

CULT STEAM CURRICULUM



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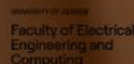
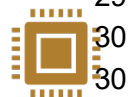
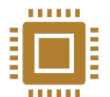


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1. Partners' Description

University of Camerino - Lead Partner and Scientific Responsible

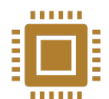
The University of Camerino (UNICAM) is the scientific coordinator of the Erasmus+ Project CULT. The UNICAM team brings extensive expertise in research and education in Computer Science, with particular strengths in business information systems, artificial intelligence, software development technologies, and methodologies and technologies for digital education. Since 1985, UNICAM has offered a Bachelor's Degree in Computer Science. Building on this strong foundation, the university launched a Master's Degree and a PhD program in Computer Science in 2004. These programs provide comprehensive training in key areas aligned with the objectives of the CULT project, ensuring a solid academic and research framework. At UNICAM, approximately 16% of students enrolled in the Computer Science program are female. The university is actively engaged in European research networks and maintains strong collaborations with local, national, and international companies and public institutions. The UNICAM team comprises Prof. Barbara Re, Scientific Coordinator of Project CULT, Prof. Flavio Corradini, and Dr. Fabrizio Fornari.

CONFORM S.c.a.r.l - Partner

CONFORM S.c.a.r.l has been operating since 1995 at national and international level, promoting research projects, training plans, with classroom, experiential and e-learning formats, providing consultancy and technical assistance to businesses and the Public Administration. Over the years it has conceived, designed and produced short films, feature films, web series, commercials, 360 ° virtual tours, interactive videos, documentaries and docufilms, portals, brochures and editorial content in AR, audiovisuals that use the languages of 2D and 3D Cartoons, compositing, Motion Graphics, Motion Capture and Performance Capture, Apps with informative, promotional, technical content, customized to the type of client company, which adopt Holograms, Virtual Reality (VR) and Augmented Reality (AR), and games that act as catalysts to learn about the cultural and/or industrial heritage to be promoted and valorised in national and international contexts, also in terms of tourism development.

Faculty of Natural Sciences of the University of Tirana - Partner

The Faculty of Natural Sciences is part of the University of Tirana (UT), was established in 1957, as the largest and most prestigious public university in Albania. UT consists of six faculties and two institutes and offers 174 programs in all three cycles of study. The institution is known for its strong academic tradition, international collaborations, and contributions to science, culture, and economic development. Currently, the University of Tirana is the largest university in the country. The Faculty of Natural Sciences (FSHN) is a leading institution in Albania for education and research in the natural sciences, including informatics, mathematics, physics, chemistry, biology, biotechnology, and related fields. The Department of Informatics at the Faculty of Natural Sciences, University of Tirana, is a leading academic unit in Albania for computer science and information technology education. It offers programs across all levels of higher education, including Master of Science in Data Science and Artificial Intelligence and Master of Information Systems Engineering, both conducted in English and designed to meet international academic and industry standards. Its academic staff comprises experienced researchers and lecturers with expertise in fields including human-computer interaction, business intelligence, data mining, e-governance, natural language processing, and digital health.



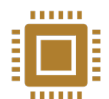
Qendra “SHKENCË DHE INOVACION PËR ZHVILLIM” - Partner

Center for Science and Innovation for Development (SCiDEV), a **Tirana-based think tank**, works to contribute to democratisation, and sustainable social and economic development in Albania and the region in collaboration with partners in the Western Balkans and EU. It focuses on policy and action-oriented research, conducting

studies that inform decision-making processes, influence policy development, and drive advocacy efforts, capacity building, mentoring, and science communication. SCiDEV’s work is organised around four core pillars: (i) **democracy and governance**, where the organisation works to strengthen democratic institutions and promote good governance; (ii) **media and communication**, where SCiDEV is committed to promoting media freedom, supporting independent media, and improving media literacy; (iii) strengthening **research-to-society links**, where SCiDEV facilitates cooperation between research and other social actors through science communication, knowledge brokering, diaspora engagement, networking, project development, and fundraising; (iv) **innovation and digital transformation**, focusing on digital rights, emerging tech, and digital skills. SCiDEV nests the [Network of Albanian Women in STEM](#) which aims to contribute to the social and economic empowerment of women by increasing their representation in STEM, both in academia and industry.

University of Zagreb - Partner

The University of Zagreb, Faculty of Electrical Engineering and Computing (FER-UNIZG) is the largest technical faculty and a leading institution for education and research in electrical engineering, information and communication technology, and computing in Croatia. As a constituent of the University of Zagreb—the country’s flagship educational institution—FER plays a central role in the university’s outstanding research output, which accounts for over half of Croatia’s total. Originating from the Technical Faculty founded in 1919, FER became an independent faculty in 1956 and has since grown into a dynamic academic and R&D hub. It houses extensive facilities including 35 lecture halls, over 60 laboratories, and multiple conference and library spaces across a 43,308 m² campus. FER comprises 12 departments that serve as focal points for its research and teaching efforts, supported by more than 190 professors, 202 teaching and research assistants, and a student body of around 3,300 undergraduates and graduates, along with 326 PhD students. With active involvement in over 250 national and EU-funded projects, FER maintains strong international partnerships, reinforcing its position as a vital contributor to Croatia’s scientific and technological advancement.



Université Côte d'Azur - Partner

Université Côte d'Azur (UCA) is a public university situated on the French Riviera. As a comprehensive institution, UCA is dedicated to providing high-quality higher education and advancing cutting-edge research across diverse academic domains. Université Côte d'Azur has been an experimental university since 1 January 2020 replacing both the Université Nice Sophia Antipolis created in 1965 and the Communauté d'Universités et d'Établissements Université Côte d'Azur created in 2015. Université Côte d'Azur now includes 17 major academic establishments around the historic university core to create one of France's top 10 research-intensive universities. Offering a broad spectrum of undergraduate, graduate, and doctoral programs, UCA serves as an academic hub for students pursuing studies in arts and humanities, sciences, engineering, social sciences, and more. With a commitment to interdisciplinary research, the university actively engages in projects of regional, national, and international significance. The academic community at UCA comprises 3000 dedicated staff members, including academic and administrative professionals, contributing to the institution's vibrant and dynamic environment. The 40 000-student body is diverse, reflecting the range of programs offered and the commitment to fostering a rich learning experience. University Côte d'Azur-UCA created in 2017 a campus in Cannes dedicated to the Cultural and Creative Industry. In 2020, Villa Arson (school of Art), ERACM (regional acting school of Cannes and Marseille) and CIRM (International Center for Musical Research) became members of the university. Consequently, art and culture have become an important component of the university.

Culturalink S.L. - Partner

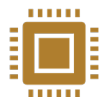
Culturalink is a consultancy established in 2001, with main offices in Valencia and Las Palmas de Gran Canaria, Spain. It specialises in research, analysis, strategic advice, and planning within the cultural and creative sectors. Its core activities include supporting and advising cultural organisations and institutions, analysing and planning public policies, conducting research, and generating knowledge related to culture and creativity. Additionally, Culturalink is dedicated to training cultural managers, technicians, and operators. Over the past two decades, Culturalink and its founders, who bring over thirty years of experience in applied cultural consulting, have built a solid and lasting network of collaborations. The consultancy works closely with leading experts and specialised entities in Spain and across Europe. Notable partners include Econcult (Research Unit in Economics of Culture and Tourism at the University of Valencia), ICC Consultors, and KEA European Affairs, among others. While Culturalink's main activity takes place in Spain and Europe, the organisation has also developed significant expertise in international cultural cooperation. In recent years, Africa has been a key focus area, with projects carried out in Cape Verde, Namibia, Equatorial Guinea, South Africa, Mauritania, and Mozambique. Latin America is another important region where Culturalink has undertaken professional activity, particularly in countries such as Colombia, Bolivia, Cuba, Haiti, Guatemala, and Honduras.

Culturalink's clients include a wide variety of public and private institutions from around the world. Among them are government ministries (e.g., the Ministry of Foreign Affairs and the Ministry of Culture of Spain, and the Ministry of Culture of Honduras), universities (e.g., Popular University of Guatemala, the University of Barcelona, the University of Valencia, and the University of Santiago de Compostela), regional and local governments (e.g., the Government of the Canary Islands, the Generalitat of Valencia, the Spanish Federation of Municipalities and Provinces, the Andalusian Federation of Municipalities and Provinces, and the city councils of Jerez de la Frontera, Valencia, Las Palmas de Gran Canaria, and Alfafar), public agencies and companies (e.g., the Canarian Institute of Cultural Development and the Spanish Agency for International Development Cooperation), as well as foundations and private entities (e.g., the Gabeiras Foundation for Cultural Law, the Fitzcarraldo Foundation, the Fanak Foundation, the Democracy Foundation of Arrecife, the Canary Museum, the Galician Council of Culture, and ICC Consultors).



