

COURSE OUTLINE

(1) GENERAL

SCHOOL	Humanities and Social Sciences		
ACADEMIC UNIT	History and Archaeology		
LEVEL OF STUDIES	Postgraduate		
COURSE CODE	HAC106	SEMESTER	B'
COURSE TITLE	DIGITAL SERVICES AND INTERNET		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
<i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>			
Lectures		2	10
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Specialised general knowledge		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://eclass.upatras.gr/courses/CULTURE341/		

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
<p>The specific postgraduate course is co-taught by 2 faculty members of the Department. The course focuses on the study of the efficient use of internet technologies, as well as the study of appropriate methodologies for the design and evaluation of digital services, in contexts of cultural content with an emphasis on the history and archeology of cities. Particular emphasis is placed on the development of specific scenarios of digital services of cultural content in urban environments. Through the specific approach of the course, the student will come into contact with a new philosophy of efficient management and dissemination of cultural content of archaeological and historical interest and digital services through the World Wide Web and the Internet. In particular, upon successful completion of the course the student will be able to:</p> <ul style="list-style-type: none"> • understand the basic and critical features of the Internet in terms of providing digital services of cultural content and linking them to specific quality of service objectives.

- know specific internet tools and technologies for the development of efficient applications and services of cultural interest.
- distinguish the main user roles in a real cultural environment or a case study and to design realistic work scenarios for urban environments.
- use specific methodologies to design and evaluate efficient and engaging digital services of cultural content with an emphasis on archeology and urban history.
- collaborate with fellow students to design, evaluate and present a project on a specific case study.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology

Adapting to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and

sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

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Others...

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Search for, analysis and synthesis of data and information, with the use of the necessary technology

Adapting to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Showing social, professional and ethical responsibility and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

(3) SYLLABUS

Introductory concepts: network environments and culture - digital services - internet technologies. An introduction to the design and evaluation of digital cultural content services on the Internet: methodologies and examples. Digital services for managing and disseminating cultural content in a web environment with an emphasis on the history and archaeology of cities: guided tours to museums and places of cultural interest with smart phones, digital services connecting a museum with a city, managing archaeological excavations, managing services for cultural events with historical content in city, collective memory management services, augmented reality services in libraries. Smart urban environments and culture. Review of relevant research publications.

(4) TEACHING and LEARNING METHODS - EVALUATION

<p>DELIVERY <i>Face-to-face, Distance learning, etc.</i></p>	Face to face, Distance learning	
<p>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	Use of ICT in teaching (online lectures, course website, extensive use of Web resources), in communication with students (mailing lists, social networks (Facebook), course website). Use of specialized digital services of cultural content on the Internet. Support of learning procedure via the electronic platform e-class	
<p>TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	Activity	Semester workload
	Lectures	26
	Small independent works for practice	34
	Essay writing (team work in a case study)	100
	Independent study	90
Course total (25 hours of workload per credit)	250	
<p>STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Language of evaluation greek</p> <p>Assessment - Grading Process is explained to students at the beginning of the first course lecture. Additionally, it is announced on the course website before the beginning of the semester and remains available throughout the semester.</p> <p>Evaluation Criteria: I. Written final examination (50%) which consists of: - Open-ended questions II. Written work and public presentation (50%)</p>	

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. D. Comer, "Δίκτυα και Διαδίκτυα υπολογιστών", Κλειδάριθμος, 2014.
2. S. Hull, "Content Delivery Networks", McGraw-Hill.
3. R. Steinmetz, K. Nahrstedt, "Multimedia Fundamentals, Vol. 1: Media Coding and Content Processing", Prentice Hall.
4. R. Steinmetz, K. Nahrstedt, "Multimedia Fundamentals, Vol. 2: Media Processing and Communications", Prentice Hall.
5. R. Steinmetz, K. Nahrstedt, "Multimedia Fundamentals, Vol. 3: Documents, Security, and Applications", Prentice Hall.
6. Σ. Δημητριάδης, Α. Πομπόρτσος, και Ε. Τριανταφύλλου, Τεχνολογία Πολυμέσων. Εκδ. Τζιόλα, 2004.
7. I. Ruthven, G. G. Chowdhury, Cultural Heritage Information: Access and Management. Facet, 2015.
8. Z. Wang, "Internet QoS", Morgan-Kaufmann, 2001.
9. B. Szuprowicz, "Multimedia Networking", McGraw-Hill.
10. D. Arnold, "Paster's Quadrant: Cultural Heritage as Inspiration for Basic Research," Editorial for Inaugural Issue of ACM Journal on Computing and Cultural Heritage, Vol. 1, No. 1, pp. 1-10, 2008.
11. G. Styliaras, D. Koukopoulos, F. Lazarinis, Handbook of Research on Technologies and Cultural Heritage: Applications and Environments. ISR, New York, USA, 2011.
12. K. Koukoulis, D. Koukopoulos, "A Trustworthy System with Mobile Services Facilitating the Everyday Life of a Museum," Int. J. Ambient Computing and Intelligence, IGI, Vol. 9, No. 1, pp. 1-18, 2018.
13. D. Koukopoulos, G. Styliaras, "Design of Trustworthy Smartphone-based Multimedia Services in Cultural

