Operations Research In Production Planning Scheduling And Inventory Control

This is the perfect "field manual" for every supply chain or operations management practitioner and student. The field's only single-volume reference, it's uniquely convenient and uniquely affordable. With nearly 1,500 well-organized definitions, it can help students quickly map all areas of operations and supply chain management, and prepare for case discussions, exams, and job interviews. For instructors, it serves as an invaluable desk reference and teaching aid that goes far beyond typical dictionaries. For working managers, it offers a shared language, with insights for improving any process and supporting any training program. It thoroughly covers: accounting, customer service, distribution, e-business, economics, finance, forecasting, human resources, industrial engineering, industrial relations, inventory management, healthcare management, Lean Sigma/Six Sigma, lean thinking, logistics, maintenance engineering, management information systems, marketing/sales, new product development, operations research, organizational behavior/management, personal time management, production planning and control, purchasing, reliability engineering, quality management, service management, simulation, statistics, strategic management, systems engineering, supply and supply chain management, theory of constraints, transportation, and warehousing. Multiple figures, graphs, equations, Excel formulas, VBA scripts, and references support both learning and application. "... this work should be useful as a desk reference for operations management faculty and practitioners, and it would be highly valuable for undergraduates learning the basic concepts and terminology of the field." Reprinted with permission from CHOICE http://www.cro2.org, copyright by the American Library Association.

An easy-to-read introduction to the concepts associated with the creation of optimization models for production planning starts off this book. These concepts are then applied to well-known planning models, namely mrp and MRP II. From this foundation, fairly sophisticated models for supply chain management are developed. Another unique feature is that models are developed with an eye toward implementation. In fact, there is a chapter that provides explicit examples of implementation of the basic models using a variety of popular, commercially available modeling languages.

This remarkable volume highlights the importance of Production and Operations Management (POM) as a field of study and research contributing to substantial business and social growth. The editors emphasize how POM works with a range of systems—agriculture, disaster management, e-commerce, healthcare, hospitality, military systems, not-for-profit, retail, sports, sustainability, telecommunications, and transport—and how it contributes to the growth of each. Martin K. Starr and Sushil K. Gupta gather an international team of experts to provide researchers and students with a panoramic vision of the field. Divided into eight parts, the book presents the history of POM, and establishes the foundation upon which POM has been built while also revisiting and revitalizing topics that have long been essential. It examines the significance of processes and projects to the fundamental growth of the POM field. Critical emerging themes and new research are examined with open minds and this is followed by opportunities to interface with other business functions. Finally, the next era is discussed in ways that combine practical skill with philosophy in its analysis of POM, including traditional and nontraditional applications, before concluding with the editors' thoughts on the future of the discipline. Students of POM will find this a comprehensive, definitive resource on the state of the discipline and its future directions.

Economics and Operational Research explores the possible connections of the organization of human and material resources by concentrating on the interpretations of management decisions at various levels in the economy. This book discusses economics and mathematics as an analytical tool. Organized into 10 chapters, this book begins with an overview of how consumers manage their own budgets and how manufacturers select their production processes. This text then described generally how consumers and producers react to each other. Other chapters consider the problem of the transportation of goods through busy road networks and the efficiency attained through central planning. This book discusses as well the control of congestion that arises through decentralization and the construction of an overall planning model. The final chapter discusses the important aspects of national planning, wherein the collection of all consumers and producers makes up one large economic system. This book is a valuable resource for management and engineering personnel.

Modern production concepts can be considered as an essential field of economics nowadays. They help to give valuable insights and thus provide important competitive advantages. There is a broad variety of new approaches to Production Planning and Control (PPC), Just-in-Time (JIT), Flexible Manufacturing Systems (FMS), Flexible Automation (FA), Automated Guided Vehicle Systems (AGVS), Total Quality Control (TQC), and Computer Integrated Manufacturing (CIM), all of which are indispensable cornerstones in this context. This book presents in a condensed and easy-to-comprehend form the different contributions of a group of internationally recommended scientists. The varied approaches to modern production concepts are not only based on theoretical foundations but also go one step further in that they present the implementation of these concepts and methods in detail. This close link with practical aspects will help to illuminate the theoretical material for researchers and students in universities. The book will be of major importance for practitioners involved in solving everyday industrial problems. The interdisciplinary nature of these contributions will help to create a new and valuable perspective on the field of production concepts.