Universitat de Valencia - Partner

Econcult is a research unit within the Department of Applied Economics at the University of Valencia, officially established in 1999. It has become a national and international benchmark in the field of Cultural Economics. The unit focuses on the study of cultural activities and collective actions that promote cultural and creative sectors, with special attention to social and territorial dynamics related to symbolic value, creativity, and innovation. Our research addresses topics such as cultural policy, culture and development, creative territories, music, publishing, theatre, heritage, museums, and language economics. Over the past two decades, our work has confirmed that cultural and creative activities—whether market-based or not—have a transformative potential for individuals and territories. They contribute to development by securing cultural rights while also enhancing the structural conditions for economic growth. Econcult is coordinated by Professor Pau Rausell and includes a wide network of university researchers and external collaborators. Since 2007, Professor Raul Abeledo has led the unit's European project development. The group regularly collaborates internationally, especially in Europe and Ibero-America, and often hosts visiting scholars from around the world.



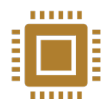
2. Introduction

Growing cultural interconnectedness requires multidisciplinary skills integrating different traditions, values, and approaches. The convergence of **art, culture, and technology** addresses multiple educational needs and presents transformative opportunities for both students and educators. In particular, an education that blends art, culture, and technology prepares students to work in international environments and navigate diverse cultures, solving complex problems with a global and inclusive vision. **Art and culture** stimulate creativity, innovation, and divergent thinking, while **technology** provides tools to amplify these capabilities. Integrating these disciplines can enhance critical thinking, encouraging students to think interdisciplinarily and solve problems creatively.

More deeply, **art and culture** should not be considered separate from technology: digital creation, multimedia production, the use of creative software, and interaction with immersive technologies (such as augmented reality and virtual reality) offer new expressive possibilities. Students learn to combine artistic and technical skills, creating visually stimulating and technologically advanced works. **Technology** has the potential to break down physical and cognitive barriers, making education more accessible to a broader variety of students. Digital platforms can create personalised learning experiences that adapt to each student's needs, using art to foster individual expression and culture to expand self-understanding and understanding of others.

The Learning Path, implemented as STEAM 'CULT' CURRICULUM containing the macro-design of the content, didactic, methodological and instrumental aspects, was developed, within Project Result 1, as a result of two critical outcomes:

- COMPARED DESK ANALYSIS carried out by the HEIs involved to identify similar training programmes for trainers and to identify the constitutive elements of the programme proposed by TEST.
- FIELD ANALYSIS conducted in the context of the partnership through Focus Groups (FG), to deepen the analysis and to detect latent needs that have not previously emerged.



3. CULT Vision

3.1 Merging of art, culture, and technology

Students **must learn to manipulate advanced technologies such as Virtual and Augmented Reality and Artificial Intelligence** to be prepared for the workforce. However, the technological approach should not only be technical: art and culture offer a universal language that can be used to tell stories, evoke emotions, and drive social innovation, enabling students to humanise technology and apply it to complex contexts. Creative challenges can push students to think outside the box, finding unique solutions to complex problems.

At the same time, the increasing adoption of Artificial Intelligence highly influences such a scenario can be used to develop immersive learning environments through technologies like **augmented reality (AR)** and **virtual reality (VR)**. For example, history or art students can explore historical reconstructions, virtual museums, and even participate in interactive artistic simulations. These experiences not only facilitate visual and tactile learning but also stimulate creativity, innovation, and collaboration among students.

Artificial intelligence can be used to generate artistic and cultural content through creative algorithms, such as automatic music generation, generative artwork, or even creative narratives based on specific inputs. Students can use these tools to explore new forms of expression, enriching their artistic experience with the use of technology.

AI can encourage intercultural collaboration between students from different countries by supporting multilingual communication through automatic translation. This promotes a more inclusive learning environment where students from different languages and cultures can work together, enriching the educational experience with diverse viewpoints.

Additionally, AI tools can help students with disabilities to participate actively by creating more accessible environments, such as automatic subtitles, text-to-speech, and customised interfaces that adapt to each student’s specific needs.

3.2 Curriculum and Gender Opportunity

The curriculum of the CULT project must respond to the challenges of the digital society and gender equity needs, creating opportunities for women to access STEM disciplines with a strong connection to culture, art, and technology. By adopting an innovative and interdisciplinary approach, the curriculum must train professionals and/or entrepreneurs capable of addressing both the contemporary challenges related to digitalisation and the evolution of the creative and cultural industries and responding to emerging social and ethical questions.

The added value of an approach that integrates art, culture, and technology to support female students in their entry into the job market, particularly in creative and cultural enterprises is based on the following pillars:

1. **Empowerment through Creativity and Technology.** The integration of culture and creativity into technology allows female students to develop an innovative mindset, which can be crucial for promoting cross-cutting and interdisciplinary skills. This makes them more suited to roles in creative and cultural enterprises, where the ability to adapt to advanced technologies while maintaining a strong connection to cultural heritage and creativity is essential.



2. **Development of Digital and Creative Skills.** The curriculum should prepare students for highly skilled roles in creative and cultural industries. Training in advanced technologies such as programming for digital art, the use of creative software, augmented reality (AR), virtual reality (VR), and artificial intelligence (AI) for content generation is essential for women's entry into a job market that rewards innovation and creativity.
3. **Access to Global Opportunities.** Promote experiences in which students can work on international projects encourage collaboration between students of different nationalities. An result could be the creation of virtual museums or interactive digital art platforms that explore the culture of different regions of the world.
4. **Building a Flexible and Dynamic Career in Creative Work.** This allows students to acquire advanced artistic and technological skills, which provide a competitive differentiator that supports their entry into a job market that rewards innovation. For example, encourage students to create digital art startups or design cultural applications that combine technology and art to meet market needs.

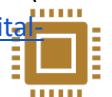
4. Compared the Desk Analysis on the involved countries

4.1 Related CULT in Italy

Italy has a rich cultural heritage and a strong artistic tradition. In recent years, government initiatives and academic programs have increasingly fostered the integration of art, culture, and digital technologies, aiming to prepare professionals capable of combining creativity, cultural knowledge, and technical skills.

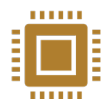
Considering the Italian governmental initiatives, several policies promoted by the Ministry of Culture (MiC) and the Ministry of University and Research (MUR) support the digital transformation of cultural heritage and interdisciplinary education:

- National Plan for the Digitalization of Cultural Heritage (PND, 2022–2026): Provides guidelines for museums, archives, libraries, and archaeological sites to digitize, describe, and make collections accessible online. Beyond preservation, it encourages creative reuse of cultural data for education, interactive museums, videogames, and 3D reconstructions;
- Dicolab – “Cultura al Digitale”: Offers online courses, MOOCs, workshops, and seminars on digital heritage, immersive technologies (VR, AR, 3D), digital storytelling, and intellectual property. These initiatives train museum professionals and students in applied digital skills (Sources: <https://dicolab.it/> <https://digitallibrary.cultura.gov.it/notizie/online-un-nuovo-corso-sulla-digitalizzazione-del-patrimonio-culturale/>)
- PNRR Investment 3.4 – Advanced University Teaching and Skills: Creates Digital Education Hubs (DEH) as multidisciplinary laboratories for VR, gamification, and interactive platforms, alongside doctoral scholarships and digital teaching infrastructures. (Source: <https://www.mur.gov.it/it/pnrr/misure-e-componenti/m4c1/investimento-34-didattica-e-competenze-universitarie>);
- Mentoring Program “Digital Humanities Design”: aims to define and strengthen the Digital Humanities Designer role, fostering collaborations between museums, research centers, and universities. (Source: <https://cultura.gov.it/evento/italia-capitale-prima-tappa-del-progetto-del-mentoring-program-digital-humanities-design-di-reginae>).



