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Planning and Scheduling in Manufacturing and Services-Michael L. Pinedo 2009-10-03 Pinedo is a major figure in the scheduling area (well versed in both stochastics and combinatorics), and knows both the academic and practitioner side of the discipline. This book includes the integration of case studies into the text. It will appeal to engineering and business students interested in operations research.

Advanced Planning and Scheduling in Manufacturing and Supply Chains-Yuri Mauergauz 2018-06-25 This book is a guide to modern production planning methods based on new scientific achievements and various practical planning rules of thumb. Several numerical examples illustrate most of the calculation methods, while the text includes a set of programs for calculating production schedules and an example of a cloud-based enterprise resource planning (ERP) system. Despite the relatively large number of books dedicated to this topic, Advanced Planning and Scheduling is the first book of its kind to feature such a wide range of information in a single work, a fact that inspired the author to write this book and publish an English translation. This work consists of two parts, with the first part addressing the design of reference and mathematical models, bottleneck models and multi-criteria models and presenting various sample models. It describes demand-forecasting methods and also includes considerations for aggregating forecasts. Lastly, it provides reference information on methods for data stocking and sorting. The second part of the book analyzes various stock planning models and the rules of safety stock calculation, while also considering the stock traffic dynamics in supply chains. Various batch computation methods are described in detail, while production planning is considered on several levels, including supply planning for customers, master planning, and production scheduling. This book can be used as a reference and manual for current planning methods. It is aimed at production planning department managers, company information system specialists, as well as scientists and PhD students conducting research in production planning. It will also be a valuable resource for students at universities of applied sciences.

Handbook of Production Scheduling-Jeffrey W. Herrmann 2006-08-18 This book concentrates on real-world production scheduling in factories and industrial settings. It includes industry case studies that use innovative techniques as well as academic research results that can be used to improve production scheduling. Its purpose is to present scheduling principles, advanced tools, and examples of innovative scheduling systems to persons who could use this information to improve their own production scheduling.

Optimal Flow Control in Manufacturing Systems-O. Maimon 1998-08-31 This book presents a unified optimal control approach to a large class of problems arising in the field of production planning and scheduling. It introduces a leading optimal flow control paradigm which results in efficient solutions for planning and scheduling problems. This book also introduces the reader to analytical and numerical methods of the maximum principle, used here as a mathematical instrument in modeling and solving production planning and scheduling problems. The book examines control of production flows rather than sequencing of distinct jobs. Methodologically, this paradigm allows us to progress from initial assumptions about a manufacturing environment, through mathematical models and construction of numerical methods, up to practical applications which prove the relevance of the theory developed here to the real world. Given a manufacturing system, the goal is to control the production, subject to given constraints, in such a way that the demands are tracked as closely as possible. The book considers a wide variety of problems encountered in actual production planning and scheduling. Among the problems are production flow sequencing and timing, capacity expansion and deterioration, subcontracting and overtime. The last chapter is entirely

Master Scheduling-John F. Proud 2012-06-15 Master scheduling is an essential planning tool that helps manufacturers synchronize their production cycle with actual market demand. The third edition of this easy-to-follow handbook helps you understand the basic and more advanced concepts of master scheduling, from implementation to capacity planning to final assembly techniques. Packed with handy checklists and examples, Master Scheduling, Third Edition delivers guidelines and techniques for a world-class master schedule.

Production Planning and Industrial Scheduling-Dileep R. Sale 2007-10-16 In today's extremely competitive manufacturing market, effective production planning and scheduling processes are critical to streamlining production and increasing profits. Success in these areas means increased efficiency, capacity utilization, and reduced time required to complete jobs. From the initial stages of plant location and capacity determination to plant operations and manpower scheduling, Production Planning and Industrial Scheduling, Second Edition presents a cohesive outlook on optimization and planning. The author provides a focus on practical applications and integrates logistics and planning in the areas of production and scheduling. Critical Techniques for Optimizing Operational Productivity Starting with the strategic development of plant locations and capacities, the book lays out a clear process for creating an effective production plan with considerations for existing production facilities. It discusses forecasting and aggregate planning, which can predict demands under scenarios. In addition, the book introduces techniques to improve plant efficiencies in various areas, as well as material requirement and inventory and capacity planning. This expanded second edition features new information on safety stock determination, uncertainty in demand, and resource center capacity planning. The problem-specific case studies illustrate the effect of different procedures on the entire system and stress coordination between independent techniques to help achieve optimal efficiency. With the aid of this reference and the proper application of its concepts, industrial managers and engineers can reduce their manufacturing cost, succeed in fulfilling their customers' demands in a timely manner, and attain superior planning and overall control of manufacturing operations.

