COURSE DESCRIPTION

1. GENERAL

SCHOOL	ECONOMIC SCIENCES		
DEPARTMENT	TOURISM		
LEVEL	Undergraduate		
COURSE CODE	INF170	**SEMESTER**	8th
COURSE TITLE	Virtual Worlds and Representation of Tourism and Cultural Resources		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Lectures, Lab Practice		4	5
COURSE CATEGORY	Skills Development		
COURSE TYPE	Elective		
PREREQUISITES	-		
LANGUAGE OF TEACHING AND EXAMINATIONS	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS			
URL	https://tourism.ionio.gr/en/undergraduate-studies/courses/1225/		
ECLASS	https://opencourses.ionio.gr/courses/DTO209/		

2. TEACHING RESULTS

Teaching Results

The course aims at students ' understanding of the concepts of augmented / virtual world Technologies, their applicability to the Representation of Tourism and Cultural Resources, and the development of new tourism and cultural products. Specific objectives of the course are students to:

- understand the development stages of virtual world applications,
- design, develop and manage corresponding processes as well as design and develop 3D content,
- implement scenarios for the use of virtual worlds in tourism and culture and enhance the user experience of interacting with virtual worlds,
- explore the prospects for the development of technology,
- get in touch with the relevant research issues.

Upon completion of the modules students are able to:

- identify the prospects of implementing virtual worlds to represent Tourism and Cultural Resources
- determine the specifications of the design of such systems
- recognize the potential offered by the respective technologies and be able to implement an application study,
- develop 3D content,
- implement virtual world use scenarios,
- identify specific areas of research interest and also
- detect business-professional opportunities
- understand the transformation of Tourism and cultural business processes and determine the development of new tourism and cultural products using virtual world technologies.

General Skills

3. CONTENT

The course focuses on the design and development of 3D content in tourism and culture, the implementation of scenarios for the use of virtual worlds in tourism and culture, the enhancement of the user experience of interaction with virtual worlds, the transformation of Tourism and cultural business processes and the development of new

tourism and cultural products using virtual worlds technologies.

Week 1

- Introduction to virtual world technologies and applications
- Presentation of modern technologies and explanation of concepts related to virtual worlds.
- Summary of application categories. Elements of virtual worlds and Virtual Reality.

Week 2

- Virtual worlds: concepts, themes and technologies
- Topics related to virtual worlds or virtual environments are presented in this section:
- Properties and characteristics
- Structural elements
- User participation

Week 3

- Virtual worlds: technological background
- Computational execution platforms (H / Y, smartphones, game consoles etc.)
- Interaction technologies
- Computer networks and communication protocols
- Cloud architectures and models

Week 4

- Virtual worlds: software engineering
  The module aims to present the software engineering issues related to the development of virtual worlds. Students will be able to carry out implementation of usage scenarios, Requirements analysis, logical design, and will be aware of the available virtual world development tools.

Week 5

- Three-dimensional virtual worlds content and building blocks
- How the virtual world is structured and what are its elements:
  - Space
  - Objects
  - Properties
  - Virtual characters
  - Users

Week 6

- Virtual worlds and Cultural Heritage
- Cultural applications of virtual worlds:
  - View and highlight
  - Maintain
  - Recovery
  - Education
  - Entertainment
- Cultural heritage distinction: material – immaterial and how the content can be used in any case

Week 7

- Virtual worlds and cultural content
  This module aims to enable students to understand the concept of cultural content, the ways in which virtual worlds can integrate it, and to present use scenarios for communicating content to the public.
  - What is cultural content
  - Challenges and difficulties in maintaining, organizing and using it
  - Content organization

- Sentence systems

Week 8

Virtual worlds in tourism and culture
The goal of the module is to show how virtual world applications that incorporate cultural content can act in favor of culture and be used for tourism promotion.

Week 9

Virtual worlds and business models. This section presents business models and ideas for exploitation.

Week 10

Content proposals in virtual worlds-Case Study
The problem of information storming and the study of the design of a system of cultural proposals

Week 11

- Navigate wide-ranging virtual environments
- Navigation: the intentional movement of a subject in space.
    - Challenges
    - User requirements
    - Addressing issues

Week 12

Route planning in wide-ranging virtual environments
Description of route suggestions system to users and navigation assistance.

Week 13

Virtual and Augmented Reality
Explanation of the concept. Distinguish "virtual worlds" and "Virtual Reality". Elements of Virtual Reality, systems and extensions.

4. TEACHING AND LEARNING METHODS - EVALUATION

TEACHING METHOD	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	• Use of specialized software for the design and development of recreational applications and 3D content • Support of the course using the asynchronous e-learning services of the Ionian University (https://opencourses.ionio.gr/courses/DTO209/)
TEACHING STRUCTURE	Activity — Semester Workload Lectures — 52 Lab Practice — 30 Projects — 13 Literature Study and Analysis — 30 **Course Total** (ECTS: 5) — **125**

EVALUATION OF STUDENTS	• Final examination (40%)
	• Study and implementation Final Work (60%):
	  ◦ Requirements analysis
	  ◦ Design
	  ◦ Implementation

	◦ Documentation ◦ Public presentation

5. BIBLIOGRAPHY

1. Λέπουρας, Γ., Αντωνίου, Α., Πλατής, Ν., Χαρίτος, Δ., 2015. Ανάπτυξη συστημάτων εικονικής πραγματικότητας. [ηλεκτρ. βιβλ.] Αθήνα: Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών. Διαθέσιμο στο: http://hdl.handle.net/11419/2546 - Gerard Jounghyum. Designing virtual reality systems : the structured approach. London: Springer, c2005.

2. Kipper, Gregory. Augmented reality : an emerging technologies guide to AR. Amsterdam ; Waltham, MA : Syngress, c2013.

3. Βοσινάκης, Σ., 2015. Εικονικοί κόσμοι. [ηλεκτρ. βιβλ.] Αθήνα: Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών. Διαθέσιμο στο: http://hdl.handle.net/11419/3187