Considering the national academic programs, Italian universities offer a variety of Bachelor’s and Master’s programs that combine art, culture, and technology, preparing students for careers in digital heritage, immersive media, gaming, and cultural management:

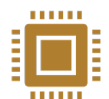
Programme	Description
Master in Digital and Immersive Technologies for Art and Culture Treccani Accademia	Provides solid skills to design, develop, and implement digital cultural projects using video games, video mapping, AI, augmented and virtual reality. Courses include web development, generative AI, digital exhibitions, holograms, cultural/tourism game design, and immersive AR/VR programming, with case studies such as the National Cinema Museum of Turin https://treccaniaccademia.it/master/tecnologie-digitali-immersive-arte-cultura/?utm_source=facebook&utm_medium=post_paid&utm_campaign=ex_tecno_arte_2025_BF&utm_id=120223060170640315_v2_s11_e7232_sp_111&utm_content=120223060170680315&utm_term=120223060170650315
Master’s Degree in Digital and Public Humanities Ca’ Foscari University of Venice	A multidisciplinary programme combining humanities with computer science. Students learn IT, visualization, data science, web and UX design, as well as digital tools for literature, linguistics, history, archaeology, law, and art. Includes modules in digital art, virtual archaeology, digital heritage, and museum studies https://www.unive.it/data/en/6748/digital-and-public-humanities-fm11-20-24
Master’s Degree in Digital Cultural Heritage Uninettuno University	Focuses on digital applications to cultural heritage. Covers computer science, literary, historical/artistic, archaeological and archival studies in a digital context, along with historical-legal competences for heritage preservation and communication https://www.ateneionline.it/corsi-di-laurea-online/laurea-magistrale-lm-43-patrimoni-culturali-nell-era-digitale-uninettuno/
Master’s Degree in Design & Engineering Politecnico di Milano	Jointly developed by design and engineering departments, it trains professionals to merge design culture with engineering skills. Focus areas: design and industrial production, advanced materials, digital prototyping and representation, and the impact of new technologies on manufacturing https://design-engineering.polimi.it/#disciplines
Bachelor’s Degree in Information Engineering for Videogames and Virtual Reality Università Politecnica delle Marche	A three-year programme focused on the engineering of videogames and VR applications. Provides skills in programming, graphics, multimedia systems, and immersive interactive technologies https://www.univpm.it/Entra/Offerta formativa 1/Offerta formativa 2/Corso di laurea triennale in Ingegneria dell informazione per videogame e realta virtuale



<p>Bachelor’s Degree in Communication Sciences Curriculum in Videogame Design and Production Link Campus University</p>	<p>A three-year programme providing theoretical and practical skills for the videogame industry. Focuses on game design, production processes, 3D graphics, interactive storytelling, and the business side of the gaming sector https://www2.unilink.it/laurea-triennale/scienze-comunicazione/videogame-design-production.asp</p>
<p>Master’s Degree in Digital Humanities and Digital Knowledge University of Bologna</p>	<p>International two-year programme integrating humanities and information sciences. The first year covers shared foundations; the second year offers specialization paths in digital cultural heritage, interactive systems, and knowledge representation https://corsi.unibo.it/2cycle/DigitalHumanitiesKnowledge</p>
<p>Master’s Degree in Digital Heritage: Museums, Archives and Libraries University of Bari</p>	<p>An interclass degree combining archival, library, and museum studies with computational methodologies. Aims to train professionals in digitization, creative digital heritage projects, and digital curation. Interdisciplinary curriculum spanning historical, legal, artistic, linguistic, and technical areas https://www.uniba.it/it/corsi/patrimonio-digitale-musei-archivi-biblioteche</p>
<p>Master’s Degree in Digital Humanities, Interactive Systems and Digital Media University of Genoa</p>	<p>Focuses on interactive systems, creative digital production, affective computing, and cultural welfare. Includes courses in VR/AR, human-computer interaction, multimedia design, and digital media applications for culture and the arts https://corsi.unige.it/corsi/11945</p>

4.2 Related CULT in Albania

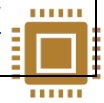
The Albanian government’s National Strategy for Education (2021–2026) explicitly prioritizes digital transformation and innovation in higher education. This strategy, adopted in 2021, aligns with broader national “Digital Agenda” policies and EU recommendations. Universities in Albania are deeply involved in cultural studies and heritage preservation through specialized programs and research. The University of Tirana’s Faculty of History and Philology offers degrees at all levels in Archaeology and Cultural Heritage – including a Bachelor’s, two Master’s programs (in Archaeology and in Cultural Heritage), and even a doctoral school. These programs train students in both the tangible and intangible aspects of heritage, from monuments and artifacts to language and traditions. In addition, the University of Shkodër “Luigj Gurakuqi” hosts an interdisciplinary Master of Arts in Cultural Heritage Studies (developed in partnership with Central European University), focusing on heritage policy, management, and research.



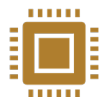
The University of Arts in Tirana is Albania’s primary higher education institution dedicated to the fine, performing, and applied arts. It offers a broad spectrum of academic programs at the Bachelor, Master, and PhD levels through its three main faculties: the Faculty of Visual Arts, the Faculty of Music, and the Faculty of Dramatic Arts. These faculties provide comprehensive training in fields such as painting, sculpture, graphic design, multimedia arts, acting, directing, stage design, music composition, musicology, etc. In recent years, the University of Arts has made significant efforts to integrate technology into its art education. Within the Faculty of Visual Arts, the programs in Multimedia and Applied Design are particularly notable for their incorporation of digital tools and platforms. Students gain exposure to digital illustration, video editing, animation, and interactive media, allowing them to merge traditional artistic disciplines with new media technologies. The university also promotes interdisciplinary exploration, where the boundaries between art, culture, and technology are increasingly fluid and interconnected.

In addition, Informatics Department in Faculty of Natural Sciences, Tirana University has launched a Master of Science in Data Science and Artificial Intelligence. This two-year program is conducted in English and encompasses 120 ECTS credits. It aims to equip students with advanced skills in data analysis, machine learning, and artificial intelligence, blending theoretical knowledge with practical applications through real-world projects and master thesis.

Programme	Description
Master of Science in Cultural Heritage - Tirana University	MSc with 120 credits focused on archaeology and cultural heritage tied an elective subject related to the Computer applications in the management of cultural heritage. https://fhf.edu.al/en/departamentet/departamenti-i-arkeologjise-dhe-trashegimise-kulturore/
Double MSc in Natural Language Processing (Tirana University & Sorbonne Paris Nord)	A double-degree programme at the intersection of linguistics, computer science and Information Engineering and Artificial Intelligence I (NLP), aimed at training specialists for digital text processing and cultural/linguistic data work. (https://fgjh.edu.al/degree-tilde/)
MSc in Journalism & Communication (Tirana University)	Two-year MSc offering profiles that include subjects in digital media production, design and marketing in social media and web. https://fhf.edu.al/en/master-i-shkencave-ne-gazetari-dhe-komunikim
Professional Master in Multimedia & Digital Television (UAMD)	One-year professional master focused on digital media/TV production , modern broadcast technologies and content creation—skills transferable to cultural/creative sectors. https://uamd.edu.al/en/multimedia-dhe-televizion-digjital-2/



<p>Master of Arts in Multimedia Painting & Teaching (University of Arts, Tirana)</p>	<p>Master in multimedia (visual/digital arts) develops contemporary creative practice using mixed and digital media. (artacademy.al)</p>
<p>Bachelor in Graphic Design (UNYT)</p>	<p>Three-year design degree with focusing on graphic design with five subjects in history/theories of architecture, art and urban design. (https://int.unyt.edu.al/programs2/graphic-design/)</p>



4.3 Related CULT in France

At the present time, in 2024, there is no global strategy or large-scale public policy in France to hybridize the arts and sciences for the benefit of science education.

The last parliamentary report (1) on the dissemination of scientific culture dates from 2014. This report, produced by a member of parliament and a senator, on behalf of the parliamentary office for the evaluation of scientific and technological choices, is entitled "Making scientific, technical and industrial cultures known and shared: an imperative". It identifies digital tools as an opportunity and the arts as a potential lever. However, among the 79 proposals in the report, only one proposes "encouraging an introduction to science and technology through experimentation and the arts" but only in nursery school.

A 1998 report (2) took stock of the situation and made proposals concerning the relationship between Art, Science and Technology. But its comments only concerned research and not the teaching of science.

It should also be noted that the current national strategy for Scientific, Technical and Industrial Culture does not mention the arts as a lever for science education or the dissemination of scientific culture.

