

Production & Logistics I

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Course Objectives

The objective of the course is to achieve abilities in problem solving and management of systems of production in a firm. The participants learn about the ways of analyzing production systems and production schedules. They shall know about objectives of production and operations management. They will be used to different situations of production and feasible solutions.

Knowledge and skills after completing the course

After completion of the course the participants will recognize optimization problems and know how to solve management problems. They will know optimal solutions of production programs and ways to achieve them. They will know about the fundamentals of strategic production plans.

Course format and teaching methods

A mixture of readings, discussions, and small case studies characterizes this course. The cases represent different situations of an industrial production. The readings inform also about forms of functions for costs, sales, and costs per unit. Criteria for best solutions are shown and discussed. Connections between production and logistics are pointed out.

Integration of Theory with Practice; Relationship with other Courses

Together with the presentation of small cases it is shown how practical problems of production and logistics occur. The methods of analyzing and planning are presented in a way, so they may be applied to different problems of production and scheduling.

By figuring out earnings, costs, capacities and sales, there is a good connection to courses of cost accounting, theory of investment and also to courses with management games.

Course content

The introduction for this course shows a variety of problems in productive systems and their logistics. Objectives for production programs are presented, variables are identified and systems are described. Models for simplified planning problems are shown. Questions of determining an optimum solution for a short term production plan are pointed out in connection with an application of linear programming. Models with non-linear objective functions are shown graphically.

After discussions and case studies about planning production programs and capacities problems of scheduling in production systems are presented. The students now learn about time consuming schedules and fundamentals of scheduling methods. Project planning in productive systems are also taught.

Exam

Regularly written exam. In addition written homework and presentation.

Reading list

Bloech, Bogaschewsky, Götze, Roland: Einführung in die Produktion, 3. Aufl., Heidelberg 1995.

Bloech, Lücke: Produktionswirtschaft, Stuttgart, New York 1982.

Chase, R.B.; Aquilano, N.J.: Production and Operations Management, 7. Ed. Irwin, Chicago etc. 1995.

Vollman, T.E.; Berry, W.L.; Whyback, D.C.: Manufacturing Planning and Control Systems, 2. Ed., Dow Jones-Irwin 1988.