Universitat Autònoma de Barcelona

2020/2021

Technology Applied to Humanities and Heritage Studies II: Technologies in the Processing and Analysis of Words and Sound

Code: 44254
ECTS Credits: 6

Degree	Type	Year	Semester
4317127 Digital Humanities and Heritage	OT	0	2

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

Name: Ramón Valdés Gázquez

Email: Ramon.Valdes.Gazquez@uab.cat

Use of Languages

Principal working language: spanish (spa)

Teachers

María Jesús Machuca Ayuso

Montserrat Amores García

Cecilio Garriga Escribano

Giuseppe Simone

Cristina Buenafuentes de la Mata

Ángel J. Gallego Bartolomé

External teachers

Núria Bel Rafecas (Universitat Pompeu Fabra)

Xavier Serra Casals (Universitat Pompeu Fabra)

Prerequisites

To attend these studies, the general prerequisites of the MA degree on Humanities and Digital Heritage are necessary. In general, the student should have already some studies at BA-level on Humanities and / or Social Sciences disciplines. The course can also be useful to computer science graduates who want to specialize in the use of digital technologies in the field of Humanities and cultural studies, although they do not have previous experience on Humanities nor Cultural studies. Familiarity, at use level, with computers and standard office software is required. Although not mandatory, prior training, at a basic level, in the use of computerized databases, computer-assisted cartography, digital photography and statistics is recommended.

The basic and reference bibliography is in English, as well as the software to be used. Knowledge of English at the level of specialized reading is therefore recommended.

Objectives and Contextualisation

This optional module aims to introduce students to the treatment and analysis of oral, written and sound productions with digital technologies. In the case of written texts and textual corpus, it is proposed to reflect on the implications of the transition from paper edition to digital edition and then focus on digital edition. In the case of oral and sound productions, an introduction will be made on the processing, labeling and categorization of sound files. The use of geographic information systems (GIS) for the coding of linguistic information applied to the study of variation (geolinguistics) and the use of social networks and crowdsourcing as part of data mining will be explored. It will also reflect on the new conception of the literary text and its interpretation in the digital age, with special attention to the polysemic concept, as well as the new possibilities of approach to the artistic fact, the reception of digital artistic work in the field of the network and the new ways of approaching and analyzing the info-assisted text.

Competences

- Act in a creative and original way with solidarity and spirit of scientific collaboration.
- Analyse and extract relevant scientific information from documents and historical, artistic and literary digitized materials.
- Critically analyse a particular scientific problem based on specific documentation.
- Design and plan impact and cultural innovation projects which use the possibilities offered by information and computer technologies.
- Ensure value and quality, self-discipline, rigour and responsibility in scientific work and dissemination.
- Evaluate the possibilities offered by technology in the production of new forms of cultural, social and humanistic creation and co-creation.
- Incorporate educational methodologies for communication and learning of the content of the projects related to digital humanities and heritage.
- Incorporate the use of computer technology in the communication and transmission of culture to specialist and non-specialist audiences and evaluate the results.
- Knowledge and understanding that provide a basis or opportunity for originality in developing and / or applying ideas, often in a research context.
- Manage cultural projects that use information and computer technologies in any area.
- Recognise and use the appropriate computer tools for the acquisition, digitization, indexing and processing of documents and historical, artistic and literary materials.
- Recognise and value the social consequences of the work carried out, taking into account the diversity of human communities in questions of gender, identity and multiculturality.
- Recognise the main challenges in the area of study of digital humanities and heritage.
- Students can communicate their conclusions and the knowledge and rationale underpinning these to specialist and non-specialist audiences clearly and unambiguously.
- That students are able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
- That students have the learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.
- That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
- Work in interdisciplinary teams.

Learning Outcomes

1. Analyse the workings of digital publishing technology and content analysis in texts and sound archives.
2. Apply criteria of scientific rigour in the production of academic and professional work.
3. Apply ethical aspects in the analysis of cultural needs for a broad range of audiences.
4. Be competent in the use of techniques which allow for the inclusion of digitized texts and sound in a digital cultural project.
5. Communicate, manage and publish written and sound documents online.
6. Demonstrate efficiency in the extraction of social and cultural information from humanistic documents using musical analysis technologies.
7. Demonstrate efficiency in the extraction of social and cultural information from humanistic documents using speech analysis technologies.