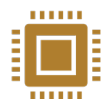
However, there are many initiatives to link Arts & Technology. For example, we can mention:

✕ At the research level

A national strategy from the Ministry of Culture managed through calls for projects. Since 2017, the dissemination of scientific research has been a priority for the government, which devotes just over 10 million euros to it annually. The Ministry of Culture thus funds collaborations between artists and researchers each year. Born from the desire to bring researchers and creators together, to invent new forms, to meet new audiences and even to go beyond the imposed framework of aid for creation, this support system is part of the Research Programming Law which aims to better disseminate scientific knowledge and which obliges the National Agency for Research to release 1% of its budget each year. Thus, since 2017 the Ministry of Culture has had an allocation of 160,000 euros per year to finance joint research projects between theatre artists and researchers. Building on its success with both artists and scientists, this call for projects "Research in Theatre and Associated Arts", from annual, becomes biennial from 2024.

There are also many local initiatives for scientific conferences, including those of the National Center for Scientific Research, the main research operator in France. Several universities have research laboratories on art and technology (Aix Marseille University, Paris Panthéon Sorbonne, University of Strasbourg, Côte d'Azur University, etc.). There are also numerous research programs and even chairs on the theme of Arts & Sciences in French universities. For example, Université Côte d'Azur organizes annual "Art and Science" days. These days offer the public an immersive experience where art and science merge to give birth to innovative projects. In 2025, the workshops offered included:

- Capture of musical gestures, models and experiences
- Painters' workshops: writing and pigments (mathematics, spectrography)
- Analysis of dance movement: the contribution of AI
- Editing the dance of the past: bodies, writings and digital humanities
- Women in Voice: Italian Women at the Forefront of the Public Stage between the 19th and 20th Centuries



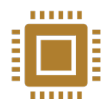
✕ At the pedagogical level

Several Bachelor's and Master's degree programs leading to careers in the cultural and creative industries exist. There are too many to list exhaustively. Some have significant technical and scientific aspects.

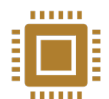
For example, Université Côte d'Azur has created a thematic campus dedicated to cultural and creative industries in Cannes (Georges Méliès campus). The courses offered include video game creation, scriptwriting, digital content creation, and sound design. On the same campus, there is an audiovisual school, a dance school, and a film acting school, a creative industry business incubator, as well as TV and radio studios.

But the point here is to use science and technology in training leading to artistic creation and not the other way around. In the opposite direction, that is, using the arts as a lever for learning science and technology, we observe only local and one-off initiatives. This is what makes the CULT project so interesting.

Table 1. Examples of Programs in France that Merge Art, Culture, Humanities, and Technology



Program	Description
Master Degree in Humanities and Creative Industry (Université Technologique de Compiègne-UTC)	A 2-year program 120 ECTS that offers an original approach to technological design, combining design methods with theoretical contributions from the human and social sciences. https://www.utc.fr/formations/diplome-de-master/mention-humanites-et-industries-creatives-hic/
Master Degree in Humanities and Creative Industry (Université Côte d’Azur- UniCA))	A 2-year program 120 ECTS that trains students in the creation, production, and marketing of creative content for new digital uses. It prepares them for careers in the creative industries, particularly by having them work in teams and on projects. They acquire a rich culture as well as mastery of digital tools. https://univ-cotedazur.fr/formation/offre-de-formation/master-humanites-et-industries-creatives
Master Degree in Digital Creation for Arts & Culture (Université de Toulon – UTLN)	A 2-year 120 ECTS program that aim to train young professionals combining creative and technical potential in the field of image and sound, a strong visual and sound culture (multi-modal semiologies, aesthetics of interactivity and generativity, etc.) as well as knowledge of the world of art and digital creation. https://formations.univ-tln.fr/fr/offre-de-formation/master-XB/master-creation-numerique-LOBJRPJ3/master-creation-numerique-parcours-art-culture-et-numerique-creation-de-contenus-LPBB4IE4.html
Master Degree in Digital Creation for Arts & Culture (Université de Toulouse 2)	The diploma (2 years, 120 ECTS) aims to develop innovative practices within a creative approach, in relation to contemporary issues. It anticipates emerging professions in the fields of art, industry, research, and development. It is open to practices involving images, whether in situ or remotely via a network, objects, products, installations, services, and live performance. https://www.univ-tlse2.fr/accueil/formation-insertion/master-arts-et-technologies



<p>Bachelor in Multimédia and Internet for Digital Creation (Université de Caen)</p>	<p>The digital creation program (3 years, 180 ECTS) aims to develop the expression of messages across different media, in the form of graphic design and multimedia writing. It allows students to acquire the techniques necessary for the creation of digital resources, particularly web publications. It primarily prepares them for careers as designers, graphic designers, game designers, or audiovisual technicians. https://www.stlo.unicaen.fr/mmi/programme/</p>
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References

- (1) = « Faire connaître et partager les cultures scientifique, technique et industrielle : un impératif », Office parlementaire d'évaluation des choix scientifiques et technologiques, n°1690 & n°274, Auteurs : Mme Maud OLIVIER, députée, et M. Jean-Pierre LELEUX, sénateur
- (2) = « Art – Sciences – Technologie », Jean-Claude Risset , Chargé de mission du Ministre de l'Éducation Nationale, de la Recherche et de la Technologie, 1998

4.4 Related CULT in Spain

Spain’s higher education system is structured to foster interdisciplinary learning, in line with the global trend that integrates art, culture, humanities, and technology. According to the Organic Law of the University System (LOSU by its acronym in Spanish), universities are responsible for creating, developing and disseminating scientific, technological, social, humanistic, artistic, and cultural knowledge. Furthermore, they are responsible for equipping students with the skills necessary to engage in professional pursuits that fuse artistic creativity and scientific methodology.

In the non-university domain, the Organic Law on Education (LOE) regulates advanced vocational training and artistic education, encompassing disciplines such as visual arts, design, music, dance, and dramatic arts. These programmes promote an entrepreneurial mindset and lifelong learning.

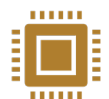
More specifically, the recent Law 1/2024, of June 7, which regulates higher artistic education, introduces academic programmes in fields such as audiovisual arts and establishes "Art Campuses" to foster institutional collaboration. This law aligns artistic education with the European Higher Education Area (EHEA), grants equivalency to higher artistic studies with university degrees and incorporates them into the Spanish Qualifications Framework for Higher Education (MECES, by its acronym in Spanish), thereby ensuring compatibility across Europe.

Overall, the artistic sector in Spain represents a vital component of the national economy and cultural identity. According to data from the Ministry of Education, Vocational Training and Sports, the sector has an impact on over 140,000 students and 14,000 educators, employing approximately 690,000 individuals and contributing 3.3% to Spain’s Gross Domestic Product (GDP).

Academic interdisciplinary programmes

Spain offers a wide range of academic programmes that integrate art, culture, humanities, and technology. These programmes prepare students for careers in fields such as digital humanities, digital heritage, cultural management, video game design and immersive technologies. Some selected examples are presented in Table 1.

Table 1. Examples of Programs in Spain that Merge Art, Culture, Humanities, and Technology



Programme	Description
Bachelor in Science, Technology, and Humanities (UAM, UC3M, UAB)	A four-year, 240 ECTS credit programme jointly offered by the Autonomous University of Madrid, Carlos III University of Madrid and the Autonomous University of Barcelona. It focuses on the intersection of science, technology, and the humanities, including courses such as "Art, Science and Technology" and "Culture and Technology."
Bachelor in Computer Animation and Video Game Technologies Engineering (Universidad San Pablo CEU)	A four-year programme taught in Spanish that trains students in computer animation and video game technologies, covering programming, 3D modelling, and game development.
Master in Digital Humanities (UPV)	A one-year, 60 ECTS credit programme taught in Spanish, integrating social and cultural knowledge with technological innovation through modules such as "Humanities and Innovation" and "Digital Transformation of Heritage."
Master in Digital Cultural Heritage (UDC)	A one-year, 60 ECTS credit programme focused on computer graphics, game development, and virtual reality, preparing students for careers in the digital animation and gaming industries.
Master in Computer Graphics, Games and Virtual Reality (Universidad Rey Juan Carlos)	A one-year, 60 ECTS credit programme specialising in computer graphics, game development, and virtual reality, aimed at preparing students for careers in digital animation and video game design.

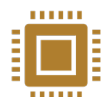
Source: The Spanish Ministry of Education and own elaboration.

