COURSE OUTLINE

1. GENERAL

SCHOOL	ENGINEERING		
DEPARTMENT	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	**5303**	**SEMESTER**	**8**
COURSE TITLE	**Complexity of Design Processes**		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	**3**	**6**
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special background, skills development
PREREQUISITE COURSES:	NONE
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK/ENGLISH
COURSE DELIVERED TO ERASMUS STUDENTS	YES
MODULE WEB PAGE (URL)	https://eclass.uowm.gr/

2. LEARNING OUTCOMES

Learning outcomes

At the completion of the course, participants will be able to:

- Understands the basic concepts of the topic.
- Distinguish types and forms of complex organizations.
- Analyze and describe forms and types of complex organizations through non-reductive methods.
- Understand and manage different levels of functionality within a complex organization.
- Use the organizational / systemic framework to analyze, understand and describe the complexity of (interactive) organizations and their components and their interactive properties (adaptation, learning, perception, cognitive interaction, planning, designing, collaborative designing)
- Investigate the production of 'meaning' in complex, and more generally, goal-oriented / purposeful and cognitive (living, socio-technological, and artificial) organizations and systems.
- Understand the fundamental role of the organizational approach in the design process.
- Understand the view of design as a form of bio-cognitive interaction and continuous production of multidimensional functional meanings between complex organizations, as well as the corresponding theoretical implications.

General Skills

The course introduces students to organizational thinking with the primary goal of

- Providing theoretical and conceptual tools
- Providing applied models of non-reductive approach,
- Study, analysis, and description of complex interactive organizations across the spectrum of organizational complexity in nature and in society.

3. COURSE CONTENTS

Initially the course focuses on fundamental issues of the organizational / systemic framework for the analysis, understanding and description of complex organizations (basic processes of constitution and interaction, regulation of constitution and interaction, ways of integration between constitution and interaction, as well as the implications of different forms of this integration regarding the evolvability of each type of organization) in the whole range of organizational complexity. Explain the fundamental concepts of the organizational framework of analysis and description of complex organizations, such as: simple and complex self-organization, autopoiesis, closure, autonomy, function, regulation, self-regulation, self-directedness, integration, representation, intention, goal/purpose, anticipation, emergence , identity / character, levels of organization.

Use of the above framework for the analysis, explanation, and modeling of the design process as a form of cognitive interaction between highly complex organizations, as well as of the related aesthetic and creative interaction processes as special forms of bio-cognitive interaction directly or indirectly related to the realization of the design process. Organizational approach to the ontological and epistemological problem of design, as well as to the analysis of human-centered organizations with the aim of analysing and implementing non-reductive design interventions in them.

4. TEACHING METHODS - ASSESSMENT

MODE OFDELIVERY	In class, face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	• Video and slide presentations via projector • Support of teaching process via the electronic platform e-class • Communication with students.
TEACHING METHODS	
ASSESSMENT METHODS	

Activity	*Semester workload*
Lectures	90
Non-directed study	60
Course total	**150**

	Final written exam which includes: i. Short-answer questions ii. Multiple choice questions iii. Problem solving Assignments

5. ATTACHED

Course Textbook:

- Introduction to the systemic theory of Organisation , Fritz B. Simon , Sakkoula Publ., 1st ed./2010 , ISBN: 978-960-445-577-5 , [Evdoxos Code No.: 57783]

Additional bibliography :

- Jackson M. C. (2019). Critical Systems Thinking and the Management of Complexity. Wiley
- Moreno, A., & Mossio, M. (2015). Biological autonomy: A philosophical and theoretical enquiry. Dordrecht: Springer.