change management. On the other hand, we discuss individual elements of knowledge management, since in these change processes a continuous transformation between implicit and explicit diversity-specific knowledge is generated.” (Business Law LL.B., WU, Austria) [WUW23]

[Competence:] “Contribute to the development of human rights, democratic principles, equality principles between men and women, respect for the environment, universal accessibility and a culture of peace.” (Curriculum, Law BA, University of Alcalá, Spain) [UAL08]

Category: Accessibility as a requirement

In this domain, accessibility as a requirement in both the aspects identified in the methodology (i.e. legal/ethical/political and technical/standards/guidelines) is mentioned mainly under the legal requirement aspect. More specifically, accessibility is highlighted in relation to legislation such as the Equal Treatment Act and the Disability Act, the Constitutional Court and the European Court of Human Rights, as well as to the Convention on the Rights of Persons with Disabilities and its national implementation, as presented in examples in the previous category.

In general, the requirement of accessibility, mainly as an obligation is related to ensuring equal opportunities and the right to live in a barrier-free environment, as exemplified in the Digital Communication course within the Digital Communication MA:

“Develop their professional activity respecting the fundamental and equality rights between men and women, the principles of equality of opportunity, non-discrimination and universal accessibility for people with disabilities and in adherence to democratic values and values aligned with the culture of peace and democracy.” (Curriculum, Digital Communication MA, University of Alicante, Spain) [UNA21]

Accessibility in this domain is also connected to social services, requirements, with strong links to civil society and welfare provisions. In the Legal Clinic course, the focus is primarily on ensuring the rights of people with chronic illnesses or disabilities:

“Module: Administrative protection of the fundamental rights of persons with a chronic illness/disability. The protection of the rights of persons with disabilities or chronic illnesses through administrative appeals.” (Legal Clinic syllabus, Law BA, University of Alcalá, Spain) [UAL08]

Category: Accessibility curricula emphasis

Connections of accessibility with universal design and the importance of barrier-free life appear in the curricula of the Business, Administration and Law domain, mainly in elective courses. The references have been identified in learning outcomes, for example:

“After completing this course [Strategic diversity management], students will be able to Implement diversity strategies based on theoretical knowledge of organisational change and knowledge management to implement diversity strategies.” (Strategic Diversity Management, Law BA, Wirtschaftsuniversität Wien) [WUW23]

and also, in course content descriptions, for example:

“Module. Immigration rights of persons with disabilities/chronic illnesses. 1. The rights of persons with residence permits. 2. The rights of persons without resident permits. 3. The rights of asylum seekers.” (Curriculum, Law BA, University of Alcalá, Spain) [UAL08]

as well as in competences, for example:

“Incorporate the principles of Universal Design in their profession.” (Curriculum, Business Administration and Law Consultancy MA, University of Granada, Spain) [UGR21]

In such curricula and courses, concepts related to accessibility are often connected to issues of inequality, anti-discrimination and social justice are also addressed, often revolving around the UN Convention on the Rights of Persons with Disabilities and its implementation in the national context. For example,

Such an example is course Legal Clinic of Vulnerable Groups Rights at Masaryk University, Czechia:

[Course objectives:] "We will introduce students to the competences of an ombudsman who fulfils the role of a national preventive mechanism, monitors the implementation of the Convention on the Rights of Persons with Disabilities and protects people from the misconduct of the authorities." (Legal Clinic of Vulnerable Groups Rights, Masaryk University, Czechia) [MUNI23f]

[Syllabus:] "2. Convention on the Rights of Persons with Disabilities and its implementation in the Czech environment. 3. Accessibility of an environment, services, and information for vulnerable groups." (Legal Clinic of Vulnerable Groups Rights, Masaryk University, Czechia) [MUNI23f]

It is also worth noting that some recurring competences occur which specifically relate to the principles of universal design along with human rights and gender emphasising the importance of respecting fundamental and equal rights, non-discrimination and universal accessibility for people with disabilities, in line with democratic values and the culture of peace and democracy. An example comes from Spain as exemplified before:

“Develop their professional activity respecting the fundamental and equality rights between men and women, the principles of equality of opportunity, non-discrimination and universal accessibility for people with disabilities and in adherence to democratic values and values aligned with the culture of peace and democracy.” (Curriculum, Digital Communication MA, University of Alicante, Spain) [UNA21]

Domain: Information and Communication Technologies

In general, in the domain of Information and Communication Technologies (ICT) accessibility in this area is primarily concerned with web and internet accessibility. It places a strong emphasis on user-centred design, usability and human-computer interaction. The aim is to

create digital products and services that respect diversity and human rights. In the following, the analysis of the results per category of analysis is presented.

Category: Accessibility sectors

In the curricula of the domain of ICT, accessibility is mentioned across various sectors, and mainly those that involve digitalisation, digital transformation, digital communication, etc. The sector of services primarily focuses on web accessibility as well as accessibility of services (e.g. Media Informatics and Visual Computing BSc, TU Wien, Austria).

Category: Accessibility population

Similarly to sectors, in the ICT domain accessibility refers to a range of population and target groups and according to the programme of study emphasis includes disability, older people, gender, diversity and intersectionality (Computer Engineering BA, University of the Balearic Islands, Spain [UBI20], Business Informatics BSc, Universität Klagenfurt, Austria [UKL23]).

Category: Accessibility area/type

In the domain of ICT the focus in relation to the area of accessibility is, as expected, mostly on digital and web accessibility, including interest on human-computer interaction, and usability. For example, the Software Development MA curriculum from Spain includes the following learning outcomes for students:

“Design and develop application interfaces for mobile devices respecting the platforms’ style guidelines, adhering to usability, accessibility and adaptability criteria.” (Curriculum, Software Development MA, University of Alicante, Spain) [UNA21]

The content addressed in the various curricula in ICT covers a range of topics, including assistive systems development, accessible web applications, coding in HTML, CSS, and JavaScript with an emphasis on accessibility, interface and interaction design, usability engineering, and mobile interaction. Some examples from Software and Web Development are the following:

[Course content description:] “Interface design. Adaptability to different devices. Usability, Accessibility. Interface components. Design patterns for the interface. Personalisation of components.” (Curriculum, Software Development MA, University of Alicante, Spain) [UNA21]

“Accessibility: Writing HTML, CSS, and JavaScript with accessibility in mind” (Web Engineering, Media Informatics and Visual Computing BSc, TU Wien) [TUW 23b]