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Online Scheduling in Manufacturing—Haruhiko Suwa 2012-10-11 Online scheduling is recognized as the crucial decision-making process of production control at a phase of “being in production” according to the released shop floor schedule. Online scheduling can be also considered as one of key enablers to realize prompt capable-to-promise as well as available-to-promise to customers along with reducing production lead times under recent globalized competitive markets. Online Scheduling in Manufacturing introduces new approaches to online scheduling based on a concept of cumulative delay. The cumulative delay is regarded as consolidated information of uncertainties under a dynamic environment in manufacturing and can be collected constantly without much effort at any points in time during a schedule execution. In this approach, the cumulative delay of the schedule has the important role of a criterion for making a decision whether or not a schedule revision is carried out. The cumulative delay approach to trigger schedule revisions has the following capabilities for the practical decision-making: 1. To reduce frequent schedule revisions which do not necessarily improve a current situation with much expense for its operation; 2. To avoid overreacting to disturbances dependent on strongly an individual process or circumstance; and 3. To simplify the monitoring process of a schedule status. Online Scheduling in Manufacturing will be of interest to both practitioners and researchers who work in planning and scheduling in manufacturing. Readers will find the importance of when-to-revise policies during a schedule execution and their influences on scheduling results.

Inventory Management and Production Planning and Scheduling—Edward A. Silver 1998-01-23 This is a revision of a classic which integrates managerial issues with practical applications, providing a broad foundation for decision-making. It incorporates recent developments in inventory management, including Just-In-Time Management, Materials Requirement Planning, and Total Quality Management.

Integration of Process Planning and Scheduling—Rakesh Kumar Phadke 2019-11-01 Both process planning and scheduling are very important functions of manufacturing, which affect together the cost to manufacture a product and the time to deliver it. This book contains various approaches proposed by researchers to integrate the process planning and scheduling functions of manufacturing under varying configurations of shops. It is useful for both beginners and advanced researchers to understand and formulate the Integration Process Planning and Scheduling (IPPS) problem effectively. Features Covers the basics of both process planning and scheduling Presents nonlinear approaches, closed-loop approaches, as well as distributed approaches Discuss the outlook of IPPS in Industry 4.0 paradigm Includes the benchmarking problems on IPPS Contains nature-inspired algorithms and metaheuristics for performance measurements in IPPS Presents analysis of energy-efficient objective for sustainable manufacturing in IPPS

MANUFACTURING PLANNING AND CONTROL SYSTEMS FOR SUPPLY CHAIN MANAGEMENT—Thomas E Vollmann 2008-08-20 Manufacturing Planning and Control Systems for Supply Chain Management is both the classic field handbook for manufacturing professionals in virtually any industry and the standard preparatory text for APICS certification courses. This essential reference has been totally revised and updated to give professionals the knowledge they need.

Planning Production and Inventories in the Extended Enterprise—Karl G Kempf 2011-03-23 In two volumes, Planning Production and Inventories in the Extended Enterprise: A State of the Art Handbook examines Manufacturing Planning and Control; Advanced Planning and Scheduling Systems; Sustainable Product Development and Manufacturing; Uncertainty and Production Planning; Demand Forecasting; Production Capacity; Data in Production and Supply Chain Planning; Financial Uncertainty in SC Models; Field Based Research in Production Control; Collaborative SCM; Sequencing and Coordination in Outsourcing with easy, convenient user interface. We aimed this book at a student audience - final year undergraduates as well as master and Ph. D.

The Planning and Scheduling of Production Systems—Abdelhamik Artiba 2012-12-06 If one accepts the premise that there is no wealth without production, whether at the individual or national level, one is immediately led to the conclusion that the study of productive systems lies at the forefront of subjects that should be intensively, as well as rationally and extensively, studied to achieve the desired ‘sustainable growth’ of society, where the latter is defined as growth in the quality of life that does not waste the available resources in the long run. Since the end of World War II there has been a remarkable evolution in thinking about production, abetted to a large extent by the research of the field of informatics: the computer technology and the edifices that have been built around it, such as information gathering and dissemination worldwide through communication networks, software products, peripheral interfaces, etc. Additionally, the very thought processes that guide and motivate studies in production have undergone fundamental changes which verge on being revolutionary, thanks to developments in operations research and cybernetics.

