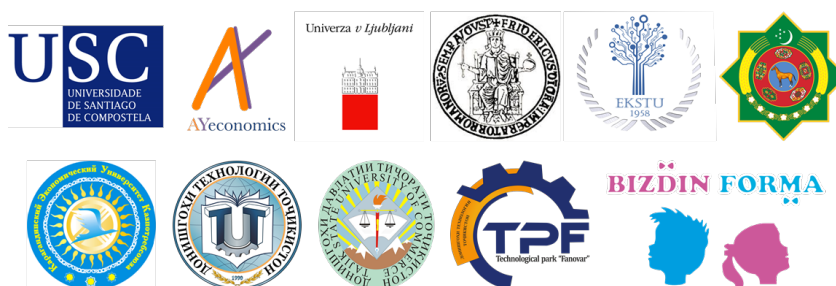




DEVELOPMENT OF A MASTER PROGRAMME IN THE MANAGEMENT OF INDUSTRIAL
ENTREPRENEURSHIP FOR TRANSITION COUNTRIES

610198-EPP-1-2019-1-ES-EPPKA2-CBHE-JP

Partners :



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Production Planning and Control

Study program	Year	Semester

Course type:

University code

Lectures	Seminar	Tutorial	Laboratory work	Other work	Individ. work	ECTS

Lecturer

Languages English

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PREREQUISITS

ОБЯЗАТЕЛЬНЫЕ УСЛОВИЯ

CONTENTS

СОДЕРЖАНИЕ

1. Planning and control performances
2. Planning parameters and planning variables
3. Planning environment characteristics
4. Demand forecasting
5. Customer order management
6. Sales and operations planning
7. Master production scheduling
8. Materials planning approaches and methods:
safety stock methods, lot sizing methods.

9. Materials planning in distribution networks
10. Execution and control of operations
11. Shop floor scheduling and control
12. Inventory accounting

READINGS

Main textbook:

JM: Jonsson, P. and Mattsson, S-A. (2009), *Manufacturing planning and control*, McGraw-Hill, London

Other readings:

1. Syntetos, A.A., Babai, Z., Boylan, J.E., Kolassa, S. (2016), "Supply chain forecasting: Theory, practice, their gap and the future", *European Journal of Operational Research*, Vol. 353, pp. 1-26.
2. Sanders, N. and Ritzman, L. (2004), "Integrating judgmental and quantitative forecasts: methodologies for pooling marketing and operations information", *International Journal of Operations and Production Management*, Vol. 24, No. 5, pp. 514-529.
3. Andersson, J. and Jonsson, P. (2018) "Big data in spare parts supply chains: The potential of using product-in-use data in aftermarket demand planning", *International Journal of Physical Distribution & Logistics Management*, Vol. 48, No. 5, pp. 524-544.
4. Oliva, R. and Watson, N. (2009), "Managing functional biases in organizational forecasts: A case study of consensus forecasting in supply chain planning", *Production and Operations Management*, Vol. 18, No. 2, pp.138-151.
5. Jonsson and Mattsson (2019), "An inherent differentiation and system level assessment approach to inventory management: A safety stock method comparison", *International Journal of Physical Distribution and Logistics Management*, Vol. 30, No. 2, pp. 663-680.
6. Grimson, A. and Pyke, D. (2007), "Sales and operations planning: An exploratory study and framework", *International Journal of Logistics Management*, Vol. 18, No. 3, pp. 322-346.

OBJECTIVES AND COMPETENCES

ЦЕЛИ И КОМПЕТЕНЦИИ

1. To provide students with the basic concepts related to the interactions between the operations management system parameters and their impact on production and inventory control systems design.
2. To provide students with methodology and models for the generation of company forecasts, materials management cost elements, business operations analysis, and productivity.
3. To provide students with information on the design and management of operations and production planning/control systems including capacity planning, materials requirements planning, inventory models, scheduling and sequencing, and line

balancing for various aspects of the manufacturing and service industry.

4. To provide students with all the production and inventory control systems related to Just-in-Time, Lean Manufacturing and Agile Manufacturing methodologies.

INTENDED LEARNING OUTCOMES

ОЖИДАЕМЫЕ РЕЗУЛЬТАТЫ ОБУЧЕНИЯ

Students should be able to:

1. Develop and analyze operations performance measurements and analysis for continuous improvement.
2. Describe and determine the effect of product, process, inventory costs, product forecasting, operations strategies, and schedule design parameters on design of materials requirements planning, inventory planning, capacity planning, and production planning/control systems.
3. Apply and analyze forecasting models to develop business enterprise forecasts for product demand, profits, sales, material requirements, capacity requirements, etc.
4. Identify the impact of production/inventory cost decisions and operations strategies on the break-even, return on investment and profit analysis of a business enterprise.
5. Develop and analyze production and inventory planning/control systems, and scheduling techniques by using engineering techniques for a complete production facility.
6. Develop and analyze the capacity planning process. Identify characteristics and relationship to business operations in regard to managing product demand versus product capacity.
7. Design, develop, and analyze a Master Production Schedule and a resultant Materials Requirement Plan (MRP) for a complete production facility.



8. Design, develop and analyze production and inventory control processes with respect to Just-in-Time, Lean Manufacturing and Agile Manufacturing methodologies.

LEARNING AND TEACHING METHODS

МЕТОДЫ ОБУЧЕНИЯ И ПРЕПОДАВАНИЯ

This course is project driven with 4 projects that build upon the previous project. The student will set up their own company and products and apply all course material to their own company. In class quizzes may be given during any class period without prior announcement. Homework and projects are due at the beginning of class on the due date. Classroom participation is expected.

ASSESSMENT

ОЦЕНКА

Final exam (40%), Projects (40%), Quizzes (20%)

LECTURER'S REFERENCES