Some curricula also cover user-centred design particularly in the context of AI and machine learning - for example in the course “Socially embedded computing”:

“Companion Technologies: Fundamentals of Digital Assistants | Human-Machine Interfaces to support people with AI/machine learning (Socially Embedded Computing, Media Informatics and Visual Computing BSc, TU Wien)” [TUW23b]

Web accessibility also holds an important position, often linked to relevant standards (see also Category: requirements):

“Know and apply the main standards proposed by W3C for the development of accessible and usable websites.” (Curriculum, Web Engineering MA, University of Oviedo, Spain) [UOV17]

Category: Accessibility construction

In the domain of ICT, accessibility is conceptualised under two main theoretical dimensions relevant to disability construction. Firstly, it is socially constructed with a strong emphasis on participation, inclusion/exclusion, diversity and intersectionality. For example:

“Recently, diversity management has been promoted as a central instrument for equality policies. But what does diversity mean? And how does it differ from the concept of intersectionality? What potential does diversity management harbour and what paradoxes exist within this equality strategy? This course introduces basic theories and practices of diversity management and the concept of intersectionality. theories and practices of diversity management and the concept of intersectionality, and their opportunities and their limitations.” (What is Diversity?, Business Informatics BSc., Universität Klagenfurt, Austria) [UKL23]

Secondly, accessibility is framed under the human rights model, with explicit reference to the UN Convention on the Rights of Persons with Disabilities and its implementation in the national context, often referred to as the 'accessibility requirement'. For example:

[Course syllabus:] “International legal framework (UN Convention on the Rights of Persons with Disabilities) defining equal opportunities and accessibility; Czech legislation defining equal opportunities and accessibility” (Information Services Design, Course on Digital Accessibility, Masaryk University, Czechia) [MUNI23g]

Category: Accessibility as a requirement

In this domain, accessibility is seen as a political requirement linked to theories of justice, as well as a human right (see also Category: Accessibility Construction above) and a requirement as part of universal design, particularly in the context of user interface (UI) implementation and inclusive design and universal design. Legal aspects are also covered, including EU and national regulations and directives:

“Know the fundamental concepts in the international web accessibility standards; Know the legal norms applicable to websites regarding accessibility.” (Curriculum, Web Engineering MA, University of Oviedo, Spain) [UOV17]

“Application of the methods of use-centred design, with the elicitation of requirements, generation of specifications and the evaluation of the resulting systems and prototypes using ethnographic methods and contextual design” (Socially Embedded Computing, Media Informatics and Visual Computing BSc, TU Wien, Austria) [TUW 23b]

Category: Accessibility curricula emphasis

In the ICT area, various aspects are emphasised in the curriculum itself (e.g. Media Informatics and Visual Computing BSc, TU Wien, Austria [TUW23b]) and in the electives, including course titles (e.g. Website Usability, Accessibility and Adaptability from the Web Engineering MA, University of Oviedo, Spain [UOV17]). In these and other courses, accessibility is also mentioned in learning outcomes and learning objectives, for example:

[Learning outcome:] “Be able to design and evaluate a website considering all applicable usability and accessibility principles.” (Curriculum, Web Engineering MA, University of Oviedo, Spain) [UOV17]

And course content descriptions and course resources, for example:

[From the syllabus Internet Distributed Applications and User Interfaces:] “Chapter 3. Universal design and accessibility (15 in-person hours, 22.5 non-classroom hours). Universal design: Universal design principles. Types of special needs. Assistive products and tools. Introduction to web accessibility. WCAG 2.1 standards. Process and tools to evaluate accessibility. Real case studies with professionals.” (Computer Engineering BA, University of the Balearic Islands, Spain) [UBI20]

In addition, the following extract is an example of the strong emphasis on research and development related to accessibility, as this is exemplified in the study programme at Masaryk University in Czechia.

[Program curriculum:] In each semester, we explore the areas of design thinking, user research, information services design, management and services, and strategic design. We emphasize the integration of information service design and technology with insights from psychology, sociology, and other social science fields. We emphasize a critical approach, ethics, and accountability - leveraging our knowledge of interaction design, accessibility, inclusive design, and transition design. (Information Services Design, Masaryk University, Czechia) [MUNI23g]

This study programme explores areas such as design thinking, user research, information services design, management, services and strategic design, all with a focus on accessibility and creating meaningful impact.

Domain: Engineering, Manufacturing and Construction

In this domain, accessibility focuses on ensuring accessible architecture and infrastructure, particularly in public transport and buildings. It aims to accommodate people with disabilities

and emphasises universal design, digital accessibility, and personal autonomy. In the following, the analysis of the results per category of analysis are presented.

Category: Accessibility sectors

In this domain, there is a focus on accessibility within the transport sector as well as the built environment.

In transport, there is a particular emphasis on public transport, especially rail systems designed for people with disabilities and reduced mobility, and accessibility in transport planning. For example:

[Course content description:] “Introduction to transport planning. Accessibility. Transport demand.” (from the Transports syllabus in the Civil Engineering BA, University of Burgos, Spain) [UBU18]

Housing and living as well as services refer to accessible architecture and barrier-free buildings. For example, the study programme in Architecture (Architecture MSc, TU Vienna, Austria [TUW23c]) covers the housing and living accessibility sector, addressing the needs of the elderly and studying different models of assisted living environments:

“Acquisition of knowledge and guided exercises on barrier-free building and spatial design; analysis and design-related consideration of the diversity of human needs and expectations with regard to the built environment.” (Construction Ecology, Architecture MSc, TU Wien, Austria) [TUW23c]

Category: Accessibility population

The accessibility population covered in this domain relates primarily to people with disabilities, with a particular focus on people with reduced mobility or with motor or mental impairments. For example, in the following extract from the course description on Accessible Architecture, Brno University of Technology is written:

[Course description:] “The course consists of seminars where students will familiarise themselves with the issue of designing public spaces for the persons with limited capability of movement and orientation.” (Accessible Architecture, Brno University of Technology, Czechia) [VUT23]

There are also specific references to persons with physical and sensory accessibility in relation to personal autonomy. In this framework, the particular groups are linked to reference to assistive product technologies, and personal autonomy in relation to assisted living environments:

“Understand the principles for design for people with physical or mental impairments (...) Rethink how physical impairment enables critical and creative approaches to design for the user ... Exploring systems of Assisted living in relation to the urban

context/ Identifying optimised living environments” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

Gender and diversity are also included.