This study highlights the essential role of artistic education in cultivating key competencies for both personal and professional success. Integrating the arts into educational curricula—commonly framed under the STEAM paradigm (Science, Technology, Engineering, Arts, Mathematics)—fosters creativity and accommodates diverse learning styles. For example, the Master’s in Digital Humanities at the Universitat Politècnica de València encourages students to apply digital tools creatively within cultural contexts, promoting innovative approaches to heritage management.

In addition, sustained engagement with the arts is associated with higher academic achievement and prosocial behaviour. The Bachelor's Degree in Science, Technology, and Humanities promotes the critical analysis of the cultural implications of technological development, and the Master’s Degree in Digital Cultural Heritage at the Universidade da Coruña enhances empathy through the preservation of cultural memory.

Furthermore, art education further strengthens communicative abilities by encouraging expression across multiple modalities. Programmes such as the Master’s in Interaction Design and Extended Reality at IED Barcelona emphasise user experience and interaction design, whereas the Master’s in Narrative Design and Game Studies focuses on storytelling, equipping students to communicate complex ideas through creative forms.

Backed by recent legislative reforms and a growing body of research on the integration of the arts, Spain’s higher education system is evolving to align with global trends by incorporating technological competencies into artistic and cultural education. Organic Law 1/2024 promotes institutional autonomy, facilitating a deeper integration of technological dimensions into artistic curricula. The aforementioned programmes exemplify this interdisciplinary orientation, equipping graduates with the skills needed for careers in digital humanities, cultural management, and immersive design.



At the European level, higher artistic education exhibits considerable heterogeneity in terms of its institutional integration and recognition. Germany and the United Kingdom, for instance, have long-standing, prestigious institutions such as the Universität der Künste Berlin and the Royal College of Art in London that have formally recognised artistic education as part of their university systems for decades. In contrast, Spain has only recently moved towards equivalence through Organic Law 1/2024, which brings higher artistic studies into line with the EHEA and promotes the creation of dedicated "Art Campuses" (Ministry of Education, Vocational Training and Sports, 2024). While this legislation marks a significant step forward, Spain remains in a phase of institutional consolidation, particularly when compared to countries where artistic disciplines have long held university status (ERAM, 2023).

Quantitatively, Eurostat data show that in 2022, 27.9% of European higher education students enrolled in culture-related fields were pursuing artistic disciplines, with Ireland recording the highest proportion at 58%. In 2020, Spain had 25,202 arts and humanities graduates, compared to 48,145 in Italy, 45,112 in France, and 22,664 in Germany (Eurostat, 2023). While Spain’s absolute numbers are not negligible, these figures suggest that the proportional weight and structural integration of artistic education within the university system still lag behind other major European countries.

4.5 Related CULT in Croatia

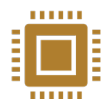
Croatia’s higher education system is designed to support interdisciplinary learning by integrating the arts, sciences, humanities, and technology. Governed by the Act on Scientific Activity and Higher Education, the system includes universities, faculties, art academies (*umjetničke akademije*), polytechnics, and colleges of higher

education. These institutions are authorized to conduct educational, scientific, professional, and artistic activities across all levels of study ([Ministry of Science and Education](#)).

Art academies in particular play a central role in Croatia’s academic and cultural landscape. They provide university-level studies in the arts and contribute to cultural development and humanistic research. Additionally, they are empowered to offer professional artistic programs, expanding the country’s interdisciplinary education capacity.

Recent developments indicate a shift towards more integrative programs combining artistic creativity with scientific and technological expertise. This evolution reflects Croatia's alignment with global education trends that prioritize innovation, creativity, and problem-solving through a cross-disciplinary approach.

Programme	Description	Level
Art, Science and Health – University of Zagreb	A graduate programme at the Academy of Fine Arts that explores artistic research, pedagogy, and experimental art in relation to health humanities. Includes regional collaboration with institutions in Greece and Serbia. https://www.alu.unizg.hr/alu/cms/front_content.php?idart=2968&idcat=374&lang=3	MA



<p>New Media Design – RIT Croatia</p>	<p>A multidisciplinary program that fuses design, computing, and technology. Prepares students for careers in UX/UI and digital media, offering dual American and Croatian degrees. https://www.rit.edu/croatia/new-media-design-bfa</p>	<p>BFA</p>
<p>Applied Cognitive Science – University of Zagreb</p>	<p>Jointly run by the Faculty of Humanities and the Faculty of Electrical Engineering and Computing, this program investigates the human mind through an interdisciplinary lens including AI, psychology, and linguistics. https://cogsci.ffzg.unizg.hr/</p>	<p>MA</p>
<p>Creative Market Communications Management – Algebra Bernays University, Zagreb</p>	<p>Focuses on communication, branding, and media industries, with a strong emphasis on cross-sectoral skills and digital tools. https://www.algebra.hr/sveuciliste/en/graduate-study-programmes/creative-design-management/</p>	<p>MA</p>
<p>Redesigning the Post-Industrial City – University of Zagreb</p>	<p>Combines architecture, urban studies, spatial data science, and social sciences to explore post-industrial transformations and spatial justice. https://unic.eu/en/repic#all</p>	<p>MA</p>

This expansion of interdisciplinary education reflects Croatia’s efforts to respond to global trends and local needs. For instance, the Art, Science and Health programme fosters collaboration between artists and health professionals, while the New Media Design programme equips students to build interactive technologies through a creative lens.

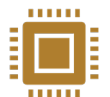
According to the Croatian Bureau of Statistics, 2.3% of higher education graduates in 2021 completed studies in the arts, compared to 42.7% in social sciences and 25.6% in engineering. While the proportion of arts graduates remains modest, this highlights the growing, albeit still niche, role of the arts in higher education (Croatian Bureau of Statistics, 2022).

Moreover, many of these programmes embrace the STEAM paradigm (Science, Technology, Engineering, Arts, Mathematics), emphasizing creativity, communication, and interdisciplinary problem-solving. The programme in Cognitive Science, for instance, fosters both analytical and empathetic competencies by blending AI, psychology, and philosophy.

From a policy perspective, Croatia’s alignment with the European Higher Education Area (EHEA) ensures academic mobility and degree recognition across Europe. The Study in Croatia portal provides detailed information on accredited interdisciplinary and English-taught programs, which can be accessed here: <https://www.studyincroatia.hr/study-in-croatia/what-to-study/>



Croatia’s higher education sector is progressively embracing interdisciplinarity as a way to foster innovation, cultural relevance, and global competitiveness. Through new academic programmes and institutional frameworks, it is building a foundation for a more adaptive and cross-cutting education system—where the arts are integrated with scientific and technological competencies in pursuit of societal well-being and sustainable development.



5. Field Analysis Procedure

To validate the draft version of the **C.U.L.T. curriculum**, a series of **validation workshops** were organized in the form of **Focus Groups** across the five partner countries: **France, Italy, Croatia, Spain, and Albania**. The main aim was to confirm the curriculum’s relevance, gather feedback from key stakeholders, and collect insights on current and future educational needs to support the final version.

In total, **80 participants** took part in the workshops: **26 academics, 38 students** (mostly female), and **16 representatives from enterprises and cultural or creative industries (CCIs)**, meeting the project’s KPI targets.

The places and dates of the workshops are presented in the following Table

Country	Partner Organization	Date of Conduct	Place of Conduct
Spain	Econcult - Culturalink	03.07.2025.	Universitat de València
France	Côte d'Azur University	18.07.2025.	UniCA Institute of Technology & Online
Croatia	Faculty of Electrical Engineering and Computing, University of Zagreb	14.07.2025.	Faculty of Electrical Engineering and Computing
Albania	Tirana University	10.07.2025.	Faculty of Natural Sciences
Italy	University of Camerino	15.07.2025.	Camerino - Online

The questions asked during the focus groups were:

1. In your opinion, what is the role and importance of merging art, culture, and technology in Higher education institutions?
2. Have you ever come to them in practice? If yes, what can you tell us about it? If you have never used it, how come? What held you back?
3. What digital areas are more appropriate to be combined with art and culture?
4. What specific skills should be developed in this respect to maximise the impact of such a curriculum and achieve better results?
5. Would you like to add anything else on this subject, or do you have any other general considerations regarding the C.U.L.T. Curriculum?

Across all partner countries, participants unanimously agreed on the importance of merging Art, Culture, and Technology (ACT) in Higher Education. They considered this integration not only relevant but essential to modern academic and professional development. In Spain and Albania, over 85% and 92% of respondents respectively emphasized its urgent necessity, while other countries linked it to employability, heritage preservation, and critical thinking.