Basics of Supply Chain Management—Jayant Kumar Bandyopadhyay 2015-10-07 The practice of supply chain management has become widespread in most industries. It is now included in the curriculum of many business schools in the United States and in many countries around the world. A number of professional associations, such as the American Production and Inventory Control Society and the Supply Chain Management Society, offer certification programs in supply chain management for practicing professionals. This book covers the contents of the basic supply chain management course and helps you prepare for the certification examination in supply chain management. Basics of Supply Chain Management covers all modules of a core supply chain management course, including: Transformation process Forecasting and managing demand Planning and production scheduling Inventory management Purchasing management Distribution management Global supply chain issues Authored by a practitioner with the highest level of industrial experience and recognition, this book presents each concept fully and in an accessible manner. To aid understanding, it includes many practical problems, self-study test questions, and case studies. The case studies of 20 different companies can be used to teach graduate courses in supply chain management using the case method. National as well as global demand for supply chain management expertise has been growing exponentially. Therefore, learning supply chain management can lead to a very rewarding professional career path. This book gives you the information you need to get started on that path.

An Introduction to the Mathematics of Planning and Scheduling—Geza Paul Bottlik 2017-03-16 This book introduces readers to the many variables and constraints involved in planning and scheduling complex systems, such as airline flights and university courses. Students will become acquainted with the necessity for scheduling activities under conditions of limited resources in industrial and service environments, and become familiar with methods of problem solving. Written by an expert author with decades of teaching and industry experience, the book provides a comprehensive explanation of the mathematical foundations to solving complex requirements, helping students to understand underlying models, to navigate software applications more easily, and to apply sophisticated
solutions to project management. This is emphasized by real-world examples, which follow the components of the manufacturing process from inventory to production to delivery. Understanding the principles of chemical engineering, systems engineering, and operations management will find this book useful in understanding optimization with respect to planning and scheduling.

Planning and Control of Manufacturing Operations—John Kenworthy 2013-10-11 Effective planning and control of manufacturing operations allows businesses to achieve maximum profitability by reducing uncertainty at all stages of the manufacturing process. In this book, John Kenworthy offers an easy to follow overview of the principles and practice of manufacturing control, with the emphasis throughout on practical approaches and techniques rather than on theoretical discussion. The author demonstrates that many problems are common to different types of manufacturing enterprises and offers practical solutions which can lead to a dramatic increase in overall performance. Sales forecasting, distribution planning, capacity planning, scheduling, and continuous improvement policies are among the subject areas covered. Exercises at the end of each chapter help readers assimilate important points. This book will be an invaluable aid not only for industrial managers who are responsible for manufacturing planning and control, but also for students, trainers and anyone wishing to increase their understanding of manufacturing control systems.

Solving Large-Scale Production Scheduling and Planning in the Process Industries—Georgios M. Kopanos 2018-10-01 This book presents a number of efficient techniques for solving large-scale production scheduling and planning problems in process industries. The main content is supplemented by a wealth of illustrations, while case studies on large-scale industrial applications, ranging from continuous to semicontinuous and batch processes, round out the coverage. The book examines a variety of complex, real-world problems, and demonstrates solutions that are applicable to scenarios and countries around the world. Specifically, these case studies include: • the production planning of the bottling stage of a major brewery in Portugal (Grolsch B.V); • the production scheduling of the Airbus 350 fuselage assembling line (Airbus Industries) in Europe; • the production scheduling of the KRI KRI dairy production facility in Greece; and • the integrated planning of production and utility systems at process industries under uncertainty. Solving Large-scale Production Scheduling and Planning in the Process Industries offers a valuable reference guide for researchers and decision-makers alike, as it shows readers how to evaluate and improve existing installations, and how to design new ones. It is also well suited as a textbook for advanced courses on production scheduling and planning in industry, as it addresses the optimization of production and logistics operations in real-world process industries.

