COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Engineering		
ACADEMIC UNIT	Mechanical Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΟΠ0901	**SEMESTER**	7th
COURSE TITLE	Operations 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	5	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, specialized general knowledge, skills development*	specialized general knowledge
PREREQUISITE COURSES:	-
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (tutoring)
COURSE WEBSITE (URL)	https://www.mie.uth.gr/?page_id=18373&lang=en

(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*

This course aims to provide undergraduate students with all the necessary knowledge to enable them to understand the fundamentals of production processing, economics, decision-making in production planning, and selection of optimal location of production units. Initially, basic knowledge about capacity management, forecasting and decision analysis is presented. The course continues focusing on engineering economics. The basic principles and methods of calculating the value of money at different times are analyzed with details. The next part of the course focusing on three basic selection methods for the optimal location of a production unit: 1) Dead point analysis method based on the production rate, 2) Production cost minimization method, and 3) Standard transport method minimizing production and transportation cost. The course concludes by presenting a heuristic and an analytic method of solving the problem of assigning jobs to workstations.

Upon successful completion of the course the student will be able to:

• analyzes and resolves decision problems related to production processes.
• defines different industrial production indexes.
• knows and analyzes basic methods of forecasting demand and dead point analysis for a production process.
• knows and analyzes basic engineering economics principals.
• calculates the optimal point of placement of a production unit using various heuristic methods.
• Assigns jobs to workstations in an heuristic and analytical manner taking into account various rules, principles and restrictions in production process.

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…
…….

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently
- Team work
- Decision-making
- Project planning and management
- Criticism and self-criticism
- Production of new research ideas

(3) SYLLABUS

Design of products – selection and development of products. Process strategy & capacity planning – types of processes, equipment capacity, break-even analysis, and investment evaluation. Location strategy – site selection, factor evaluation methods, transportation cost minimization, and transportation model. Layout strategy. Human resources & job design – staffing design, work measurement, and work sampling. Procurement strategy – vertical integration, supply management, and just-in-time purchasing. Organizational structure strategy.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY ***Face-to-face, Distance learning, etc.***	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of ICT in teaching, emails, dropbox.

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	70
Homework	35
Studding at home	45
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.*	Writing exams at the end of semester (70% of the final grade) – Problem solving Homework (30% of the final grade)

(5) ATTACHED BIBLIOGRAPHY

-**Suggested bibliography:**

Λυμπερόπουλος Γ., (1998). Οργάνωση και Διοίκηση Εργοστασίων. Πανεπιστημιακές Σημειώσεις.

- Shim J.K. & Siegel J.E., (1999). Διοίκηση Εκμετάλλευσης. Γ. Κατσαντώνης (επιμ. μετάφρασης), Εκδόσεις Κλειδάριθμος.
- Δημητριάδης Σ.Γ. & Μιχιώτης Α.Ν., (2007). Διοίκηση Παραγωγικών Συστημάτων. Εκδόσεις Κριτική.
- Ιωάννου Γ., (2005). Διοίκηση Παραγωγής και Υπηρεσιών. Εκδόσεις Σταμούλη.
- Παππής Κ.Π., (1993). Διοίκηση Παραγωγής. Εκδόσεις Σταμούλη.
- Ψωϊνός Δ.Π., (1993). Οργάνωση και Διοίκηση Εργοστασίων, Τόμος 1: Σκοπιμότητα Δημιουργίας και Σχεδίαση. Εκδόσεις Ζήτη.

- Related academic journals:

- Operational Research
- International Journal of Production Economics
- Industrial and Engineering Chemistry Research

International Journal of Advanced Manufacturing Technology