

Course Unit Description - (GEPOP)

(Production and Operations Management)

(Mestrado em Engenharia Electrotécnica e de Computadores)

Academic year: 2009/2010



Subject group: Gestão Industrial

	Semestral	Optional		
Mode of study	Diurno	Hours/Week	T-Teórica	2
Year	1 ^o		PL-Prática-Laboratorial	2
Semester	2 ^o		OT-Orientação Tutorial	1
ECTS				6

Objectives

- To understand the characterization of the production systems, its necessities of information and criterion to support the management;
- To comprehend the several stages of the production planning, scheduling and production control and its associated functions;
- To analyse and to be able to use the several models and techniques of resolution the principal production and operations management problems;
- To differentiate the MRP and JIT models of the production management and to recognize integration forms;
- To interpret the new challenges in the management of the distributed/Agile and virtual enterprises

Course Contents

- 1 – Production Systems Typologies
 - 1.1 – Interest of the typologies
 - 1.2 – Classification of the processes of the production systems
 - 1.3 – Caracterization of the principal processes
 - 1.4 – Implications of the processes typologies into organization management
- 2 – Planning, Scheduling and Production Control (with MRP)
 - 2.1 – The function planning, scheduling and production control (PPCP)
 - 2.2 – Strategic planning
 - 2.3 – Aggregated planning
 - 2.4 – Master production planning
 - 2.5 – Materials requirements planning (MRP) and of capacity (CRP)
 - 2.6 – Releasing of the production orders
 - 2.7 – Detailed Scheduling
 - 2.8 – Production Control
 - 2.9 – Cases study
- 3 – Just in time (JIT) into the Production Planning and Control
 - 3.1 – Principal elements of the JIT
 - 3.2 – Implications of the JIT in the phases of the PPCP
 - 3.3 – Group technology
 - 3.4 – The production control with the Kanban
 - 3.5 – Comparison between JIT and MRP and its adequacy at the production systems typologies
 - 3.6 – The integration of the two models
 - 3.7 – Cases study
- 4 – Optimized Production Technology (OPT)
 - 4.1 Basic concepts of the OPT
 - 4.2 The framing of the OPT in the PPCP
 - 4.4 The theory of the constrains
 - 4.5 Implementation remarks
5. Virtual and Distributed Enterprises Project Management
 - 5.1 Basic concepts of the Virtual Enterprises
 - 5.2 Life Cycle of the Virtual Enterprises
 - 5.3 Models/Projects of Virtual Enterprises
 - 5.4 The resources Market
 - 5.5 The Broker
 - 5.6 The problem of the configuration of the Agile/Virtual Enterprises

Recommended reading

- Ávila, P., Cavaco, I. (2008) Gestão da Produção e das Operações, ISEP.
- Camarinha-Matos, L. (2002) Collaborative Business Ecosystems and Virtual Enterprises, Kluwer Academic Publishers.
- Chase, R., Aquilano, N. (1995) Gestão da Produção e das Operações, Monitor.
- Cunha, M. M., Cortes, B. C. & Putnik G. D. (2007) Adaptive Technologies and Business Integration: Social, Managerial and Organizational Dimensions, Idea-Group Publishing.
- Dilworth James B. (1992) "Operations Management, Design, Planning and Control for Manufacturing and Services", McGraw-Hill.
- Putnik, G. D. & Cunha, M. M. (2007) Knowledge and Technology Management in Virtual Organizations: Issues, Trends, Opportunities and Solutions, Idea-Group Publishing.
- Vollmann, T., Berry, W., & Whybark, D. (1996) Manufacturing Planning and Control Systems, Richard D. Irwin, Inc..

Teaching Methods

- Theoretical lessons:
Oral presentation and discussion of the course contents, using slides projection and texts reading.
- Tutorial lessons:
Support at the execution of the groups works.
- Laboratorial lessons:
Practice application of the concepts acquired in the theoretical lessons. Will be used exercises and cases study related with the reality of the problems of the production and operations management.

Assessment methods

Assessment during the academic period (Freq):

For the effect will be assessment the work realised by the students. The evaluation of this work will have three phases: the first one in the week before the Queima das Fitas, with the deliver of the report pre- version, that will count 15% of the final work note; the second one in the last but one week of lessons, with the deliver of the final report, that will count 15% of the final work note; and the third one in the last week of lessons, with the presentation and work discussion (20%) and the deliver of the auto-assessment of the group, that will count 50% of the final work note. The assessment during the academic period is obligatory.

Intercalary Assessment

Will not be done.

Assessment by Exam (PE):

Written exam with component theoretical and practice to fall upon over the globally course contends.

Final Classification of the Discipline = $x \cdot \text{NFREQ} + y \cdot \text{PE}$

$x = 0.5$; Min NFREQ = 7,0 valuables (minimal FREQ classification)

$y = 0.5$; Min PE = 7,0 valuables (minimal PE classification)

The classifications of the FREQ and the PE should be realising with the valuables rounded to the units.

Improvement Assessment Note:

Written exam with component theoretical and practice to fall upon over the globally course contends. In this case the classification will be the note obtained in this exam.

	Name
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