Adaptive Production Planning and Scheduling—Arnd Schirrmann 2016-09-07 The present book summarizes the achievements of the European FP7 project ARUM: Adaptive Production Management toward adaptive production planning and scheduling of highly complex and individualized products. This book also analyzes the application of cutting-edge emerging technologies in two use-cases: production planning and scheduling of the Airbus 350 fuselage assembling line (Airbus Industries) and the production planning of galley inserts (Iacobucci). This book is intended for production managers, application designers, engineers working in industry, as well as researchers and students in the fields of production management and engineering, and industrial automations and informatics.

Behavioral Operations in Planning and Scheduling—Jan C. Fransoo 2010-09-22 Human and organizational factors have a substantial impact on the performance of planning and scheduling processes. Despite widespread and advanced decision support systems, human decision makers are still crucial to improve the operational performance in manufacturing industries. In this text, the state of the art in this area is discussed by experts from a wide variety of engineering and social science disciplines. Moreover, recent results from collaborative studies and a number of field cases are presented. The text is targeted at researchers and graduate students, but is also particularly useful for managers, consultants, and system developers to better understand how human performance can be advanced.

Chemical Production Planning and Control—Christos Maravelias 2021-04-30 Understand common scheduling as well as other advanced operational problems with this valuable reference from a recognized leader in the field. Beginning with basic principles and an overview of linear and mixed-integer programming, this unified treatment introduces the fundamental ideas underpinning most modeling approaches, and will allow you to easily develop your own models. With more than 150 figures, the basic concepts and ideas behind the development of different approaches are clearly illustrated. Addresses a wide range of problems arising in diverse industrial sectors, from oil and gas to fine chemicals, and from commodity chemicals to food manufacturing. A perfect resource for engineering and computer science students, researchers working in the area, and industrial practitioners.

Production Planning and Control—D.R. Kiran 2019-06-28 Production Planning and Control draws on practitioner experiences on the shop floor, covering everything a manufacturing or industrial engineer needs to know on the topic. It provides basic knowledge on production functions that are essential for the effective use of PP&C techniques and tools. It is written in an approachable style, thus making it ideal for readers with limited knowledge of production planning. Comprehensive coverage includes quality management, lean management, factory planning, and how they relate to PP&C. End of chapter questions help readers ensure they have grasped the most important concepts. With its focus on actionable knowledge and broad coverage of essential reference material, this is the ideal PP&C resource to accompany work, research or study. Uses practical examples from the industry to clearly illustrate the concepts presented. Provides a basic overview of statistics to accompany the introduction to forecasting. Covers the relevance of PP&C to key emerging themes in manufacturing technology, including the Industrial Internet of Things and Industry 4.0.

Scheduling in Industry 4.0 and Cloud Manufacturing—Sors Sokolov 2020-06-05 This book has resulted from the activities of IFAC TC 5.2 “Manufacturing Modelling for Management and Control”. The book offers an introduction and advanced techniques of scheduling applications to cloud manufacturing and Industry 4.0 systems for larger audience. This book uncovers fundamental principles and recent developments in the theory and application of scheduling methodology to cloud manufacturing and Industry 4.0. For the first time, it comprehensively conceptualizes scheduling in cloud manufacturing and Industry 4.0 and to systemize these developments in new taxonomies and methodological principles to shape this new research domain. This book addresses the needs of both researchers and practitioners to uncover the challenges and opportunities of scheduling techniques’ applications to cloud manufacturing and Industry 4.0. It comprehensively conceptualizes scheduling in cloud manufacturing and Industry 4.0 systems as a new research domain. The chapters of the book are written by the leading international experts and utilize methods of operations research, industrial engineering and computer science. Such a multi-disciplinary combination is unique and comprehensively deciphers major problem taxonomies, methodologies, and applications to scheduling in cloud manufacturing and Industry 4.0.

Encyclopedia of Production and Manufacturing Management—Paul M. Swamidass 2000-06-30 Production and manufacturing management since the 1980s has absorbed in rapid succession several new production management concepts: manufacturing strategy, focused factory, just-in-time manufacturing, concurrent engineering, total quality management, supply chain management, flexible manufacturing systems, lean production, mass customization, and more. With the increasing globalization of manufacturing, the field will continue to expand. This encyclopedia’s audience includes anyone concerned with manufacturing techniques, methods, and manufacturing decisions.