“Gain a better understanding of physical needs, social and physical diversity of user groups.” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University) [UNIC23a]

“Individual task to be presented and defended before a panel consisting of a professional project on the specific technologies of Civil Engineering which synthesises and incorporates the acquired competences during the degree. Special attention will be given to projects adhering to the principles of equality of opportunities and universal accessibility for people with disabilities (Law 51/2003, of 2 December, on equality of opportunities, non-discrimination and universal accessibility of people with disabilities).” (Curriculum, Civil Engineering BA, University of Burgos, Spain) [UBU18]

Category: Accessibility area/type

In the domain of Engineering, Manufacturing and Constructions, accessibility focuses on the built environment with connections to universal design and references to accessible buildings and interiors, smart homes and the Internet of Things, and digital and web accessibility. Some examples are as follows:

[Learning objective:] “Design and execute buildings and spaces suitable for people with different disabilities.” (Curriculum, Architecture BA, University of Valladolid, Spain) [UVA12]

[Course content description:] “A review of deep learning applications, such as Large-scale deep learning, computer vision, speech recognition.” (Artificial Neural Networks and Deep Learning, Artificial Intelligence MSc, European University Cyprus, Cyprus) [EUC23a]

[Course learning outcomes:] “Students will use a project from studio work or pre-prepared documentation and after the individual lectures, they will incorporate the acquired knowledge, i.e. the 7 principles of universal design so that the student's designs do not discriminate against persons of different ages and abilities.” Barrier-free Buildings (Technical University of Liberec, Czechia) [TUL23]

Accessibility with respect to personal autonomy is also mentioned in some curricula, with reference to assistive product technologies, as well as connections to the design of physical spaces on a user-centred design, particularly in relation to assisted living environments:

[Course content description:] “Exploring systems of Assisted living in relation to the urban context/ Identifying optimised living environments” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

It is interesting to note that in some courses there are also references to the impact of urbanism on social aspects, mobility, universal accessibility, housing rights, urban planning and heritage conservation:

[Course content description:] “Know the implications that urbanism has on social aspects (mobility and universal accessibility, the right to housing, urbanism planning regarding labour, protection of heritage, among others).” (Curriculum, Architecture BA, University of Valladolid, Spain) [UVA12]

Web accessibility is also targeted in programs of this domain, such as the Artificial Intelligence study programme of the Spanish National University of Distance Education which alludes to web accessibility, particularly in the context of adaptive systems for education:

[Learning outcome:] “Understand the adaptive learning foundations in the different areas that they derive from: artificial intelligence, adaptive systems, interactive education systems, user modelling, interactive systems on the web, education standards, automatic learning, accessibility and universal design.” (Curriculum, Artificial Intelligence MA, National University of Distance Education, Spain) [NUD22]

Category: Accessibility construction

In the domain of Engineering, Manufacturing and Construction, accessibility seems to be understood in relation to various constructions of disability and diversity:

Under a social model construction, concepts relevant to accessibility emphasise the need for disability but also for gender and diversity competence, with a focus on overcoming social barriers, particularly in the context of architecture and assisted living environments. It also examines the social construction of space. For example:

[Learning outcomes:] “Critically appraise and form considered judgments about the spatial, aesthetic, technical and social qualities of Assisted Living Environments”. (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

Under a more economic construction there are highlights to the economic aspect, focusing on consumers and clients for whom innovative services and products can be developed, taking into account diversity management. For example:

“Graduates have [...] gender and diversity skills that enable them to work in solidarity in a working environment characterised by diversity. They are aware of the social, economic and ecological effects of their actions and orientate them towards the overarching objectives of a sustainable design of the planned and built environment.” (Curriculum, Architecture MSc, TU Wien, Austria)

Not surprisingly, accessibility is constructed with a human rights focus, under this domain too. This includes understanding where exclusion or discrimination occurs in society or organisations, with the aim of addressing and eliminating such issues:

“To examine the ways in which space is socially constructed ... Students learn to be socially aware and to place the user to the centre of their investigation” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

Category: Accessibility as a requirement

In this domain, accessibility has different requirement dimensions:

Technical requirements focus on accessible construction and accessible public transport. Accessibility standards are often discussed in this context:

“TSI [technical specifications for interoperability]: Infrastructure, energy, accessibility of the Union's railway system for persons with disabilities and persons with reduced mobility, safety in railway tunnels.” (Interoperability, Railroad Technology and Mobility BSc, FH St. Pölten, Austria) [FHS23]

Specifically, within the field of architecture, accessibility is seen as a social welfare requirement, of course in combination with regulations for accessible built environment and physical spaces. This perspective emphasises senior living and understanding the needs of different user groups. It also addresses the social construction of space. The following example indicates this perspective:

[Learning objectives:] “To examine the ways in which space is socially constructed” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

In addition, the framework of Universal Design for Learning, with its guidelines, standards, techniques and tools, is a prevalent requirement, particularly in the field of Artificial Intelligence (e.g. Artificial Intelligence MA, National University of Distance Education, Spain) [NUD22]) with a focus on adaptive systems in education.

Category: Accessibility curricula emphasis

In this domain, accessibility is included in various parts of the curricula identified. In general, the various curricula include three main themes in accessibility: technical (Universal Design, user-oriented construction, accessibility of railway systems), social (diversity and gender skills) and economic (market access through diversity management). These themes are reflected in course titles e.g. Senior Living Social Aspect of Architecture (Architecture MArch, Nicosia University, Cyprus) [UNIC23a], Design for All, Usability Engineering and Mobile Interaction and Barrier-free Construction (Architecture MSc, TU Wien, Austria) [TUW23b].

