Data Sheet of International Courses，CAUP, Tongji University

Course Code	02041001	Department	A	P	L	D	College ID	
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Instructor (Title)	Assistant Prof. Chen YANG	

Course Name (E)	DIGITAL HERITAGE LANDSCAPES: THEORIES AND PRACTICES	

Form of Teaching	Lectures	Design Studio	Seminar	Internship	Others
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Total Hours	17	Hours per Week	2	Weeks	8

Semester	Fall	Tongji Credits	1		

Brief Course Description

The digital conservation of heritage landscapes is an emerging field in Landscape Architecture and cultural heritage research. This course will provide an overview of the fundamental concepts, theories and methods of this interdisciplinary field. It will also introduce some cutting-edge technologies in capturing, monitoring and representing data of heritage landscapes. Through the delivery of lectures, in-class discussions and computer experiments, this course gives students the knowledge of central topics in relation to heritage landscape investigation, documentation, restoration, management and interpretation. When the course is finished, the students will understand the essential principles of the digital conservation of heritage landscapes, and will also be able to critically use digital tools to recognize and interpret values and meanings of heritage landscapes.

Brief Schedule and Topics

NO.	Content	Hours				Sub-total
		Theoretic Teaching	Experiment	Exercise	Computer Operation	
1	Introduction to the Unit / Theories of Cultural Heritage Conservation	2				2
2	Theories of Heritage Landscape Conservation	2				2
3	Digital technology Application in Heritage Conservation (Part 1)	2	2		2	4
4	Digital technology Application in Heritage Conservation (Part 2)	2	2		2	4
5	Digital technology Application in Heritage Conservation (Part 3)	2	2		2	4
6	The Evolution of Landscape Mapping Technologies	2				2
7	Critical Thinking: The Original-Material & Copy-Immaterial World	2				3
8	Final presentation and review	2		4		6
	Total	16	6	4	6	30

Course Syllabus

Lecture Topics

1. Introduction to digital heritage landscapes（2 teaching hours）

   - Introduction to the course's theme, objectives and projects

   - Heritage landscape - definition, types and significance

   - /Heritage landscape conservation and management

   - Authenticity and integrity

2. Theories of digital heritage landscapes（2 teaching hours）

   - The digital era of heritage landscape conservation

   - Replicants: the materiality of virtual technologies

   - Knowledge system management and representation

   - Cultural heritage and virtual systems

3. Heritage landscape documentation in the digital era （2 teaching hours）

   - Spatial information and point cloud technologies

   - Data collection for intangible cultural heritage

   - Digital knowledgescapes

4. Spatio-temporal data management for heritage landscapes in the digital era（2 teaching hours）

   - Geographical Information System and heritage landscapes

   - Geo-storytelling: a living archive of spatial culture

5. Digital technologies and heritage landscape interpretation（2 teaching hours）

   - Tangible virtualities

   - Heritage landscape visualization

   - Heritage landscapes in hyperdocuments

6. Computer experiments: modelling heritage landscapes（2 teaching hours）

   - Technologies: photogrammetry and LiDAR

   - Software and applications

   - Documenting landscape features

7. Final presentation and review（2 teaching hours）

Grade distribution

80% - seminar presentation and submission; 20% - participation in class

Main Reference Books

1) Aplin, G., *Heritage: Identification, Conservation, and Management*. 2002, New York: Oxford University Press.

2) Lu, D. and Y. Pan, *Digital Preservation for Heritages*. 2010, Hangzhou: Zhejiang University Press.

3) Box, P., *Geographic Information Systems and Cultural Resource Management: A Manual for Heritage Site Managers* 1999, Bangkok: UNESCO Principal Regional Office for Asia and the Pacific.

4) UNESCO, *World Heritage Cultural Landscapes: A Handbook for Conservation and Management*. World Heritage Papers, ed. N. Mitchell, M. Rossler, and P.-M. Tricaud. 2009, Paris, France: World Heritage Centre, United Nations Educational, Scientific and Cultural Organisation.

5) UNESCO. 2008. *Operational Guidelines for the Implementation of the World Heritage Convention*. www.whc.unesco.org/archive/opguide08-en.pdf

6) ICOMOS, *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter 1964)*, I.C.o.M.a. Sites, Editor. 1964, Internatonal Council on Monuments and Sites: Venice.

7) ICOMOS, A., *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*, ed. A. ICOMOS. 1999: Australia ICOMOS.

8) Marquis-Kyle, P. and M. Walker, *The Illustrated Burra Charter*. 2004: Australia ICOMOS.

9) UNESCO. *UNESCO/UBC Vancouver Declaration*. in *The Memory of the World in the Digital Age: Digitization and Preservation*. 2012. Vancouver, British Columbia, Canada: United Nations Educational, Scientific and Cultural Organisation.

10) UNESCO, *Charter on the Preservation of Digital Heritage*. Records of the General Conference. 2003, Paris: UNESCO.