- Environments," J. Electronic Commerce Research, Vol. 13, No. 2, pp. 129-150, Springer, 2013
14. Z. Koukopoulos, and D. Koukopoulos, "Evaluating the Usability and the Personal and Social Acceptance of a Participatory Digital Platform for Cultural Heritage," *Heritage*, Vol. 2, No. 1, pp. 1-26, MDPI, 2018.
 15. Z. Koukopoulos, D. Koukopoulos, and J. J. Jung, "Sustainability Services for Public Libraries within a Smart City Environment," *Proc. of the 9th International Conference on Web Intelligence, Mining and Semantics (WIMS'19)*, pp. 24:1-24:12, ACM, 2019.
 16. D. Koukopoulos, D. Tsolis, M. Gazis, and A.-I. Skoulikari, "Secure Mobile Services for On-Going Archaeological Excavations Management and Dissemination," 6th Int. Conference on Information, Intelligence, Systems and Applications, 2015.
 17. Z. Koukopoulos, and D. Koukopoulos, "Active Visitor: Augmenting Libraries into Social Spaces," *Proc. of the 2018 3rd Digital Heritage International Congress (DigitalHERITAGE) held jointly with 2018 24th International Conference on Virtual Systems & Multimedia (VSMM 2018)*, pp. 1-8, IEEE, 2018.
 18. Z. Koukopoulos, D. Koukopoulos, J. Yung, "A Trustworthy Multimedia Participatory Platform for Cultural Heritage Management in Smart City Environments," *Multimedia Tools and Applications*, Springer, Vol. 76, No. 24, pp. 25943-25981, 2017.
 19. D. Koukopoulos, D. Tsolis, and G. Heliades, "Ionian music archive: application of digitization, management, protection and dissemination technologies for musical cultural heritage," *International Journal of Computational Intelligence Studies*, Vol. 5, No. 1, pp. 3-18, IGI, 2016.
 20. K. Koukoulis, D. Koukopoulos, and K. Tzortzi, "Connecting the museum to the city environment from the visitor's perspective," *Applied Computing & Informatics*, Elsevier, 2019, in press. <https://doi.org/10.1016/j.aci.2019.09.001>
 21. K. Koukoulis, and D. Koukopoulos, "Developing and Evaluating Management Services for Collective Memory," *Heritage*, Vol. 2, No. 3, pp. 2206-2227, MDPI, 2019.
 22. D. Koukopoulos, P. Dafiotis, S. Sylaiou, K. Koukoulis, and C. Fidas, "XR technologies for self-regulated student exhibitions in art education: First results survey," *Proc. of the 2nd International Conference on Interactive Media, Smart Systems and Emerging Technologies (IMET 2022)*, pp. 1-8, IEEE, 2022.
 23. Vasileios Triantafyllou, Konstantinos I. Kotsopoulos, Dimitrios Tsolis, Dimitrios Tsoukalos: Practical Techniques for Aerial Photogrammetry, Polygon Reduction and Aerial 360 Photography for Cultural Heritage Preservation in AR and VR Applications. IISA 2022: 1-8
 24. Dimitrios Tsoukalos, Vasileios Triantafyllou, Konstantinos I. Kotsopoulos, Dimitrios Tsolis: Aitolokarnania Fortifications: An AR application for the promotion of the fortifications of Aitolokarnania. IISA 2022: 1-6
 25. Dimitrios Tsoukalos, Vangelis Drosos, Dimitrios Tsolis: Attempting to reconstruct a 3D indoor space scene with a mobile device using ARCore. IISA 2021: 1-6

- Related academic journals:

1. ACM Journal on Computing and Cultural Heritage, <http://jocch.acm.org/>
2. Journal of Cultural Heritage, <http://www.journals.elsevier.com/journal-of-cultural-heritage/>
3. IEEE/ACM Transactions on Networking, <http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=90>
4. Multimedia Tools and Applications, <http://www.springer.com/computer/information+systems+and+applications/journal/11042>
5. Journal of Parallel and Distributed Computing, <https://www.journals.elsevier.com/journal-of-parallel-and-distributed-computing>
6. Journal of Networks and Computer Applications, <https://www.journals.elsevier.com/journal-of-network-and-computer-applications/>
7. Journal of Ambient Intelligence and Smart Environments, <https://www.iospress.nl/journal/journal-of-ambient-intelligence-and-smart-environments/>
8. Personal and Ubiquitous Computing, <https://www.springer.com/journal/779>
9. Computers & Education, <https://www.sciencedirect.com/journal/computers-and-education>
10. International Journal of Human-Computer Interaction, <https://dl.acm.org/journal/jhci>