In course content descriptions, for example:

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“Ability to remove architectural barriers.” (Architectural projects IV syllabus, from the Architecture BA, University of Valladolid, Spain) [UVA12]

[Course content description and Activities:] “Research & Analysis of Case studies, Research – Identifying social models” (Senior Living Social Aspects of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

In course learning objectives and learning outcomes:

“Understand the principles for design for people with physical or mental impairments. Students learn to be socially aware and to place the user to the centre of their investigation” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University) [UNIC23a]

and course resources:

[Course resources:] “Designing for Disability Justice: On the need to take a variety of human bodies into account [...]. Designing for disabled children and children with special educational needs” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

“E., Montandon, L., Roldán, D., & Buendía, F. (2012). Accessible Lifelong Learning at Higher Education: Outcomes and Lessons Learned at two Different Pilot Sites in the EU4ALL Project. JUCS - Journal of Universal Computer Science, 18(1), 62–85. <https://doi.org/10.3217/jucs-018-01-0062>” (Adaptive Systems in Education syllabus, from the Artificial Intelligence MA, National University of Distance Education, Spain) [NUD22]

In addition, there is some focus on research and development in accessibility, with students conducting research and analysing case studies to identify social models. For example:

[Course content description and research and development in accessibility:]
“Research & Analysis of Case studies, Research – Identifying social models” (Senior Living Social Aspect of Architecture, Architecture MArch, Nicosia University, Cyprus) [UNIC23a]

Domain: Health and Welfare

In the domain of Health and Welfare, accessibility emphasises the rights and well-being of people with disabilities. It addresses a range of accessibility needs, including those related to visual, motor and hearing impairments. It is based on national and international standards and focuses on creating a barrier-free environment. In the following, the analysis of the results per category of analysis is presented.

Category: Accessibility sectors

In this domain, accessibility is unsurprisingly primarily mentioned in relation to the health and medical sector, while a secondary sector seems to be education.

Accessibility in the health and medical sector is mentioned in curricula more specific to rehabilitation studies, for example the BSc Occupational Therapy (Introduction in Occupational Therapy course, Occupational Therapy in Children I course, Occupational Therapy in Children II course, Occupational Therapy in Adults I course, Occupational Therapy in Adults II course, Assistive Technology in Occupational Therapy course, Occupational Therapy BSc, European University Cyprus) [EUC23d]; and the Well Aging and Rehabilitation Nursing: Disability and Dependency syllabi in the Medicine BA (Autonomous University of Barcelona, Spain [AUB21]) and Nursing BA (University of the Basque Country, Spain [UBC14]). An example from the health and medicine sector can be found in the latter Nursing curriculum:

[Course content description:] “Legal, anthropological and social aspects of disability and dependency. Physical and rehabilitating care in chronic and disability processes and illnesses. Getting to know the factors that condition these situations. Describing the theoretical and methodological basis of rehabilitating care, training the student to apply the special care that these situations require.” (Nursing BA, University of the Basque Country, Spain) [UBC14]

Accessibility in the education sector in this domain is also mainly covered in programmes that aim at professionals of healthcare also working in education. Thus, the education sector is mentioned in curricula for occupational therapy and speech and language therapy. In both disciplines, accessibility is emphasised in connection with assistive technology, particularly in relation to the educational environment. For example, the BSc in Occupational Therapy programme of the European University Cyprus holds a course dedicated to Assistive Technology and accessibility, and there are also specific highlights on accessibility in education in other courses, such as: the use of robotics and classroom interventions for educational purposes (Occupational Therapy in Children I), accessible documents in learning (Occupational Therapy in Children II), accessibility with easy-to-read (Occupational Therapy in Adults II) [EUC23d].

Relevant curricula also make some references to the 'housing/living' sector, mainly focusing on the application of ergonomic principles and various types of assistive technology to create appropriate living environments.

The BSc Occupational Therapy also deals with transport and accessibility issues:

“Assistive Technology and Access (e.g. Mobility and Transportation)” (Assistive Technology in Occupational Therapy, Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23d]

Category: Accessibility population

In the domain of Healthcare and Welfare, accessibility concepts in curricula focus primarily on the elderly, people with disabilities in general and specifically those with visual, motor and hearing impairments: For example, the learning outcomes of a curriculum from Spain mention:

“Analyse the possibilities of new technologies in the improvement of the quality of life of people with disabilities.” (Curriculum, Disability and Dependency MA, Spain) [UAC18]

Other curricula also refer to children with complex communication needs:

“They describe the use of assistive technology for reading, information processing and comprehension for children with various needs (sensory, cognitive, mental, physical/motor) in the classroom ... Assistive technology. Augmentative and alternative communication systems” (Occupational Therapy in Children II, Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23b].

As an indirect population, curricula also refer to the service providers and their responsibility for accessibility. More specifically in the Medicine BA curriculum (Autonomous University of Barcelona, Spain [AUB21]) there is a reference to the deontological code for medical professionals, which emphasises their duty to respect patients' beliefs, regardless of their cultural, ideological or religious background, as long as these beliefs do not conflict with human rights.

Category: Accessibility area/type

The main focus of accessibility in this context is on assistive product technologies and human-computer interaction, i.e. referring to ICT in general terms. This includes a focus on health-assisting engineering, assistive robotics, wearable electronics, adaptation of sports equipment for specific user groups, prosthetics, and enhanced communication for improved health empowerment. For example:

“They recognize the application of robotics in children's education and social interaction skills” (Occupational Therapy in Children II, Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23d]

“Analyse the possibilities of new technologies in the improvement of the quality of life of people with disabilities.” (Disability support technology syllabus in the Disability and Dependency MA, University of A Coruña, Spain) [UAC18]

Assistive technology plays a crucial role in several areas, in particular rehabilitation, education and communication, including augmentative and alternative communication (AAC), so examining accessibility across many areas and types of ways to create accessible services, environments and products. For example, a course on assistive technologies is very broad and deals with the following content:

“Introduction to the different types of assistive technology and their classification: - Augmentative and alternative aids, Classification according to ISO 9999, Communication basics - What is communication in general?, What is communication with and for disabled people?, Political correctness in communicating about people with disabilities, Disabilities and approaches to their amelioration, Sensory organs, Motor functions, Language and intellect, Age-related changes, Human-machine interfaces for disabled and older people, Aids and communication for visually impaired people, blind people, hard of hearing people, deaf people, people with reduced mobility, People with locked-in syndrome, People with speech and language impairments, Accessible design - General principles, Requirements of ÖNORM B 1600, Application examples, Challenge to check one's own environment for accessibility and to present the results to the group, technical aids for everyday life on the basis of simple examples (Assistive Technologies, Health Assisting Engineering MSc, FH Campus Wien, Austria) [FHC23]

In addition, the areas of personal autonomy, physical accessibility and sensory accessibility are also discussed and considered in this domain e.g. (Speech and Language Therapy BSc, European University Cyprus, Cyprus) [EUC23d]

Category: Accessibility construction

In the domain of Healthcare and Welfare, accessibility is constructed in a rather different way than in the previous domain. As probably anticipated, there is an influence from the medical model of disability in the ways accessibility is conceptualised. For instance, in Occupational Therapy BSc, assistive technology is also mentioned in the context of rehabilitation:

[Course content description:] “Assistive technology for daily living, rehabilitation, education and communication.” (Occupational Therapy in Children I, Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23d]

In addition to the medical construct, there is an economic construct around accessibility in which disabled people are seen as consumers or clients. This includes also the use of assistive technology as a means of rehabilitation.