Using a wide range of operational research (OR) optimization examples, Applied Operational Research with SAS demonstrates how the OR procedures in SAS work. The book is one of the first to extensively cover the application of SAS procedures to OR problems, such as single criterion optimization, project management decisions, printed circuit board assembly, and multiple criteria decision making. The text begins with the algorithms and methods for linear programming, integer linear programming, and goal programming models. It then describes the principles of several OR procedures in SAS. Subsequent chapters explain how to use these procedures to solve various types of OR problems. Each of these chapters describes the concept of an OR problem, presents an example of the problem, and discusses the specific procedure and its macros for the optimal solution of the problem. The macros include data handling, model building, and report writing. While primarily designed for SAS users in OR and marketing analytics, the book can also be used by readers interested in mathematical modeling techniques. By formulating the OR problems as mathematical models, the authors show how SAS can solve a variety of optimization problems.

Handbook

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 students, trainers and anyone wishing to increase their understanding of manufacturing control systems.

Discover how to apply engineering thinking and data analytics to business operations This comprehensive textbook shows readers how to develop their engineering thinking and analytics to support making

strategic and tactical decisions in managing and control of operations systems and supply chains. The book is created in a modular fashion so that sections and chapters can stand alone and be used within operations courses across the spectrum. Operations Engineering and Management: Concepts, Analytics and Principles for Improvement is based on the author's successful classes in both business and engineering. The book presents concepts and principles of operations management, with a strong emphasis on analytics and a sharp focus on improving operations. You will explore both the engineering approach to operations (e.g., analytics and engineering thinking) and the classic management approach. • Focuses on teaching and developing strong problem-solving analytics skills • Each section is designed to stand alone and can be used in a wide variety of courses • Written by an operations management and engineering expert

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.

Alexander Hübl develops models for production planning and analyzes performance indicators to investigate production system behaviour. He extends existing literature by considering the uncertainty of customer required lead time and processing times as well as by increasing the complexity of multi-machine multi-items production models. Results are on the one hand a decision support system for determining capacity and the further development of the production planning method Conwip. On the other hand, the author develops the JIT intensity and analytically proves the effects of dispatching rules on production lead time.

This textbook provides a comprehensive modeling, reformulation and optimization approach for solving production planning and supply chain planning problems, covering topics from a basic introduction to planning systems, mixed integer programming (MIP) models and algorithms through the advanced description of mathematical results in polyhedral combinatorics required to solve these problems. Based on twenty years worth of research in which the authors have played a significant role, the book addresses real life industrial production planning problems (involving complex production structures with multiple production stages) using MIP modeling and reformulation approach. The book provides an introduction to MIP modeling and to planning systems, a unique collection of reformulation results, and an easy to use problem-solving library. This approach is demonstrated through a series of real life case studies, exercises and detailed illustrations. Review by Jakub Marecek (Computer Journal) The emphasis put on mixed integer rounding and mixing sets, heuristics in-built in general purpose integer programming solvers, as well as on decompositions and heuristics using integer programming should be praised... There is no doubt that this volume offers the present best introduction to integer programming formulations of lotsizing problems, encountered in production planning. (2007)

Basically five problems areas are addressed by operations research specialists in the manufacturing domain: theore- tical and practical aspectsin production planning, facility layout, inventory control, tool management and scheduling. Some of these problems can be solved off-line, while others must be treated as real-time problems impacted by the changing state of the system. Additionally, all of these problems have to be dealt with in an integrated systems framework. Several new topics have recently appeared in the scientific literature which now attract the interest of operations researchers. These include distributed real-time scheduling, hierarchical and heterarchical control systems, integrated algorithms for design, process planning, and equipment level programming, material handling in a finite capacity resource environment, and designing and implementing distributed data management systems. The contributions of these proceedings represent new andunique theoretical developments and applications related to these new topics. They deal with modelling production structures and applying expert systems or neural networks to production systems. Mathematical programming, control theory, simulation, genetic algorithms, tabu search, and simulated annealing are applied as solutiton techniques.

Over the last fifty-plus years, the increased complexity and speed of integrated circuits have radically changed our world. Today, semiconductor manufacturing is perhaps the most important segment of the global manufacturing sector. As the semiconductor industry has become more competitive, improving planning and control has become a key factor for business success. This book is devoted to production planning and control problems in semiconductor wafer fabrication facilities. It is the first book that takes a comprehensive look at the role of modeling, analysis, and related information systems for such manufacturing systems. The book provides an operations research- and computer science-based introduction into this important field of semiconductor manufacturing-related research.

