



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Ingegneria
ACADEMIC YEAR	2016/2017
BACHELOR'S DEGREE (BSC)	MANAGEMENT ENGINEERING
SUBJECT	PRODUCTION & OPERATIONS MANAGEMENT
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50300-Ingegneria gestionale
CODE	03724
SCIENTIFIC SECTOR(S)	ING-IND/17
HEAD PROFESSOR(S)	LA COMMARE Professore Ordinario Univ. di PALERMO UMBERTO
OTHER PROFESSOR(S)	
CREDITS	9
INDIVIDUAL STUDY (Hrs)	144
COURSE ACTIVITY (Hrs)	81
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	3
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	LA COMMARE UMBERTO Monday 10:00 12:00 Stanza Docentel° piano edificio 8 - Padiglione Tecnologie Meccaniche

DOCENTE: Prof. UMBERTO LA COMMARE

PREREQUISITES	Basic understanding of statistics, economics and manufacturing processes
LEARNING OUTCOMES	<p>Knowledge and understanding The student attending the course will be able to understand the basic issues of operations management in today global market. He/she will be able to understand the role of production technologies in the international arena and their effects on the competitiveness of the industrial firms (PART I). From the methodological point of view he/she will understand: the main configurations of manufacturing systems and models for the evaluation of their performances (PART II); criteria and techniques for material management (PART III); criteria and techniques for production planning and control (PART IV).</p> <p>Ability to apply knowledge and understanding The student will be able to understand the interactions among product-process-manufacturing system as tools for design and management of manufacturing systems and to define plans for material and resource management.</p> <p>Critical thinking The student will be able to express her/his ideas about the evolution of production technologies in the actual global market and will be able to identify the key metrics for the design and management of manufacturing systems.</p> <p>Communication skills The student will master communication skills on the course topics learning the meaning of the key words and will be able to properly discuss issues such as evolution of the production function in today market.</p> <p>Learning skills The student will master the basic issues on: relationships among production, technology and market: modelling manufacturing systems; decision support systems for material and manufacturing resource planning. These learning outcomes will allow her/him to attend advanced courses on these topics.</p>
ASSESSMENT METHODS	<p>Written and oral examinations - out of 30 Weight of the written exam 40%; Weight of the oral exam 60%</p> <p>The written exam relates to 3 basic numerical exercises about topics developed during the classroom exercises. The exercises are: 1 on the manufacturing systems, 1 on material management and 1 on production planning and control. The time given for the written exam is 90 min. The written exam is evaluated out of 30 according to the following criteria: a) quality of the presentation and of the graphics; robustness of the solution provided, numerical accuracy. Each exercise could reach the evaluation of 10 points according to the criteria a, b e c and up to 30 points for all of the 3 exercises. If the evaluation of the written exam is below 18/30 the student receive the advice to quit the examination. In any case the evaluation of the written exam allows to access the oral exam during which the student can discuss the solutions of the 3 exercises.</p> <p>The oral exam starts with the discussion of the written exam and of its final evaluation. Then three topics of the syllabus will be discussed with the aim to evaluate the knowledge captured regarding the most important covered topics. The lenght of the oral exam is up to 20 min. The evaluation of the discussion of each topic is up to 10 points given both on the correct understanding and communication skill. The overall value of the oral exam is given by the sum of the points of each discussion.</p> <p>The overall evaluation is given by the weighted average (40% written and 60% oral) of the results.</p>
EDUCATIONAL OBJECTIVES	<p>Aim of the course is to provide both methodologies and decision support systems for operations management with particular emphasis on production planning and control and distribution. We will present operations management issues in relationship to economic objectives, production capacity and issues related to the matching of supply with demand.</p> <p>These problems are dealt referring to the most updated innovations in production technologies using an integrated view considering product, process and manufacturing system.</p> <p>The course is structured into four parts: a) the role of the production function for the competitiveness of the industrial companies; b) the study of the models of manufacturing systems; c) material management; d) production planning and control.</p>
TEACHING METHODS	Lectures, classroom exercises, seminars
SUGGESTED BIBLIOGRAPHY	<p>U. La Commare - Appunti del corso A. Brandolese, A. Pozzetti, A. Sianesi, Gestione della Produzione Industriale, Hoepli G. Cachon, C. Terwiesch, Matching Supply with Demand, McGraw-Hill C. Dennis Pegden, R. E. Shannon, R. P. Sadowski, Introduction to simulation using SIMAN, McGraw-Hill</p>

SYLLABUS

Hrs	Frontal teaching
4	Relationships among production-market-technology

SYLLABUS

Hrs	Frontal teaching
5	Reference models for industrial production
4	Innovations in production technologies
2	Manufacturing systems
3	Measuring production efficiency
14	Models for measuring manufacturing efficiency
2	Material Management
2	Information for material management
2	Look back and look ahead material management and selection criteria
3	Material Requirement Planning
2	Economic production quantity
2	Manufacturing resource planning
2	Just in Time
2	Overview of production scheduling
Hrs	Practice
6	Measuring production efficiency: Static allocation, Mean Value Analysis
3	Pareto analysis and selection criteria between look back and look ahead
3	Economic order quantity and Economic production quantity
3	Material Requirement Planning
9	ERP systems