[Course content description:] “Professional Practice in Assistive Technology: IT Service Delivery System, Research, Industry and Consumers” (Assistive Technology in Occupational Therapy, Occupational Therapy BSc, European University Cyprus) [EUC23d]

Accessibility is considered from a human rights perspective, emphasising the importance of inclusion and participation in all aspects of life and recognising the use of technology as a human right. This is connected to the importance of respecting human rights principles in medical practice and the rehabilitation of care in the context of disability and dependency through accessible processes (e.g. Nursing BA, University of the Basque Country, Spain) [UBC14]; Disability and Dependency MA, University of A Coruña, Spain) [UAC18]) Another example of connecting accessibility with human rights is the BA Medicine curriculum of

Spain (Autonomous University of Barcelona, Spain [AUB21]) in which competences are linked to the human rights requirement (UNCRPD).

Accessibility under the social construction of disability in the Healthcare and Welfare is linked to references to assistive technology as a means of overcoming social barriers, addressing issues related to barriers to participation:

[Learning outcomes:] “[students] Recognize barriers in the workplace and describe adjustments needed to enhance functionality and productivity” (Assistive Technology in Occupational Therapy, Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23d]

Overall, the construction of accessibility in this domain encompasses social, human rights and economic perspectives, with a focus on creating a barrier-free environment for people with different disabilities and limitations.

Category: Accessibility as a requirement

In this domain, accessibility is primarily seen as a human rights requirement, in line with national, EU and UN standards. This perspective includes social requirements related to civil society and welfare provisions and, to a lesser extent, legal and universal design requirements. For example, the BSc Occupational Therapy curriculum of the European University Cyprus considers legislation and regulation in relation to assistive technology at local, European and global levels (Assistive Technology in Occupational Therapy, Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23d]

Additional examples come from the Medicine BA in Spain:

“Develop disease-prevention activities and activities promoting health, and communicate adequately to facilitate the mediation between patients and their family members, adhering to ethics, fundamental human rights, human life, values of peace and democracy, equal opportunities, non-discrimination, and universal accessibility for persons with disabilities.” (Curriculum, Medicine BA, Autonomous University of Barcelona, Spain) [AUB21]

Category: Accessibility curricula emphasis

In this domain of Health and Welfare, accessibility in various curricula is met in course titles, learning objectives, course content descriptions and elective modules for specialisation, competences, learning objectives and learning outcomes.

For example, in the Health Assisting Engineering MSc (FH Campus Wien, Austria) [FHC23] accessibility is mentioned in the curriculum, course titles and course content descriptions.

Also, the Medicine Dr. med. (Johannes Kepler Universität, Austria) and the Sports BSc (Universität Wien, Austria) refer to accessibility in the learning objectives.

The courses within these programmes focus on health assistive engineering, assistive technologies, communication with easy language access and ethical issues related to disability.

In the BSc Occupational Therapy programme (Occupational Therapy BSc, European University Cyprus, Cyprus) [EUC23d]), accessibility is particularly evident in the course content descriptions and learning outcomes, which often relate to the use of assistive technology, but also solely to accessibility.

In Spain, disability-relevant course content descriptions, competences and learning outcomes are either framed in strictly medical terms, as in the first example, or in terms of assistive technology, as in the second example:

[Course content description:] “Health, illness and wellbeing. Disabilities, self-esteem and carers. Health challenges, Gender-specific medicine & Personalised medicine. Post-COVID-19.” (Well Ageing syllabus within the Medicine BA, Autonomous University of Barcelona, Spain) [AUB21]

“Evaluate the relevance of research, innovation and technological development towards economic and social impact and cultural advancement in society, particularly in the disability and dependency area.” (Disability support technology syllabus in the Technology Disability and Dependency MA, University of A Coruña, Spain) [UAC18]

Domain: Services⁸

In the context of tourism and services, accessibility focuses on factors such as physical accessibility, economics and safety. It is particularly concerned with ensuring that the physical environment is accessible, although it may pay less attention to the accessibility of the digital and natural environment. As mentioned in the methodology, the domain of Services was added during the analysis of the data particularly from Cyprus. Thus, data in this section are mainly derived from Cyprus analysis, though some other countries may indirectly share similar findings. Also, not all categories were evident in this domain, for Cyprus.

Category: Accessibility sectors

Accessibility is addressed in tourism, albeit to a limited extent. The focus is on critical factors affecting tourism, including accessibility, economy, climate and safety. In addition, the MEEC (meetings, exhibitions, events and conventions) sector should be made more aware of accessibility issues. An example of such a curriculum is Hospitality Management BBA (Hospitality Management BBA, Nicosia University, Cyprus) [UNIC23c]

⁸ Services domain was pertinent only to Cyprus

Category: Accessibility area/type

Regarding accessibility area/type, there are a few references to the built environment and physical accessibility, as well as more vague mentions of ICT-digital accessibility and the natural environment. For example:

[Learning outcomes:] “Examine and discuss critical issues that affect tourism (students should be able to generate understanding in relation to the external and internal factors that influence tourism and be able to discuss issues that affect tourism such as accessibility, economy, climate, safety)” (Special Topics, Hospitality Management BA, Nicosia University, Cyprus) [UNIC23c]

Category: Accessibility construction

This category is not present in this domain.

Category: Accessibility curricula emphasis

In the Hospitality Management study program of Nicosia University, accessibility issues in tourism are indicated in the course content description of the course “Special Topics” (Hospitality Management BBA, University of Nicosia, Cyprus) [UNIC23c]

Conclusions

This transnational report presented findings from three main tasks carried out in the context of work package (WP) 1 of the European-funded project ATHENA with the broader aim of selecting and analysing university curricula with regards to how accessibility and universal design feature in higher education. Below we provide a brief summary of what each task accomplished as well as basic findings that emerged from each.