Efficient Production Planning and Scheduling—Patricia Shirama 1996-12-16 This book is devoted to the problem of manufacturing scheduling, which is the efficient allocation of jobs (orders) over machines (resources) in a manufacturing facility. It offers a comprehensive and integrated perspective on the different aspects required to design and implement systems to efficiently and effectively support manufacturing scheduling decisions.

Manufacturing Scheduling Systems—Jose M. Frimanian 2014-02-19 The book is devoted to the problem of manufacturing scheduling, which is the efficient allocation of jobs (orders) over machines (resources) in a manufacturing facility. It offers a comprehensive and integrated perspective on the different aspects required to design and implement systems to efficiently and effectively support manufacturing scheduling decisions.
Obtaining economic and reliable schedules constitutes the core of excellence in customer service and efficiency in manufacturing operations. Therefore, scheduling forms an area of vital importance with many software tools and in manufacturing companies. However, only a fraction of scheduling research has been translated into practice, due to several reasons. First, the inherent complexity of scheduling has led to an excessively fragmented field in which different sub problems and issues are treated in an independent manner as goals themselves, therefore lacking a unifying view of the scheduling problem. Furthermore, the mathematical tools have sometimes taken preference over practical, general purpose, hands-on approaches when dealing with these problems. Moreover, the paucity of research on implementation issues in scheduling has restricted translation of valuable research insights into industry. "Manufacturing Scheduling Systems: An Integrated View on Models, Methods and Tools" presents the different elements constituting a scheduling system, along with an analysis of the manufacturing context in which the scheduling system is to be developed. Examples and case studies from real implementations of scheduling systems are presented in order to drive the presentation of the theoretical insights. The book is intended for an ample readership including industrial engineering/operations post-graduate students and researchers, business managers, and readers seeking an introduction to the field.

Beyond Manufacturing Resource Planning (MRP II)-Andreas Drexl 2013-11-11 The logic of Manufacturing Resource Planning (MRP II) is implemenented in all areas of manufacturing companies. The methods are in common use or widely known in academia and industry. However, these approaches are not satisfactory to support modern requirements. This book presents recent developments in the field of manufacturing scheduling research. It includes mate rial that somehow dominates the existing MRP II concept, 15 ar ticles written by 36 authors from 10 countries cover many aspects related to MRP II. All papers were selected for being published in this book. We received papers for this issue, we discovered that MRP II is a topic about which not only management scientists but also engineers, computer scientists, and operations researchers from academia as well as practitioners have contributed to this book. This, we hope, makes the book valuable for a broad audience. We thank all authors who submitted papers. And, we are in debt to Dr. Werner Muller from Springer for his support in this book project.

Lotizing and Scheduling for Production Planning-Knut Haase 2012-12-06 Billions of dollars are tied up in the inventories of manufacturing companies, and a small decrease of the inventory and/or production costs without reduction of the service level can increase the profit substantially. Especially in the case of scarce capacity, efficient production schedules are fundamental for short delivery time and on-time delivery which are important competitive priorities. To support decision makers by improving their manufacturing resource planning system with appropriate methods is one of the most of production planning. interesting challenges The following chapters contain new models and new solution strategies which may be helpful for decision makers and for further research in the areas of production planning and operations research. The main subject is on lotizing and scheduling. The objectives and further characteristics of such problems can be inferred from practical need. Thus, before an outline is given, we consider the general objectives of lotizing and scheduling and classify the most important characteristics of such problems in the following sections.

Advances in Production Management Systems-Norio Okino 2013-06-29 This volume includes 41 revised papers selected from 125 papers presented at the 6th IFIP Technical Committee 5/Working Group 5.7 International Conference on Advances in Production Management Systems - APMS'96 - held at Kyoto, Japan, 4-6 November 1996. The task of selecting papers was accomplished by the IPC members voting. The selected papers were reviewed by IPC members who attended the conference. Based on the comments of reviewers, each paper was revised and rewritten in the format of this book. Therefore, the quality of each paper was raised very much. The papers selected in this volume were classified into invited articles and six themes taking into account the perspectives and future challenges in production management. Invited papers provide the overview of the present and future trend in the manufacturing world. Six themes were Next Generation Manufacturing Systems and Production Management, Benchmarking, Integration in Manufacturing and Decentralized Production Management, Strategic Aspects, Production Planning, and Production Scheduling. Each theme covers important area of present and future production management reflecting the recent trend in manufacturing toward globalization, agility in variety production, human centered manufacturing, environment awareness, and sustainability. We hope that this volume will emerge a lot of new ideas to reach the goal of IFIP WG5.7 "Computer Aided Production Management" and to bridge the gap between research and industrial practice in production management systems.

