COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF BUSINESS		
ACADEMIC UNIT	DEPARTMENT OF FINANCIAL & MANAGEMENT ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	MH0109	SEMESTER	8
COURSE TITLE	PRODUCTION SYSTEMS		

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
LECTURE	3	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).	3	5

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special background (Required stream course. Stream II: Engineering Management)
PREREQUISITE COURSES:	-
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	-
COURSE WEBSITE (URL)	http://www.fme.aegean.gr/el/c/sustemata-paragoges

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

- Understanding of basic concepts in
  - Aggregate production planning
  - Inventory management
  - Material requirements planning, capacity planning
  - Shop floor control
  - Lean manufacturing
  - Factory dynamics, including push and pull systems
  - Production lines
- Application of the above in solving problems of inventory and production management.
- Students obtain proven knowledge and understanding of basic areas of production systems, which is based on their educational background, and, although it is supported by advanced scientific texts, it includes inputs from the state of the art of their field of knowledge
- They are in a position to use the knowledge and understanding they obtained from the course in a manner that indicates a professional approach in their work or profession; they obtained abilities that are evident from the synthesis and support of positions and from

problem solving in their knowledge area

- They have the ability to collect and interpret relevant information (within their knowledge area), and to develop views that show critical thinking in relevant scientific topics
- They have developed those abilities of acquiring knowledge that are necessary to continue their study under a significant degree of independence
- They are in a position to present information, concepts, problems and solutions in a specialized as well as a general audience

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
……
Others…
…….

- System design
- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Working in an interdisciplinary environment
- Production of free, creative and inductive thinking

(3) SYLLABUS

DESCRIPTION

This course presents fundamental concepts of production planning, management and control. Specific topics discussed include aggregate production planning, inventory management, production databases, materials planning, manufacturing resource planning, just-in-time production, management of factory dynamics, push and pull systems.

Week	Contents
1	• Introduction (Product Design and Manufacturing),
2	• Aggregate Production Planning I
3	• Aggregate Production Planning II
4	• Inventory management under known Demand I
5	• Inventory management under known Demand II
6	• Inventory management under uncertain Demand I
7	• Inventory management under uncertain Demand II
8	• Production Databases. Principles of MRP I: Materials Planning
9	• Material Requirements Planning – MRP I
11	• Manufacturing Resource Planning – MRP II
12	• Principles of JIT – Shop Floor Dynamics
13	• Push and Pull Systems. CONWIP

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Lectures face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of ICT in teaching, laboratory education, communication with students
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	

Activity	*Semester workload*
Lectures	39
Weekly Homework	44
Two Midterm Exams	6
Study	43
Semester Project	15
Final Exam	3
Course total	150

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	**Assessment Methods:** - Homework 10% - Two midterm exams 40% (20% each) - Term project 10% - Final exam 40%

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

A) Principal Reference:

- Minis, I., *Introduction to Production Systems,* course notes, University of the Aegean
- Ioannou G., *Production and Service Management*, Publisher Stamoulis, Athens, 2005

B) Additional References:

Other useful references include:

- Nahmias, S. *Production and Operations Analysis*, 2nd Edition, Irwin, 1993
- Vollmann, T.E., Berry , W.L and Whybank, D.C., *Manufacturing Planning and Control Systems*, 4th Edition, Irwin/McGraw Hill, 1997
- Hopp, W.J. and Spearman, M.L., *Factory Physics*, 2nd Edition, McGraw Hill, 2001
- Gershwin, S.B., *Manufacturing Systems Engineering*, Prentice Hall, 1994.