The first step that was taken to fulfil the aim of WP1 involved the creation of a comprehensive list of domains and subdomains, assessed for the significance of accessibility and universal design with regards to the potential socioeconomic and political impact of relevant university programs. This evaluation employed a rating system with four categories with regards to accessibility and universal design: "Extremely relevant," "Relevant," "Nice to have," and "Not relevant." Seven main domains were identified as "Extremely relevant," which included Education, Arts and Humanities, Social Sciences, Journalism and Information, Business, Administration and Law, Information and Communication Technologies, Engineering, Manufacturing and Construction, and Health and Welfare. Each of these main domains includes a range of subdomains, all evaluated based on their relevance in the context of accessibility and universal design. This selection of domains and subdomains provided the basis for the next tasks.

As a subsequent step, each of the four countries – Austria, Czechia, Cyprus, and Spain – identified 21 suitable curricula meeting the criteria set for this task. Following a corpus linguistics analysis, results for this task revealed common patterns in the inclusion of

Accessibility and Universal Design principles in higher education curricula across the four countries. In Spain, corpus analysis of the selected curricula showed a focus on disabilities and accessibility, with fewer specialised terms. Cyprus displayed variations between curricula and syllabi. In Czechia, Education, Information, and Social Sciences featured accessibility and universal design more prominently, while other domains had lower representation. Austria also showed variations, with certain programs in Education, Information, Social Sciences, and Engineering emphasising these principles more than others. This highlights the differing emphasis on accessibility and universal design in the various academic fields.

As a final step, the collected sample of higher education curricula were subject to a qualitative content analysis to first assess how accessibility and Universal Design approaches were incorporated. Programmes were categorised into those such as Teacher Training or Health Assisting Engineering, which have inclusion and accessibility as an integral part of the curriculum, and others which incorporate these issues through selected courses, both compulsory and elective.

The analysis revealed that different disciplines approach disability in different ways. Education, social sciences, humanities, business and law emphasise accessibility linked to diversity, human rights and social inclusion. Accessibility and universal design are often grouped together with other legal and social requirements such as gender equality, linguistic rights, sustainability, etc, as explained below. In contrast, Information and Communication Technology, Engineering and Health Sciences focus on technology-enabled inclusion. In general, it was found that curricula tended to emphasise social diversity, occasionally recognising specific dimensions such as gender and migration, but typically addressed disability in a general sense, with a predominant focus on visual, hearing or motor impairments, while other disabilities receive limited attention. Overall accessibility and universal design were portrayed with significant variation across the different domains and disciplines as apparent in the curricula we analysed. Given that we analysed only the curricula in which concepts relevant to accessibility and universal design were present in the samples we selected, we are not in a position to make any claims as to how widespread such an emphasis might be across curricula and across countries. What can be said, however, is that in light of the fact that a number of curricula across the four countries and from different domains were located, one can argue with relative certainty that accessibility and universal design seem to appear in certain university curricula but in limited ways and with variegated meanings. Below we offer a brief recap on the main patterns we observed in the data per domain across countries in aggregate form:

Education

- The use of assistive technology appears prominently in Education, allowing students with different abilities to access learning materials more easily.
- Inclusive pedagogy adapts teaching methods to different learning styles and needs appears to be gaining in importance and so are guidelines and standards for inclusive education.

Arts and Humanities

- An emphasis on sensory accessibility, particularly through features such as audio description and subtitling, seems to be a pattern in this domain with a focus on making cultural and artistic content more accessible to people with visual and intellectual disabilities.

Social Sciences, Journalism and Information

- Universal design is gaining prominence in this domain with regards to ensuring that information and communication is accessible to a diverse group of individuals, including persons with disabilities, the elderly, and persons from diverse backgrounds.
- The use of assistive technologies to improve the accessibility of information and communication also appears to become important.

Business, Administration and Law

- Accessibility in this domain focuses on promoting equality, diversity and social justice with a growing emphasis on gender and diversity.
- References to international standards such as the Convention on the Rights of Persons with Disabilities were present to highlight the importance of alignment with global accessibility guidelines.

Information and Communication Technologies

- Curricula in this domain are characterised by a strong emphasis on user-centred design, usability and human-computer interaction to create digital products and services that are inclusive and respect diversity.

Engineering, Manufacturing and Construction

- An emphasis on universal design principles was observed, particularly in the design of public transport and buildings. Digital accessibility and personal autonomy also appear to be marked as important issues.

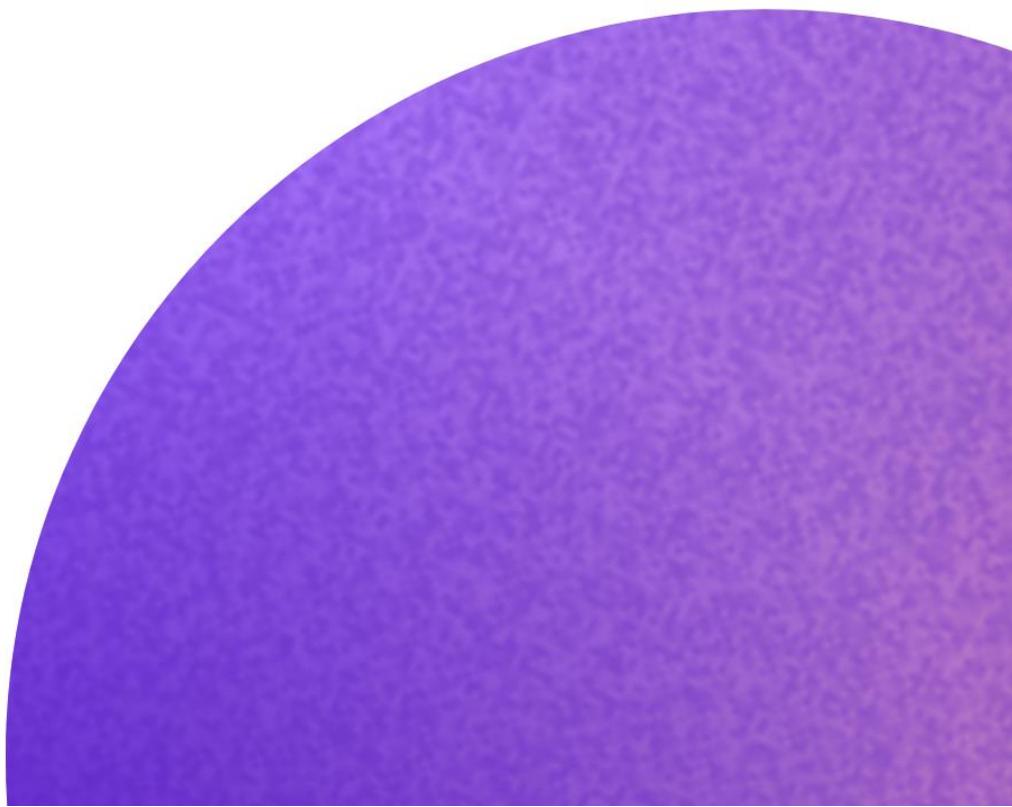
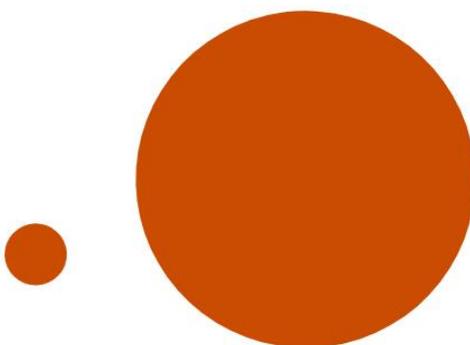
Health and Welfare