8. Demonstrate efficiency in the extraction of social and cultural information from humanistic documents using text analysis technologies.
9. Evaluate the educational needs that could be satisfied by a documentary system of texts and/or sounds.
10. Evaluate the possibilities offered by computer technologies for new forms of document reading.
11. Evaluate the real possibilities of reaching the public through cultural action.
12. Explain the educational and learning advantages deriving from the use of computer analysis of texts, sounds and multimedia.
13. Explain the technology for document indexing and cataloguing.
14. Explain the technology for editing text and sound.
15. Form part of multidisciplinary working teams in which academic reflections and procedures are central.
16. Highlight ethical aspects in cultural projects and respect for different opinions and way of being and doing things.
17. Include proposals and reflections of work carried out linked to the perspectives of: gender, universal accessibility, multiculturality and intergenerationality.
18. Knowledge and understanding that provide a basis or opportunity for originality in developing and / or applying ideas, often in a research context.
19. Make innovations incorporating creativity and originality in humanistic and cultural studies with a clear commitment to quality.
20. Make use of computer tools that allow co-design of a documentary system and patriation by the user community in it.
21. Make use of computer tools that promote artistic co-creation.
22. Make use of different digital formats for text and sound.
23. Propose innovative and competitive ideas based on knowledge acquired in fields which are not directly related a priori .
24. Solve practical problems related to the use of digitized texts and sound in digital cultural projects.
25. Students can communicate their conclusions and the knowledge and rationale underpinning these to specialist and non-specialist audiences clearly and unambiguously.
26. Summarise advanced knowledge existing in the field.
27. That students are able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
28. That students have the learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.
29. That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.

Content

DIGITIZING SPOKEN WORDS. The transition from analog to digital signal. Characteristics of the audio formats: wav and mp3. Segmentation, labeling and storage of the speech signal.

SOUND FILES. Data extraction, statistical analysis and inference. Network publication of sound documents and textgrids. Management and terminology search through relational database.

DIGITIZING MUSIC. Cataloging and archiving of music files. Consultation of music files. Applications of Artificial Intelligence in the analysis of digitized music.

DIGITAL EDITION. From manuscripts and print to XML. Text Encoding Initiative. Segmentation, marking and analysis of linguistic or literary texts. New reaches of digital publishing: visualization, exploitation, science and transfer.

NEW FORMS OF RESEARCH AND DISSEMINATION IN LITERATURE. Stylometry, distant reading, georeferencing, data storage and analysis.

NATURAL LANGUAGE PROCESSING TOOLS. Computer-assisted study of poetic and literary texts. Digital dialectology.

Methodology

The methodology is divided between directed activities, supervised activities, autonomous activities and assessm

In autonomous activities (22,4%), study hours and student preparation must be taken into account in order to face the assessment activity. These activities will be composed of searching for documentation, elaboration of databases, exercises to apply the exposed study techniques and reading references as reinforcement material.

The directed activities (48,8%) have to respond in a predetermined time schedule, which requires the face-to-face address of a teacher and which is specified in hours in the previous section. In addition, it must be taken into account that these activities are distributed in theoretical classes (28,8%) and approach to case studies and problems that may arise around a specific topic (20%).

Regarding supervised activities (28,8%), the teacher programs them so that the student works autonomously, but with the teacher's supervision. In case the student cannot develop these activities autonomously, the teacher will suggest the materials that he can use to carry out the proposed activities.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Problem-based learning. Case-based learning. Classroom practical work. Seminars. Workshops. Debates.	25	1	
theoretical classes with an explanation of computer techniques and their theoretical and methodological foundations	36	1.44	
Type: Supervised			
Practical work with hardware and software.	23	0.92	
Presentation of computer equipment.	13	0.52	
Type: Autonomous			
Search for documentation, elaboration of databases, digital editions, exercises of application of the presented analysis and study techniques, reading of texts, writing of works.	28	1.12	

Assessment

The work can have a purely theoretical orientation, or theoretical-practical, or eminently practical. It can also consist of a project or elaboration of a finished digital object. In any case, in thematic or technological relation with any aspect treated in the module and previous agreement with at least one of the professors.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Work or project on one of the aspects treated and in agreement with at least one of the teachers of the module	100%	25	1	1, 2, 3, 5, 7, 8, 6, 16, 4, 12, 14, 13, 21, 20, 22, 17, 19, 15, 23, 27, 29, 25, 28, 24, 26, 18, 9, 10,

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