COURSE OUTCOME

KM331 – CAD-3D

1. GENERAL

SCHOOL	Technology		
DEPARTMENT	Forestry, Wood Science & Design		
LEVEL	*Undergraduate*		
CODE	KM331	**STUDENT SEMESTER**	3rd
COURSE TITLE	CAD-3D		

ACTIVITIES	**WEEKLY HRS**	**ECTS**
Lectures and Workshops	2+1	**5**

TYPE OF COURSE	Scientific Area
PREREQUISITES:	None
LANGUAGE TEACHING AND EXAMINATION:	Greek
THE COURSE OFFERED TO STUDENTS ERASMUS	No
WEBPAGES COURSE (URL)	

2. LEARNING OUTCOMES

Learning Outcomes

The course is a follow-up to the course KM241, "Two-dimensional design with PC - Technical drawing". The course aims to understand the design object in its three dimensions and then be able to be represented it with the help of computer graphics. This course introduces students to three-dimensional design adapted to parametric modelling and feature-based modelling logic.
Upon successful completion of the course, the student will be able to know the process of drawing sketches, creating-modifying 3D features and entities, and reproducing correct projection plans, detail plans and view plans.

General Abilities

- Creativity by utilizing modern technology
- Ability to apply a wide range of scientific and technical knowledge related to the product design cycle

3. COURSE CONTENT

In the theoretical part of the course, the student is taught and learns about:

- Product design and CAD systems
- Analysis of the concept of geometric modelling
- Analysis of the study with the CAD system
- Workflow in the solid modelling CAD system
- Wire models

- Surface models
- Primitive solids
- Solid models techniques
- Dimensioning
- Modification
- Parametric modelling
- Neutral files
- Hybrid solid modelling systems
- Representation algorithms
- Model topology
- Free form design
- Assembly

The course exercises are a follow-up of the theory and concern the practical application in the object of three-dimensional drawing.

4. TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY METHOD	In the class
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	• Use of appropriate 3D CAD design software. • Learning process support through the electronic platform e-class. • Use of supervisory tools. • • Use at least Fifteen (15) PCs to familiarize students with three-dimensional digital design software.
MANAGEMENT OF TEACHING	
STUDENT EVALUATION	I. Written final exam (30%) which includes: - Short answer questions from all the material of the book -Problem solving -Multiple choice questions II. Presentation of work (70%)

Activity	***Semester Workload***
Lectures	26
Semester work	55
Laboratory Exercises	13
Self-dependent study	26
Course Total *(25 hours of workload per credit unit)*	***125***

5. RECOMMENDED-BIBLIOGRAPHY

Books

- Βασικές αρχές συστημάτων CAD/CAM/CAE, KunwooLee, Κλειδάριθμος, 2009
- Rob Thompson , Manufacturing Processes for Design Professionals, Εκδόσεις Thames & Hudson, ISBN: 500513759
- Alan Pipes, Drawing for Designers, Laurence King Publishers, ISBN: 1856695336

- CAD and Prototyping for Product Design , Douglas Bryden
- 3D CAD Principles and Applications , Hiroshi Toriya, Hiroaki Chiyokura, 2012
- Geometric Modeling , Hagen, Farin, Noltemeier, 1993

Journals

- International Journal of Computer Aided Design
- Computer Aided Design Journal
- Computer Aided Design and Applications
- Journal of Computer Aided Design and Computer Graphics