One-of-a-Kind Production-Yüliu Tu 2011-06-21 Despite the numerous competitive advantages of one-of-a-kind production (OKP), the low efficiency and high costs associated with OKP companies threaten to push their business opportunities into the hands of cheaper overseas suppliers. One-of-a-Kind Production introduces a novel strategy and technology to help OKP companies to efficiently mass-produce customized products. In One-of-a-Kind Production, case studies from OKP companies are used to validate the feasibility and effectiveness of the OKP strategy and technology. These case studies include: a structural steel construction company, a manufacturer of specifically ordered compressors and refrigeration systems, a customized high pressure vessel manufacturing company, and a custom window and door Manufacturer. To help readers understand OKP strategy and technology, the authors offer a year’s free access to the OKP Management and Control Software System. This system is based on a new integrated production control-the management concept, namely product production structure. It is a useful tool - and One-of-a-Kind Production is a valuable guide - for production engineers and managerial staff in manufacturing companies, as well as for university researchers and graduate students.

Manufacturing Planning and Control for Supply Chain Management- F. Robert Jacobs 2010 Manufacturing Planning & Control for Supply Chain Management, 6e by Jacobs, Berry, and Whybark (formerly Vollmann, Berry, Whybark, Jacobs) is a comprehensive reference covering both basic and advanced concepts and applications for students and practicing professionals. This textbook provides an understanding of supply planning and control techniques with topics including purchasing, manufacturing, warehouse, and logistics systems. Manufacturing Planning & Control for Supply Chain Management, 6e continues to be organized in a flexible format, with the basic coverage in chapters 1-8 followed.

Systems for Planning and Control in Manufacturing-D. K. Harrison 2002-06-28 The book is divided into two sections: Section 1 - Introduces the subject as a whole and describes the key generic tools and techniques to support the manufacturing organisation. Section 2 - Modern planning and control methods at a detailed level. Each chapter begins with a summary of key concepts and objectives. "Supply Chain Operations Reference Case" is used throughout to illustrate the key elements of the text in a practical context. Introduces a range of systems and management topics supported by examples and case studies.

Supply Chain Management For Dummies-Daniel Stanton 2020-11-11
Increase your knowledge of supply chain management and leverage it properly for your business If you own or make decisions for a business, you need to master the critical concept of supply chain management. Supply Chain Management For Dummies, 2nd Edition guides you to an understanding of what a supply chain is and how to leverage this system effectively across your business, no matter its size or industry. The book helps you learn about the areas of business that make up a supply chain, from procurement to operations to distribution. And it explains the importance of supporting functions like sales, information technology, and human resources. You’ll be prepared to align the parts of this system to meet the needs of customers, suppliers, and shareholders. By viewing the company as a supply chain, you’ll be able to make decisions based on how they will affect every part of the chain. To help you fully understand supply chains, the author focuses on the Supply Chain Operations Reference (SCOR) model. This approach allows all types of professional to handle their work demands. • Use metrics to improve processes • Evaluate business risks through analytics • Choose the right software and automation processes • Plan for your supply chain management certification and continuing education A single business decision in one department can have unplanned effects in one or more areas, such as purchasing or operations. Supply Chain Management For Dummies helps you grasp the connections...
Maintenance Planning and Scheduling-Timothy C. Kister 2006-05-10
This is a hands-on reference guide for the maintenance or reliability engineer and plant manager. As the third volume in the "Life Cycle Engineering series, this book takes the guiding principles of Lean Manufacturing and Maintenance and applies these concepts to everyday planning and scheduling tasks allowing engineers to keep their job shops manufacturing smoothly, while decreasing downtime. The authors offer invaluable advice on the effective use of work orders and schedules and how they fit into the overall maintenance plan. There are not many books out there on planning and scheduling, that go beyond the theory and show the engineer, in a hands-on way, how to use planning and scheduling techniques to improve performance, cut costs, and extend the life of their plant machinery. * The only book that takes a direct look at streamlining planning and scheduling for a Lean Manufacturing Environment * This book shows the engineer how to create and stick to effective schedules * Gives examples and templates in the back of the book for use in day-to-day scheduling and calculations

