COURSE OUTLINE

1. GENERAL

SCHOOL	ENGINEERING		
DEPARTMENT	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	**3203**	**SEMESTER**	**6**
COURSE TITLE	**Studio 6 – Product Design II**		

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 and Lab exercises	**2+2**	**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

The product design studios are the place where students will work in a multidisciplinary fashion applying theoretical knowledge and skills acquired by other courses so as to conceive analyze and develop innovative and viable products and systems.

Towards that aim professional practice and design theory are fused in a process of integrated product design that places emphasis both on methodology as well as the quality of end results, while project themes are usually drafted in cooperation with the industry in an effort to link the university with society and the market.

On successful completion of this module the learner will be able to:

- Adapt the process of integrated product design to the requirements of a design project.
- Identify new user groups and contexts for the development of state of the art technology platform products.
- Compose a design brief for an innovative product or system.
- Apply reverse engineering techniques.
- Compile design specifications for products and systems of complex structure and functionality.
- Design and apply techniques for the observation of activity and field research according to the requirements of the design project.
- Design and apply a program of physical and virtual prototyping according to the requirements of the different phases of the process.
- Apply techniques of rapid prototyping.
- Apply principles and knowledge of Cognitive Science.

- Apply principles and knowledge of Product Analysis and Manufacturing [CAE/CAM] so as to create virtual prototypes of detailed assemblies.
- Design the interaction between user and product in the context of the integrated design process.

General Skills

Upon successful completion of the program students will:

- have the theoretical and practical background on the field of product and systems design engineering and the corresponding profession.
- utilize scientific knowledge to understand, analyze and solve problems.
- apply a wide range of scientific and technical knowledge concerning the design and development of products and systems.

3. COURSE CONTENTS

1. In Studio 6 – Product Design II the level of difficulty of the design project is higher as the complexity of the functionality, the technology and the manufacturing of the designed object are higher compared to those in Product Design I. Moreover a greater degree of independence is expected as teams are expected not only to adapt the design process to their project but also to determine a direction for their design brief.
2. The design projects pertain to the development of technology platform products where a given state of the art technology is the basis for the redesign or reinvention of a product or a system. In this light design teams are asked to adopt a position regarding current issues and seek for new user groups, new contexts and needs for everyday technological products that may involve not only interaction but also service design.
3. The multi-level functionality and the inherently greater complexity of the objects of design necessitate more extensive research and analysis, while higher number of design specifications increases the importance of creating a large amount of basic design solutions during the phase of ideation.
4. The observation of human activity, field research and the production of physical and virtual prototypes are still a condition for supplying the process with data of high validity, however student teams are expected to devise their own programs of research and prototyping according to their project requirements.
5. The higher level of technology and complexity of designed objects and systems requires students to delve deeper into the areas of reverse engineering, engineering design and manufacturing technology, so that design proposals mature from a preliminary design to a more detailed design. Towards that direction the employment of methods of rapid prototyping is encouraged.
6. At the same the interaction between the user and the product is designed in the context of the integrated product design process.

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	

Activity	*Semester workload*
Lectures	50
Non-directed study	50
Lab exercises	50

	Course total	**150**
ASSESSMENT METHODS	Lab exercise which includes: I. Homework exercises II. Exercises in the class III. Coursework for portfolio built Final written exam which includes: i. Short-answer questions ii. Multiple choice questions iii. Problem solving	

5. ATTACHED

- Suggested bibliography:

1. Βιβλίο [102072449]: Σχεδιασμός Προϊόντων, Κυράτσης Παναγιώτης, Ευκολίδης Νικόλαος, Μηνάογλου Πρόδρομος, Μανάβης Αθανάσιος Λεπτομέρειες
2. Βιβλίο [18548838]: Σχεδιασμός και Ανάπτυξη Προϊόντων, Ulrich K., Eppinger S. Λεπτομέρειες
3. Class notes