- Accessibility in health and medicine appears to focus on respecting the rights and well-being of people with disabilities, in line with national and international standards.

Services

- Ensuring physical accessibility was an emphasis observed in the context of tourism and services.

The findings of work package 1 and the transnational report underscores the uneven integration of accessibility in university curricula, revealing variations across academic domains, countries, and institutions. While certain disciplines, like Education, emphasize inclusive pedagogy and assistive technologies, others, such as Information and Communication Technologies, prioritize digital inclusivity. Importantly, our findings indicate that accessibility and considerations for people with disabilities are often implicitly incorporated into curricula, typically under the broader themes of diversity and human rights.



Good Practices or Examples

This section outlines good practices and provides examples that demonstrate how accessibility and universal design can be successfully and effectively applied to study programs. It may also serve as a valuable resource, amongst other results of this work package, in subsequent tasks, contributing to the development of recommendations for implementing accessibility and universal design in the curricula of the different domains and across different contexts.

Austria

In Austria the following two study programmes in Health Assisting Engineering and Teacher Education can be seen as good practice:

- Health Assisting Engineering MSc, FH Campus Vienna, Austria:

This programme focuses on improving people's independence and quality of life through the use of technology, applications and services. It combines aspects of technology, health, therapy, clinical work and research to apply occupational therapy principles to robotics and to analyse and support movement sequences with technological tools. Students create products, tools, games or systems that enable people with health problems to participate actively in everyday life. The course emphasises collaboration between technologists and healthcare professionals and explores the development of digital healthcare solutions for everyday activities and care.

- Teacher Education in Austria for universities and teacher training colleges across the country

With the adoption of the Federal Framework Law on the Introduction of a New Training Programme for Teachers in 2013, inclusive pedagogy has been anchored in teacher training in a number of ways. The structure of the new training programme creates good conditions for future teachers to deal with heterogeneity in school classes in an inclusive way. All students take courses on diversity and inclusion, which are embedded in the educational foundations, specialised sciences and subject didactics, as well as in practical pedagogical studies. Since 2016, it has also been possible throughout Austria to choose the specialisation (secondary level) or focus (primary level) "Inclusive Education" as part of the teacher training programme. [BMS22: 87]

Cyprus

In Cyprus a few specific course syllabi have been identified as examples of Good Practice. These are mainly examples from two universities: The European University Cyprus (private university) and the Cyprus University of Technology (public university):

- The Course Technology and Disability in the programmes: MA Education Sciences: Special and Inclusive Education and MA Education Sciences: Learning and Communication Technology and STEAM Education (elective course, European University Cyprus).
- The course "Assistive Technology in Occupational Therapy" in Occupational Therapy BSc (compulsory course, European University Cyprus).
- The course "Design for All" in Multimedia & Graphic Arts BA (compulsory course, Cyprus University of Technology).
- The course "Universal Design" in Interaction Design MSc (compulsory course, Cyprus University of Technology).

The main reason for listing the above as examples of good practice is the fact that, while other universities offer similar programmes of studies, not all of them include courses dedicated to Assistive Technology (AT) and Accessibility. The above courses are dedicated to AT and/or accessibility, and they include specific aspects of accessible and universal design as well as the role of assistive technology towards this aim.

Czechia

In Czechia, these courses can be mentioned as examples of good practice.

- Course Universal design - inclusion of alterity – accessibility which is offered at Masaryk University.
 - The Course offers a theoretical introduction to the issues of universality, alterity and their mutual compatibility, i.e. the sharing of alterity. This introduction is followed by a moderated guided tour through the different disciplines represented by theoretical and practical specialists of the sub-disciplines.
 - This course is part of the pan-university studies. It means that this course is not restricted to a particular study program, but it is offered to students of any study field and therefore, each student at Masaryk University can enrol at this course and get the basic knowledge on universal design and accessibility.
- Study program Information Services Design at Masaryk University.
 - Information Services Design at the Department of Information Studies and Librarianship of the Faculty of Arts of Masaryk University is a distance undergraduate career-oriented program. During studies, students learn to design information services with today's global societal and environmental challenges in mind. They also meet current and future leaders in the field of information services and immediately apply learning experiences in practice in commercial, non-profit and public services.
 - Several courses, focused solely on accessibility or universal design, are part of this study program.
 - The reason why this programme was ranked as an example of good practice is not only the content of the course itself, but also its design, which respects the principles of accessibility and universal design (teaching materials are offered in an accessible form, videos used in teaching are subtitled, etc.)

- Two courses in the domain of Architecture. At both universities (Brno University of Technology and Technical University of Liberec), courses were found that focused on accessibility. This topic was given above-standard attention compared to some other areas we looked at, especially the domains Health and Welfare and Social Sciences, Journalism and Information, in which we expected much better coverage of accessibility and universal design. In the domain of architecture, specialised courses with descriptive titles (Accessible Architecture and Barrier-free Buildings) were offered to students.
 - Course Accessible Architecture at Brno University of Technology.
 - This course consists of seminars where students will familiarise themselves with the issue of designing public spaces for persons with limited capability of movement and orientation.
 - Course Barrier-free Buildings at Technical University of Liberec.
 - The course includes typological principles for designing all types of buildings in terms of barrier-free accessibility and use of buildings by persons with mobility, visual, hearing and mental disabilities.