However, despite this strong recognition, a clear implementation gap emerged. Most participants reported

that their institutions still lack proper interdisciplinary structures, updated curricula, and institutional support. Integration efforts are often fragmented, with barriers such as limited staff training, outdated programs, or insufficient collaboration between faculties.

In terms of digital areas, there was strong consensus around technologies that enhance cultural preservation and creative innovation. Participants identified AI for Digital Heritage, XR/VR, gamification, digital storytelling, and 3D immersive tools as the most relevant domains. These were viewed as directly connected to real market needs and to the future of cultural and creative industries.

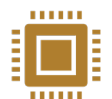
Regarding skills development, the focus shifted from purely technical skills to a balanced combination of technical proficiency, critical thinking, project-based learning, and entrepreneurial abilities. Participants stressed that the curriculum must foster real-world ecosystems, promote employability, and develop user-centric and ethically grounded technological practices.

Overall feedback on the C.U.L.T. curriculum was highly positive. It was widely described as visionary, innovative, and timely, though several refinements were recommended: ensuring balance between technical and cultural content, extending the duration of some modules, including more ethical and pedagogical aspects, and clarifying student entry profiles (humanities vs. STEM).

The validation workshops confirmed that integrating Art, Culture, and Technology within Higher Education Institutions is not only desirable but necessary. In particular, three key conclusions emerged:

1. **Bridging the Implementation Gap:** there is a shared need for structural and pedagogical innovation to enable true interdisciplinary education. The C.U.L.T. curriculum offers a concrete framework to address these shortcomings.
2. **Alignment with Professional Employability:** The curriculum must go beyond theoretical concepts, equipping students with technical, creative, and entrepreneurial skills demanded by the evolving digital and cultural job market.
3. **A Visionary, Yet Customizable, Foundation:** The C.U.L.T. curriculum proposal was met with enthusiasm as a visionary and well-structured concept. While participants endorsed the overall mission, they called for the final version to be flexible and customizable allowing for deep dives into specific modules and ensuring a better balance between advanced technical training and rich cultural context.

In conclusion, the Focus Group results validate the C.U.L.T. curriculum as a strategic and essential tool to modernize Higher Education, bridge systemic gaps, and prepare future professionals capable of humanizing technology through art and culture.



6. Higher Education Curriculum

The proposed Curriculum is organized in the following modules according to the CULT vision:

- Digital Technologies for Cultural Heritage
- Technologies for Extended Reality
- Web 3D and Immersive Communication
- Artificial Intelligence for Digital Heritage Innovation
- Video-game Design and Development for Cultural Heritage
- Inclusion of girls in Technology

Each module can consider the following learning dimensions.

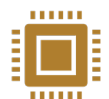
- Cognitive (learning by thinking) is to be used in a blended mode, mixing classroom seminars and e-learning with Open Educational Resources on gaming and gamification, with distinctive creativity skills and art-inspired innovation.
- Operational (learning by doing) with workshop sessions held by the teachers/trainers/experts of the partnership beneficiaries of the mobility to support the students in the conception, design and implementation of gamified and interactive digital solutions, able to exploit the potential of technology to enhance the experience factors in cultural fruition and to train, inform and raise awareness of culture in diversified user ranges in a challenging way.
- Behavioural (learning by acting), through a session of work-based learning, carried out in companies of cultural promotion and communication, production of edutainment and/or digital solutions partners and/or involved in the partnership, where the students will be called upon in the first person to face and solve real problems of a relational, negotiation, design, management and technological nature, making themselves protagonists of the entire implementation process of the digital solutions.

6.1 - Digital Technologies for Cultural Heritage

6.1.1. Module Description

This module explores the role of digital technologies in the documentation, preservation, communication, and enhancement of cultural heritage. Students will develop a critical understanding of how digital tools can be strategically applied in the cultural sector to increase accessibility, foster engagement, and support preservation. Emphasis is placed on the design of digitization projects tailored to specific heritage contexts, including the selection and evaluation of appropriate technologies and methods.

Duration: 20 hours

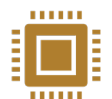


6.1.2. Learning Objectives

- **Understanding Cultural Heritage:** Introduction to the concept and scope of cultural heritage, exploring its tangible and intangible dimensions. Examine how heritage embodies identity, memory, and social values within different cultural contexts.
- **Understand Digital Heritage:** Understand the challenges and opportunities in the digital communication of tangible and intangible cultural heritage.
- **Technologies and standard protocols in Digital Heritage:** Gain foundational knowledge of key technologies (e.g., 3D scanning, GIS, photogrammetry, digital storytelling, AR/VR) and learn how they support heritage digitization. Become familiar with international protocols, metadata standards, and best practices (e.g., Europeana, Dublin Core, CIDOC CRM) that guide digital heritage projects.
- **Evaluate:** Critically evaluate the appropriateness, sustainability, and ethical implications of different digitization techniques. Compare and judge digitization strategies in relation to cost, access, preservation, and user engagement. Assess case studies and real-life projects to identify best practices and areas for improvement.
- **Communicate:** Clearly articulate and document technological and methodological choices in both written and oral formats, engage stakeholders from different backgrounds (e.g., curators, IT specialists, educators) in the planning and execution of digital heritage projects and produce effective storytelling for multiple audiences (e.g., tourists, researchers, students).

6.1.3. Content Structure

- **Introduction to Cultural Heritage:** provide a comprehensive overview of tangible and intangible heritage, considering historical, social, and cultural dimensions. Highlights the significance of heritage preservation and the role of technology in documenting and communicating cultural values.
- **Digital, Public and Open History:** exploration of how digital tools facilitate public engagement with historical narratives and promote open access to heritage information.
- **Digital Humanities / Citizen Science:** examination of interdisciplinary approaches combining computational methods, community participation, and cultural research.
- **Open Access / Open Source:** investigate the use of freely available resources, platforms, and software that enhance accessibility, collaboration, and innovation in the cultural sector. Discusses legal, ethical, and practical considerations in adopting open access solutions for heritage projects.



- **Crowdsourcing:** examination of participatory methods that actively involve the public, communities, or volunteers in cultural heritage projects. This includes activities such as collecting, annotating, transcribing, or validating data, enabling wider engagement, collaborative knowledge creation, and the democratization of heritage preservation. The module explores practical examples to highlight the benefits, challenges, and ethical considerations of crowd-driven initiatives.
- **Communication Design:** study of strategies for effectively presenting cultural content through digital media. Covers audience analysis, storytelling techniques, and the design of communication strategies that enhance engagement, understanding, and appreciation of heritage.
- **Information Visualization:** examine methods for representing complex heritage data visually to support interpretation, learning, and decision-making. Includes techniques for interactive maps, timelines, and dashboards that enhance user comprehension and engagement
- **Interface Design:** provide principles and best practices for creating intuitive, user-friendly, and inclusive digital interfaces for heritage applications.

6.1.4. Learning Process

The module is structured around: Lectures & Seminars, Hands-on Workshops, case studies and group discussions, collaborative teamwork and project-based simulation.

6.2 - Technologies for Extended Reality

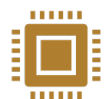
6.2.1. Module Description

This module introduces students to the technological foundations and design principles of Extended Reality (XR), encompassing Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). Through a blend of theoretical grounding and hands-on development, students will explore the tools, techniques, and challenges involved in designing immersive and interactive XR experiences. Special attention will be given to the integration of human-centered design principles, interaction models, and the critical analysis of XR systems in real-world arts & cultural contexts.

Duration: 20 hours

6.2.2. Learning Objectives

- **Define and explain the core concepts and distinctions of XR (VR, AR, MR):** understand the differences between Virtual, Augmented, and Mixed Reality, highlighting their capabilities and applications.



- **Define the importance of XR in cultural heritage:** explore how immersive technologies support the preservation, interpretation, and communication of cultural heritage. Understand how XR can enhance audience engagement, accessibility, and education by creating interactive and meaningful cultural experiences.
- **Identify and analyse technical and experiential requirements for immersive XR systems:** evaluate both hardware and software needs, as well as user experience considerations, to ensure XR systems are effective, engaging, and contextually appropriate.
- **Understand and evaluate key XR hardware (e.g., HMDs, controllers, sensors) and software frameworks:** provide knowledge of essential XR devices and platforms, enabling assessment of their suitability for diverse applications. Considers performance, usability, and accessibility as criteria for selecting appropriate technologies.
- **Apply user-centered design principles to XR interaction and interface design:** emphasize the creation of interfaces and interactions that are intuitive, inclusive, and engaging. Incorporates human perception, cognitive load, and emotional response to optimize user experience in immersive environments.
- **Develop a functional XR prototype addressing a real-world issue involving human interaction:** Combine creative problem-solving with technical implementation to demonstrate real-world applicability by developing a prototype which use XR and assess the feasibility and constraints of XR project, including technical, ethical, and user-experience considerations.

