COURSE OUTLINE

1. GENERAL

SCHOOL	ENGINEERING		
DEPARTMENT	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	2201	**SEMESTER**	**3**
COURSE TITLE	**INTRODUCTION TO COMPUTER AIDED DESIGN**		

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
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 purpose of this course is to introduce the students to the computer aided design of products in two and three dimensions. The students acquire knowledge on design methodologies, geometric modelling and design of basic two-dimensional and three-dimensional geometric entities.

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

1. Know the terminology of a CAD system.
2. Know the basic functionality of a CAD system.
3. Acquire the mathematical background needed to understand CAD systems.
4. Use CAD systems.

General Skills

Upon successful completion of the program students will:

- Understand, analyze, and study a practical problem that requires relevant knowledge.
- They are able to adequately apply the theoretical and practical knowledge acquired.
- They have the potential to use scientific knowledge and modern technology for understanding and solving industrial problems, as well as promoting innovation in the design and development of new products and services in Greece and internationally.
- They have acquired the necessary knowledge to continue with postgraduate

studies.
- The ability to apply scientific and technical knowledge on the design and development of industrial products.

3. COURSE CONTENTS

- Basic concepts of a CAD system. Definition of a CAD system, the use of CAD, traditional vs. CAD design.
- Preliminary concepts. Two-dimensional curves, two-dimensional coordinate systems.
- Design tools. Drawing simple geometric entities (lines, arcs, circles, etc.).
- Tools for modifying a drawing. Modifying a drawing using commands (Move, Rotate, Offset, etc.).
- Dimensioning.
- Introduction to three-dimensional design. Advantages of three-dimensional design, orthographic projections, geometric modeling.
- Tools for three-dimensional design. Primitive solids, Boolean operations, sweep operations, modification commands.
- Shading and rendering. Methods for shading and rendering, applying materials to a drawing, creating lights.
- Printing of a drawing.

4. TEACHING METHODS - ASSESSMENT

MODE OFDELIVERY	In class, face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	• Use of appropriate CAD software • Video and slide presentations via projector • Support of teaching process via the electronic platform e-class
TEACHING METHODS	
ASSESSMENT METHODS	Final written exam which includes: **i.** Short-answer questions **ii.** Multiple choice questions **iii.** Problem solving

Activity	***Semester workload***
Lectures	70
Semester project	40
Non-directed study	40
Course total	**150**

5. ATTACHED

- Suggested bibliography:

1. Συστήματα CAD/ CAM και τρισδιάστατη μοντελοποίηση, Ν. Μπιλάλης , Ε. Μαραβελάκης, ΕΚΔΟΣΕΙΣ ΚΡΙΤΙΚΗ, 2020.
2. Βασικές αρχές συστημάτων CAD/CAM/CAE, Kunwoo Lee, Κλειδάριθμος, 2009.
3. CAD/CAM Theory and Practice, Ibrahim Zeid, McGraw Hill, 1991.
4. Mastering CAD/CAM, Ibrahim,Zeid, McGraw-Hill Education – Europe, 2004.

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