Spain

In Spain, Accessibility and Universal Design competences and course content descriptions remain general in most curricula and syllabi, alluding to human rights and respect for diversity and not delving into detail regarding specific applications of accessibility. A few, however, do go into more detail and could act as a basis for ATHENA to assess the main topics that can be covered within Accessibility and Universal Design. Some examples are the following:

- Universal Design syllabus from the Health, Integration and Disability MA (Complutense University of Madrid [CUM12])

This course covers accessibility in a comprehensive manner, with contents on built environment, urbanism, transportation, communication, and tourism accessibility. The course also covers relevant legislation and standards under the theme of “accessibility management”. The broad scope of this course’s content could be replicated for other areas of knowledge, namely: relevant accessibility sector, other areas of application, accessibility management, national accessibility plans and some examples of the promotion of universal design (in Architecture, in Media Accessibility, in Law, in Education, for instance).

- Social Work BA curriculum (University of Huelva [UHU09])

Another example worth mentioning is the introduction of the social model of disability in different areas of knowledge. For instance, in the Social Work BA (University of Huelva [UHU09]) curriculum and its syllabus Social Work and Dependency, some examples can be found in the course content description such as “Barriers or challenges to dependency: inaccessible physical environment, negative attitudes, lack of appropriate technology, services and social policies”, and “Introduction: Disability as a social phenomenon”.

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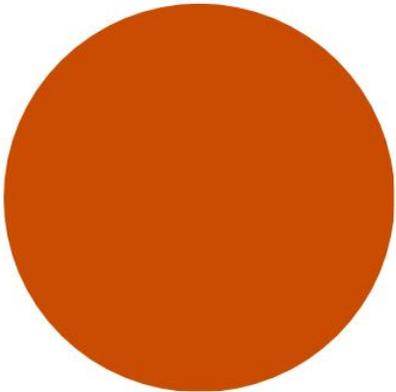
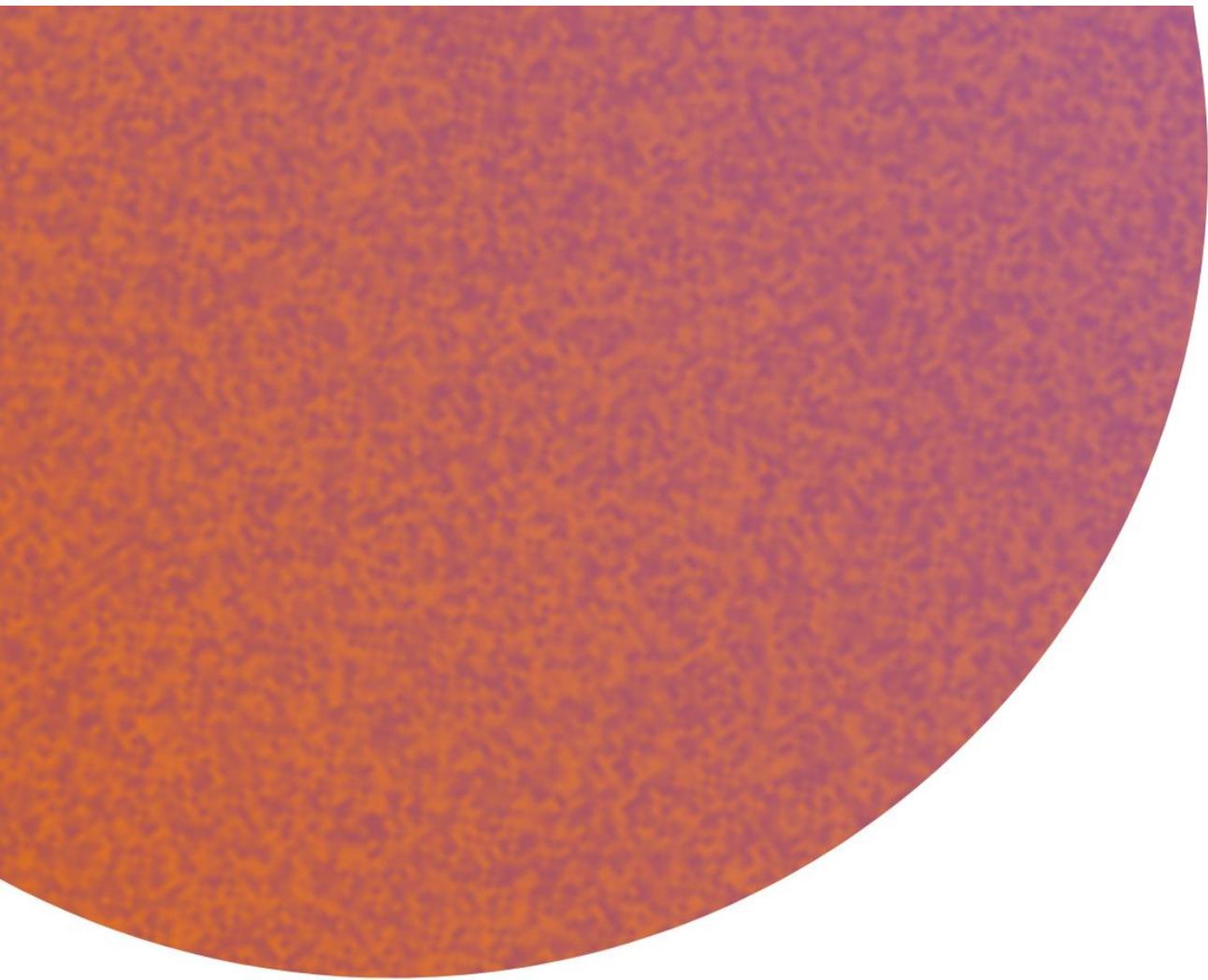
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Additional Resources (List of External Files)

- List of Relevant Domains (ISCED Fields of Education and Training)
- Keywords for keyword search
- Curricula Collection per Country
 - Austria
 - Cyprus
 - Czechia
 - Spain
- Corpus Initial Analysis per Country
(Czechia took a different approach due to national challenges. See “Task 1.2”)
 - Austria
 - Cyprus
 - Spain
- Corpus Results per Country
(Czechia took a different approach due to national challenges. See “Task 1.2”)
 - Austria
 - Cyprus
 - Spain
- Tabular overview of the qualitative content analysis: domains and categories/subcategories
 - Transnational analysis countries combined
 - Transnational analysis per country



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