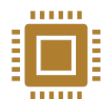
6.2.3. Content Structure

Extended Reality (XR) encompasses various immersive technologies that can blend physical and virtual worlds, including virtual reality (VR), augmented reality (AR), and mixed reality (MR).

This course is an introduction to the fundamental techniques and practical applications of Extended Reality. We will cover several topics: concepts in XR, human perception, immersion and presence, virtual world modelling, real-time simulation, input and output devices, design principles for XR, and case studies.

In the following more detailed discussion about the organization of the content:

Foundations of XR: This module introduces the core concepts of Extended Reality, distinguishing between Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR). Students will examine fundamental principles of XR, including immersion, presence, and the role of sensory and cognitive factors in shaping experiences. Some case studies such as installations, immersive theater, and museum AR tours will serve as examples to illustrate presence, narrative framing, and audience agency.



Designing for Humans: Focusing on user-centered design, this module explores how to design XR interfaces and interactions that are usable, inclusive, and emotionally engaging. Students will analyze real-world XR applications for usability and inclusivity, recognizing conceptual differences in XR hardware and platforms without deep specs. Through the critique of interactive digital artworks and museum applications, they will reflect on issues of clarity, accessibility, and the emotional arc of immersive experiences.

Creating and Prototyping Experiences: This module deals with the design and development of XR content. Students will learn how to create basic assets using templates or prebuilt libraries, design meaningful interactions that align with a narrative or learning goal, and prototype simple XR experience that addresses a scientific concept through an artistic lens. Students will prototype an immersive data sculpture or interactive story that translates a science process into experiential form.

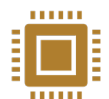
Evaluation, Ethics, and Case Studies: This module addresses critical reflection and assessment in XR. Students will evaluate projects in terms of feasibility, constraints, ethical considerations, and user experience using clear criteria. By comparing artistic and commercial XR project, they will explore questions of cultural impact and equity. Students will also debate cultural impact, authorship, and accessibility in XR gallery pieces versus branded experiences. Debates and case study analysis will provide a framework for understanding the broader implications of XR in both artistic and applied contexts.

6.2.4. Learning Process

The module is structured around concept quiz and concept maps. Fast debrief tied to arts exemplars. Usability critique memo. Heuristic checklist. Group debrief. Storyboard, lightweight prototype, short demo. Process reflections. Peer review using a unified rubric. Ethics reflection with case comparison. Moreover the module also has some sample Art-focused activities:

- Presence Walkthrough: Analyze how a museum AR tour manipulates attention through sound and motion. Students annotate with screenshots or sketches.
- Interaction Storyboard: Plan a single interaction that communicates a scientific idea through an artistic metaphor. Students present frames with captions.
- Critique Jam: Rotate through three XR artworks and complete a rapid heuristic check on clarity, comfort, and emotional arc.
- Prototype Pop-up: Build a one-room interactive scene using prebuilt assets. Measure success with two UX criteria.

6.3 - Web 3D and Immersive Communication



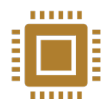
6.3.1. Module Description

This module introduces students to the creative potential of immersive communication technologies in the **cultural and creative sectors**. Rather than focusing on technical mastery, students use accessible digital platforms to experiment with how **immersive media**—such as virtual tours, interactive archives, and digital exhibitions—can tell stories, promote cultural heritage, and engage diverse audiences. Through case studies, creative exercises, group discussions, and a final group project, students learn to apply immersive tools as vehicles for **cultural expression, storytelling, and inclusive communication**.

Duration: 20 hours

6.3.2. Learning Objectives

- **Understand the role of immersive technologies in cultural communication:** Develop an awareness of how immersive tools (virtual tours, 3D exhibitions, or interactive archives) are reshaping the ways in which cultural heritage and creative content are communicated.
- **Analyse and evaluate digital cultural experiences:** assess real-world cases (virtual museums, immersive exhibitions, online archives) by considering usability, accessibility, engagement, and cultural relevance.
- **Experiment with accessible platforms to explore storytelling, spatial design, and audience engagement:** working with accessible digital platforms to explore how cultural storytelling can be structured and to acquire practical competences in designing interactive environments and strengthen the ability to communicate cultural content in creative and meaningful ways.
- **Apply creative design principles to develop inclusive, culturally meaningful immersive experiences:** integrate concepts of universal design, cultural sensitivity, and ethical representation into creative practice, ensuring that immersive communication strategies address diverse audiences and promote social inclusion.
- **Communicate and reflect on creative strategies for digital cultural storytelling:** aim to enhance the communication skills by presenting, discussing, and justifying the design choices, thereby fostering reflective practice and professional discourse in the field of cultural innovation.
- **Collaborate in teams to design a concept responding to a cultural or creative brief:** develop teamwork and project-based competences by designing and presenting a concept for an immersive cultural experience, simulating professional conditions and fostering transversal skills such as cooperation, problem-solving, and innovation.



6.3.3. Content Structure

Introduction to Immersive Cultural Communication: In this introductory session, students explore the historical and technological evolution of web design, with particular attention to how immersive and interactive environments are redefining user experience in cultural communication. Through this lecture, they become familiar with core concepts like user-centered design, spatial storytelling, and engagement strategies in digital media. By analyzing innovative examples in virtual museums and immersive exhibitions, they explore how interactive storytelling can transform cultural experiences.

Ethics, Inclusion & Representation in Immersive Communication: This session invites students to critically reflect on how immersive and web-based cultural experiences can be designed inclusively. Through real-world examples and group discussion, they consider ethical questions surrounding representation, accessibility, and gender sensitivity. The session also highlights how different users experience immersive platforms, and what cultural designers can do to ensure broader access.

Storyboarding and Wireframing Cultural Experiences: This session introduces the visual design process behind cultural platforms. Students experiment with basic design tools to explore how cultural storytelling can be structured. Through storyboards and wireframes, they test ways of presenting digital exhibitions or archives, with particular attention to how audiences might navigate and interact with content.

Immersive Platforms – Research and Analysis: In this team-based session, students explore a variety of immersive web platforms, such as Artsteps, Mozilla Hubs, and Sketchfab, to see how they can be used for cultural storytelling. Working together, they test the platforms’ ease of use, accessibility, and ability to engage audiences, and create a comparative analysis. At the end of the session, teams present their findings and discuss how different tools can support creative and cultural projects.

Designing Immersive Cultural Archives & Exhibitions: Students translate 2D wireframes into basic immersive prototypes. They design intuitive navigation, menus, and content flow suited for cultural storytelling in 3D or virtual spaces, such as small digital archives or exhibitions.

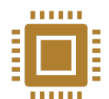
Work-Based Simulation – Solving a Real-World Brief: In the final project, students simulate a professional scenario by responding to a brief from a cultural institution. Working in teams, they design and present a concept for a digital archive or immersive exhibition, applying all skills developed during the module.

6.3.4.

Learning

Process

The module is structured around: Lectures & Seminars, Hands-on Workshops, Joint Research Projects, Case Studies & Hackathons, Studio Practice, Industry Engagement.



6.4 - Artificial Intelligence for Digital Heritage Innovation

6.4.1. Module Description

This module explores the transformative role of Artificial Intelligence (AI) in the preservation, interpretation, and dissemination of cultural heritage. Students will examine how machine learning, computer vision, natural language processing, and generative AI are applied to digitized collections, museum experiences, archival exploration, and cultural storytelling. Studying and working on existing literature, trends, gaps, challenges, and recent developments best explain the field of heritage. Articles that address scientometric trends analyse statistics and metrics to provide information on how the field has developed. Based on theoretical exploration and hands-on implementation a connecting bridge will be created between artificial intelligence and cultural heritage.

