


Discipline	PRODUCTION MANAGEMENT code: 34 semester – summer		
Specialty	INDUSTRIAL MANAGEMENT		
ECTS credits: 7	Form of assessment: Examination		
Lecturer	Assoc. Prof. Eng. PhD Tanya Panayotova, Room 508 Phone: +35952383682. E-mail: t_panayotova@tu-varna.bg		
Department	INDUSTRIAL MANAGEMENT		
Faculty	FACULTY OF MECHANICAL ENGINEERING AND TECHNOLOGIES		
<p>Learning objectives:</p> <p>The educational objectives of the course aim at forming students' theoretical knowledge in the area of production management, as well as at laying the foundations of their practical skills in managing the production processes in enterprises dealing with material production.</p> <p>The theoretic and methodological problems of research in maintaining the optimal proportions between the structural elements of the production process are examined, as well as among them and the available resources of the enterprise. Attention is paid to the type and forms of organization of production, the stages, functions and types of production management. Significant place is given to the issue of creating a successfully functioning forecasting system for PM purposes. Emphasis is also placed on capacity planning, annual production programming, calendar and operational production planning.</p> <p>The study of the topic provides a foundation on which students build knowledge about the realization of production process of a given order within certain terms and quantities, but determining this realization in space and time, starting from the general things to the specific ones.</p>			
CONTENTS:			
Training Area		Hours lectures	Hours laboratory exercises
Topic 1. Introduction to Production Management 1.1 Introduction 1.2 Historical Evolution of Production Management 1.3. Objectives of Production Management		2 hours	
Topic 2. Concept of Production 2.1 Production System 2.2. Classification of Production System		2 hours	1 hours
Topic 3. Nature of Production Management 3.1. Main Tasks of Production Management 3.2. General Requirements of Production Management		2 hours	

3.3. Main Functions of Management 3.4. Interactions of Production Management		
Topic 4. Competitiveness, Strategy, and Productivity 4.1. Mission and Strategies 4.2. Strategies and Tactics 4.3. Strategy Formulation 4.4. Supply Chain Strategy 4.4. Sustainability Strategy 4.5. Global Strategy	2 hours	
Topic 5. Forecasting. Nature and basics 5.1. Features Common to All Forecasts 5.2. Elements of a Good Forecast 5.3. Forecasting and the Supply Chain 5.4. Steps in the Forecasting Process 5.5. Forecast Accuracy 5.5. Summarizing Forecast Accuracy	2 hours	1 hours
Topic 6. Approaches to Forecasting 6.1. Qualitative Forecasts 6.2. Executive Opinions 6.3. Salesforce Opinions 6.4. Consumer Surveys 6.5. Other Approaches	2 hours	1 hours
Topic 7. Forecasts Based on Time-Series Data 7.1. Naive Methods 7.2. Techniques for Averaging 7.3. Other Forecasting Methods 7.4. Techniques for Trend 7.5. Trend-Adjusted Exponential Smoothing 7.6. Techniques for Seasonality 7.7. Techniques for Cycles	2 hours	2 hours
Topic 8. Associative Forecasting Techniques 8.1. Simple Linear Regression 8.2. Comments on the Use of Linear 8.3. Regression Analysis 8.4. Nonlinear and Multiple Regression Analysis	2 hours	2 hours
Topic 9. Monitoring the Forecast 9.1. Choosing a Forecasting Technique 9.2. Using Forecast Information 9.2. Computer Software in Forecasting	2 hours	1 hours
Topic 10. Product Design 10.1. Strategies of Product 10.2. Degree of Standardization 10.3 Designing for Mass Customization	2 hours	
Topic 11. Strategic Capacity Planning for Products 11.1. Capacity Decisions 11.2. Defining and Measuring Capacity 11.3. Determinants of Effective Capacity	2 hours	4 hours
Topic 12. Strategy Formulation 12.1. Steps in the Capacity Planning 12.2. Forecasting Capacity Requirements 12.3. Developing Capacity Strategies	2 hours	1 hours

Topic 13. Aggregate Planning and Master Scheduling 13.1. Intermediate Planning in Perspective 13.2. The Concept of Aggregation 13.3. Dealing with Variations	2 hours	2 hours
Topic 14. Techniques for Aggregate Planning 14.1. Trial-and-Error Techniques Using Graphs and Spreadsheets 14.2. Mathematical Techniques 14.3. Master Scheduling 14.4. The Master Scheduling Process 14.5. Time Fences	2 hours	
Topic 15. MRP and ERP 15.1. MRP Inputs 15.2. MRP Processing 15.3. MRP Outputs 15.4. MRP II 15.5. ERP	2 hours	
TOTAL: 60. h	30	15

Course Project

Development of calendar scheduled norms by: 1. Method for forming calendar plans with optimizing the batch processing sequence of semi-manufactured goods in relation to the used resources in unfinished production. 2. Method for forming calendar plans with optimizing the batch processing sequence in relation to the total machine reset time.	15 hours
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Total: 15 hours