Fundamentals of Production Planning and Control-Chapman 2008

Multi-Agent-Based Production Planning and Control-Jie Zhang 2017-05-30 At the crossroads of artificial intelligence, manufacturing engineering, operational research and industrial engineering and management, multi-agent based production planning and control is an intelligent and industrially crucial technology with increasing importance. This book provides a complete overview of multi-agent based methods for today's competitive manufacturing processes allowing engineers to keep their job shops running smoothly, while decreasing downtime. The authors also highlight the latest research in numerical optimization methods and wireless sensor networks and their impact on intelligent production planning and control system operation. Enables students, researchers and engineers to understand the fundamentals and theories of multi-agent based production planning and control. Written by an author with more than 20 year's experience in studying and formulating a complete theoretical system in production planning technologies, the book presents the methods for production planning, scheduling and controlling. It is presented using experiments, numerical simulations and theoretical analysis. Comprehensive and concise, Multi-Agent Based Production Planning and Control is aimed at the practicing engineer and graduate student in industrial engineering, operational research, and mechanical engineering. It is also a handy guide for advanced students in artificial intelligence and computer engineering.

Multi-Agent Systems for Concurrent Intelligent Design and Manufacturing-Weiming Shen 2019-09-17 Agent Technology, or Agent-Based Approaches, is a new paradigm for developing software applications. It has been hailed as 'the next significant breakthrough in software development', and 'the new revolution in software' after object technology or object-oriented programming. In this context, an agent is a computer system which is capable of acting autonomously. This is a hands-on guide to the design and implementation of concurrent software systems that are based on agent technology. With the guidance of concrete examples and carefully chosen measurements, metrics, and analytics throughout, the book shows how to use the proven six-step SCOR Model to organize the integration of technology with all key supply chain and operations processes. You will discover how to: PLAN to optimize supply chain networks, demand forecasting, master production scheduling, and S&OP; SOURCE more effectively with today's MRP and procurement/procurement technologies; MAKE higher-value "lean production" products with modern ERP, MES, and short-term scheduling systems; DELIVER the right customer solutions at the right time and cost via advanced DRP, TMS, and order fulfillment systems; and make products with material of state-of-the-art reverse logistics systems. "Continuous improvement via carefully chosen measurements, metrics, and analytics throughout, Myerson presents easy-to-use tools, methodologies, best practices, and real-world examples: all you need to improve speed, accuracy, integration, and collaboration across complex supply chains. He concludes by previewing emerging technologies for maintaining and extending the competitive advantage you've already built.

Advances in Production Management Systems-Jan Olhager 2007-12-24 This book brings together some of the latest thinking by leading experts from around the world on integrating systems and strategies in production management and related issues that are relevant for making production into a competitive resource for the firm. This book is composed of five parts, each focused on a specific theme: Linking systems and strategies; Strategic operations management; IS/IT applications in the value chain; Modelling and simulation; Improving operations.

Advanced Planning in Fresh Food Industries-Matthias Lütke Entrup 2006-03-30 Production planning in fresh food industries is a challenging task. Although modern Advanced Planning and Scheduling (APS) systems could provide significant support, APS implementation numbers in these industries remain low. Therefore, based on an in-depth analysis of three sample fresh food industries (dairy, fresh and processed meat), the author evaluates what APS systems should offer in order to effectively support production planning and how the leading systems currently handle the most distinguishing characteristic of fresh food industries, the short product shelf life. Starting from the identified weaknesses, customized software solutions for each of the sample industries are proposed that allow to optimize the production of fresh foods with respect to shelf life. The book thereby offers valuable insights not only to researchers but also to software providers of APS systems and professionals from fresh food industries.

