COURSE OUTLINE

1. GENERAL

SCHOOL	ENGINEERING
DEPARTMENT	PRODUCT AND SYSTEMS DESIGN ENGINEERING
LEVEL OF STUDIES	Undergraduate
COURSE CODE	2302 **SEMESTER** 4th
COURSE TITLE	**Production management**

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 methods and algorithms used in the organization of a production process with the aim of its best possible operation. It includes methodologies for making administrative decisions with mathematical standards and quantitative methods. The students acquire knowledge on the following concepts: Configuration program production, Inventory management, Forecasting Methods, Scheduling projects and Queuing theory. A common feature of all these problems is that their solution can be determined in detail, after first building a mathematical model or model that describes them.

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

1. Knows the basic methodologies of organizing a productive process
2. shapes the production program of a company
3. knows inventory management systems
4. implements inventory management algorithms
5. selects the appropriate method and implements demand forecast
1. 6. implements project scheduling.

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

- *Forecasting*: Applications of Forecasting, Qualitative forecasting methods, Time Series, Exponential Smoothing Method Causal Forecasting with Linear Regression, Forecasting Errors.
- *Inventory management*: Inventory Costs, General inventory model, Static economic order quantity (EOQ), Special cases: limited capital, limited storage space, storage rental, limited capacity, limited quantity, Static economic production quantity, Static economic order quantity with discounts, Standard economic order quantity with deficiencies.
- Stochastic inventory models, Probabilistic EOQ, Fixed time ordering.
- ABC Analysis.
- *Project Management*: techniques CPM and PERT, AOA, AON Networks.
- *Queuing theory*.

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	80
	Projects	40
	Non-directed study	30
	Course total	**150**

ASSESSMENT METHODS	Projects (they are counted with 20% each in the final score) Final written exam which includes: i. Short-answer questions ii. Problem solving

5. ATTACHED

- Suggested bibliography:

— *Οργάνωση & λειτουργία της βιομηχανίας*, J. Ritz, W. Fred Hadley, J. Bonebrake, Μακεδονικές Εκδόσεις.

— *Manufacturing planning and control systems*, T. Vollmann, W. Berry, Clay Whybark. Εκδόσεις McGraw Hill.