Duration: 20 hours

6.4.2. Learning Objectives

- **Demystify AI:** Gain a clear understanding of what AI is and how it can be used in a creative context. Learn how to “talk” to an AI-agent, how to craft great prompts, how to make your own helpers, and how to synthesize your desired result - moving beyond the hype and into practical applications.
- **Master Free Tools:** Learn to effectively use a curated selection of free and accessible AI tools for various creative domains, including music, image and video generation, storytelling, text generation, and creative research.
- **Develop Practical Skills:** Acquire hands-on experience in integrating AI tools into your existing creative workflows, enhancing your artistic process and expanding your creative possibilities.
- **Explore Diverse Applications:** Discover the wide range of creative applications for AI, from generating unique musical compositions and crafting compelling narratives to conducting innovative research.
- **Put It All Together:** Develop and complete a final project that showcases your newfound skills and demonstrates your ability to leverage AI tools for creative expression.

6.4.3. Content Structure

Harmonizing with AI: Music and Audio Creation: Explore the exciting world of AI-powered music and audio creation. This module covers various techniques and tools to empower your musical creativity, regardless of your prior experience with music theory or production.

Visual Voyages: Image and Video Generation: Dive into the realm of AI-generated visuals. Discover how to create stunning images from text prompts, manipulate existing images with AI-powered tools, and even generate short video clips. This module will equip you with the skills to bring your visual ideas to life, whether you're creating art, designing graphics, or producing video content.



Narrative Nexus: AI for Storytelling and Text Generation: Unlock the power of AI for storytelling and text generation. Learn how to use AI to generate creative writing prompts, develop character backstories, write dialogue, and even create entire short stories or poems. This module will explore how AI can assist in overcoming writer's block, expanding your creative horizons, and enhancing your narrative skills.

Research Revolution: AI-Powered Creative Research: Revolutionize your research process with the help of AI. Discover how to use AI tools to make a creative diary of your thoughts, summarize information, and find inspiration for your creative projects. This module will show you how AI can become your invaluable research assistant, helping you to explore new ideas and deepen your understanding of any subject matter.

Your AI-Powered Final Project: Bring together all the skills and knowledge you've acquired throughout the course to create your own unique AI-powered creative project. This module will provide guidance and support as you develop, refine, and present your work, showcasing your mastery of the tools and techniques covered in the previous modules. This final project will serve as a testament to your creative journey and a valuable addition to your portfolio. This is where you will combine elements from the previous modules, creating a cohesive and impressive final piece.

6.4.4. Learning Process

The module is structured around: Lectures & Seminars, Hands-on Workshops, Joint Research Projects, Case Studies & Hackathons, Studio Practice, Industry Engagement.

6.5 - Video-game Design and Development for Cultural Heritage

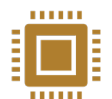
6.5.1. Module Description

This module integrates videogame design and development with cultural heritage, fostering interdisciplinary collaboration between academic institutions and cultural organisations. The program equips students with theoretical knowledge and practical skills in applying game design principles and interactive digital media to enhance cultural heritage experiences.

Duration: 20 hours

6.5.2. Learning Objectives

- **Develop a foundational understanding of videogame design and development for cultural heritage:** provide the conceptual foundation for framing videogames in the field of cultural heritage. It emphasises the history, theory, and mechanics of game design as key elements to critically assess how games can serve as instruments for preservation, education, and audience engagement.



- **Explore methodologies for interactive storytelling:** learn to use narrative structures and design strategies that connect cultural heritage with interactive media. It underlines the role of storytelling in creating engaging, meaningful, and interpretative experiences that bring cultural content closer to diverse audiences.
- **Analyze the ethical and social implications of gamification in cultural heritage:** promotes reflection on the cultural consequences of game-based approaches, including questions of representation, authenticity, inclusivity, and accessibility. This objective ensures that gamification strategies are not only innovative but also ethically responsible and socially relevant.
- **Develop a group videogame prototype:** Design and implement a playable concept that valorises a cultural asset, integrating interactive storytelling, game mechanics, and immersive elements.
- **Collaborate in interdisciplinary teams:** Manage roles, responsibilities, and decision-making processes, simulating real-world creative and cultural projects.

6.5.3.

Content

Structure

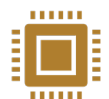
Introduction to Videogame Design for Cultural Heritage: This session provides an overview of the history, theory, and language of video games, with a focus on their role in cultural preservation and education. Students explore how serious games and heritage-focused titles communicate cultural narratives and values through interactive design. By analyzing case studies, they learn to identify key game elements and understand how these can be leveraged to create meaningful cultural experiences

Concept and Game Design: This session introduces the principles of game design and the creative process behind concept development. Students apply design thinking methodologies to transform initial ideas into structured concepts and produce a Game Design Document. The session also covers the fundamentals of video game scriptwriting, narrative flow, and character development, enabling students to articulate coherent and engaging gameplay experiences with a cultural focus.

Game Development: Students gain insight into the technical and organizational aspects of video game creation. The session covers software project management, basic software engineering principles for games, and the use of game engines suitable for cultural heritage applications. Emphasis is placed on user experience, usability, and accessibility, helping students understand how development choices influence player engagement and learning outcomes.

Interactive Storytelling & Narrative Design: This session focuses on narrative structures and their application in the context of cultural heritage games. Students examine how storytelling techniques can transform museum visits or archival content into interactive experiences.

Group Videogame Prototype Project: Design, develop, and present a working prototype as a team, applying all learned skills to create a culturally meaningful interactive experience.



6.5.4. Learning Process

The module is structured around: Lectures & Seminars, Hands-on Workshops, Joint Research Projects, Case Studies & Hackathons, Studio Practice, Industry Engagement.

6.6 - Inclusion of Girls in Technology

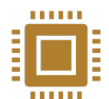
6.6.1. Module Description

This module empowers participants with knowledge and practical skills to promote gender equality and the inclusion of women and girls in technology and employment. It addresses concepts of gender equality, stereotypes, barriers in education and careers, institutional mechanisms and laws, social and economic empowerment, civic engagement, practical project design, and reflection on actions to advance inclusion.

Duration: 20 hours

6.6.2. Learning Objectives

- **Understanding Gender Equality and Stereotypes:** Recognise the basic concepts of gender equality and identify gender stereotypes that influence career choices and girls' participation in technology.
- **Analysing Barriers to Inclusion in Technology:** Analyse social, cultural, and institutional barriers that hinder the inclusion of girls in technological education and careers.
- **Understanding Legal and Institutional Plans:** Recognise institutional mechanisms and national laws that support gender equality and the inclusion of women and girls in decision-making.
- **Empowerment and Economic Inclusion of Women and Girls:** Analyse and assess challenges and opportunities in the economic and social empowerment of women and girls, including employment, entrepreneurship, and addressing multiple discrimination.
- **Designing Gender Equality Initiatives:** Draft concrete plans and projects to promote gender equality in the community or school, using skills developed during the training.
- **Fostering Civic Engagement and Participation:** Develop skills for civic engagement and local governance, including the participation of women and girls in decision-making and active roles in the community.
- **Applying Knowledge through Practical Simulation:** Use acquired knowledge in practical activities by simulating the implementation of projects for empowering girls in IT and in the community.
- **Future Action Planning:** Reflect on lessons learned and define concrete actions to advance gender equality and the inclusion of girls in technology.



6.6.3. Content Structure

Foundations of Gender Equality: Overview of core gender-equality concepts and gender stereotypes, with focus on their impact on girls in IT. Participants identify stereotypes that shape professional choices and examine how these influence participation in technology through interactive presentation, group discussion, and practical exercises.

Gender Inequality in Education and Careers: Analysis of barriers in education and technology careers for girls. Participants identify factors that create inequality, assess their impact on professional choices, and propose strategies through presentations, statistics, case studies, and group work.

Institutional Mechanisms and Laws for Gender Equality: Review of national laws, policies, institutions, and mechanisms that support gender equality and promotion. Participants identify supporting institutions and consider implications for technology-focused projects via document analysis and practical mapping.

Social and Economic Empowerment of Women and Girls: Exploration of work and employment, women and entrepreneurship, and multiple discrimination. Participants identify challenges and opportunities and create ideas for projects/enterprises that empower girls and address discrimination.

Practical Implementation of Plans and Projects: Group drafting of concrete mini-projects for empowering girls in IT and simulation of implementation through presentations and discussion of challenges and solutions.

Reflection and Next Steps: Consolidation of lessons learned, self-assessment, and planning of concrete post-training actions for the community or school.

6.6.4. Learning Process

The module is structured around: interactive presentations, discussions, practical exercises, case studies, and group work.