Lean and Technology-Paul A. Myerson 2016-10-28 This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Focus Your Supply Chain Technology and Maximizing Competitiveness Lean, Six Sigma, and related approaches offer immense potential for improving competitiveness, cost, and customer experience— if you can overcome the challenges of planning and implementation. The well-targeted use of technology can dramatically reduce your risks and accelerate your progress. Until now, however, many guidebooks and consultants have treated Lean primarily as a “pen and pencil” technique. Lean and Technology is the first complete guide to integrating Lean thinking with proven, affordable, and emerging technologies. You’ll learn how companies are linking strategy, the value chain, and IT—and how they are executing on their plans to achieve real competitive advantage. Step by step, Myerson shows how to use the proven six-step SCOR Model to organize the integration of technology with all key supply chain and operations processes. You’ll discover how to: PLAN to optimize supply chain networks, demand forecasting, master production scheduling, and S&OP; SOURCE more effectively with today’s MRP and procurement/procurement technologies; MAKE higher-value “lean production” products with modern ERP, MES, and short-term scheduling systems; DELIVER the right customer solutions at the right time and cost via advanced DRP, TMS, and order fulfillment systems; and make products with material of state-of-the-art reverse logistics systems. "Continuous improvement via carefully chosen measurements, metrics, and analytics throughout, Myerson presents easy-to-use tools, methodologies, best practices, and real-world examples: all you need to improve speed, accuracy, integration, and collaboration across complex supply chains. He concludes by previewing emerging technologies for maintaining and extending the competitive advantage you’ve already built.

This is a hands-on reference guide for the maintenance or reliability engineer and plant manager. As the third volume in the "Life Cycle Engineering series, this book takes the guiding principles of Lean Manufacturing and Maintenance and applies these concepts to everyday planning and scheduling tasks allowing engineers to keep their job shops manufacturing smoothly, while decreasing downtime. The authors offer invaluable advice on the effective use of work orders and schedules and how they fit into the overall maintenance plan. There are not many books out there on planning and scheduling, that go beyond the theory and show the engineer, in a hands-on way, how to use planning and scheduling techniques to improve performance, cut costs, and extend the life of their plant machinery. * The only book that takes a direct look at streamlining planning and scheduling for a Lean Manufacturing Environment * This book shows the engineer how to create and stick to effective schedules * Gives examples and templates in the back of the book for use in day-to-day scheduling and calculations

Fundamentals of Production Planning and Control-Chapman 2008

Multi-Agent-Based Production Planning and Control-Jie Zhang 2017-05-30 At the crossroads of artificial intelligence, manufacturing engineering, operational research and industrial engineering and management, multi-agent based production planning and control is an intelligent and industrially crucial technology with increasing importance. This book provides a complete overview of multi-agent based methods for today's competitive manufacturing processes allowing engineers to keep their job shops manufacturing smoothly, while decreasing downtime. The authors also highlight the latest research in numerical optimization methods and wireless sensor networks and their impact on intelligent production planning and control system operation. Enables students, researchers and engineers to understand the fundamentals and theories of multi-agent based production planning and control. Written by an author with more than 20 year's experience in studying and formulating a complete theoretical system in production planning technologies, the book presents the methods for production planning, scheduling and controlling. It is presented using experiments, numerical simulations and theoretical analysis. Comprehensive and concise, Multi-Agent Based Production Planning and Control is aimed at the practicing engineer and graduate student in industrial engineering, operational research, and mechanical engineering. It is also a handy guide for advanced students in artificial intelligence and computer engineering.

Multi-Agent Systems for Concurrent Intelligent Design and Manufacturing-Weiming Shen 2019-09-17 Agent Technology, or Agent-Based Approaches, is a new paradigm for developing software applications. It has been hailed as 'the next significant breakthrough in software development', and 'the new revolution in software' after object technology or object-oriented programming. In this context, an agent is a computer system which is capable of acting autonomously. This is a hands-on guide to the design and implementation of concurrent software systems that are based on agent technology. With the guidance of concrete examples and carefully chosen measurements, metrics, and analytics throughout, the book shows how to use the proven six-step SCOR Model to organize the integration of technology with all key supply chain and operations processes. You will discover how to: PLAN to optimize supply chain networks, demand forecasting, master production scheduling, and S&OP; SOURCE more effectively with today's MRP and procurement/procurement technologies; MAKE higher-value "lean production" products with modern ERP, MES, and short-term scheduling systems; DELIVER the right customer solutions at the right time and cost via advanced DRP, TMS, and order fulfillment systems; and make products with material of state-of-the-art reverse logistics systems. "Continuous improvement via carefully chosen measurements, metrics, and analytics throughout, Myerson presents easy-to-use tools, methodologies, best practices, and real-world examples: all you need to improve speed, accuracy, integration, and collaboration across complex supply chains. He concludes by previewing emerging technologies for maintaining and extending the competitive advantage you've already built.

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