Textbook

"Covers the core concepts and theories of production and operations management in the global as well as Indian context. Includes boxes, solved numerical examples, real-world examples and case studies, practice problems, and videos. Focuses on strategic decision making, design, planning, and operational control"--Provided by publisher.

This advanced introduction to optimal production planning for PCB assembly details ways a reader can improve the efficiency of the assembly line in their company. It presents mathematical modeling techniques and heuristic solution approaches to optimize some critical PCB assembly problems arising in the industry.

Twenty five years ago, in 1964, The Operational Research Society's first International Conference (held at Gonville and Caius College, Cambridge) took as its theme "Operational Research and the Social Sciences". The Conference sessions were organised around topics such as: Organisations and Control; Social Effects of Policies; Conflict Resolution; The Systems Concept; Models, Decisions and Operational Research. An examination of the published proceedings (J.R.Lawrence ed., 1966, Operational Research and the Social Sciences, Tavistock, London) reveals a distinct contrast between the types of contribution made by the representatives of the two academic communities involved. Nevertheless, the Conference served to break down some barriers, largely of ignorance about the objects, methods and findings of each concern. In the ensuing twenty five years, although debate has continued about the relationship between OR and the social sciences, mutual understanding has proved more difficult to achieve than many must have hoped for in 1964.

The aim of this book is to cover various aspects of the Production and Operations Analysis. Apart from the introduction to basic understanding of each topic, the book will also provide insights to various conventional techniques as well as, various other mathematical and nature-based techniques extracted from the existing literature. Concepts like smart factories, intelligent manufacturing, and various techniques of manufacturing will also be included. Various types of numerical examples will also be presented in each chapter and the descriptions will be done in lucid style with figures, point-wise descriptions, tables, pictures to facilitate easy understanding of the subject.

From the Preface: This festschrift is devoted to recognize the career of a man who not only witnessed the growth of operations research from its inception, but also contributed significantly to this growth. Dr. Salah E. Elmaghraby received his doctorate degree from Cornell University in 1958, and since then, his scholarly contributions have enriched the fields of production planning and scheduling and project scheduling. This collection of papers is contributed in his honor by his students, colleagues, and acquaintances. It offers a tribute to the inspiration received from his work, and from his guidance and advice over the years, and recognizes the legacy of his many contributions. Dr. Elmaghraby is a pioneer in the area of project scheduling (in particular, project planning and control through network models, for which he coined the term 'activity networks'.) In his initial work in this area, he developed an algebra based on signal flow graphs and semi-Markov processes for analyzing generalized activity networks involving activities with probabilistic durations. This work led to the development of what was later known as the Graphical Evaluation and Review Technique (GERT), and GERT simulation models. He has made

fundamental contributions in determining criticality indices for activities, in developing methodologies for project compression and time/cost analysis, and in the use of stochastic and chance-constrained programming and Petri Nets for the analysis of activity networks. This volume brings together fourteen contributions, which can be viewed under the following three main themes: operations research and its application in production planning; project scheduling, and production scheduling, inspired by, and in many cases based on, Dr. Elmaghraby's work in these areas. The first five chapters are devoted to the first theme, followed by four chapters each devoted to the other two, respectively. An additional chapter is devoted to the vulnerability of multimodal freight systems.

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.

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.

The Handbook is a comprehensive research reference that is essential for anyone interested in conducting research in supply chain. Unique features include: -A focus on the intersection of quantitative supply chain analysis and E-Business, -Unlike other edited volumes in the supply chain area, this is a handbook rather than a collection of research papers. Each chapter was written by one or more leading researchers in the area. These authors were invited on the basis of their scholarly expertise and unique insights in a particular sub-area, -As much attention is given to looking back as to looking forward. Most chapters discuss at length future research needs and research directions from both theoretical and practical perspectives, -Most chapters describe in detail the quantitative models used for analysis and the theoretical underpinnings; many examples and case studies are provided to demonstrate how the models and the theoretical insights are relevant to real situations, -Coverage of most state-of-the-art business practices in supply chain management.

Offering a step-by-step approach for applying the Nonparametric Method with the Bayesian Approach to model complex relationships occurring in Reliability Engineering, Quality Management, and Operations Research, it also discusses survival and censored data, accelerated lifetime tests (issues in reliability data analysis), and R codes. This book uses the Nonparametric Bayesian approach in the fields of quality management and operations research. It presents a step-by-step approach for understanding and implementing these models, as well as includes R codes which can be used in any dataset. The book helps the readers to use statistical models in studying complex concepts and applying them to Operations Research, Industrial Engineering, Manufacturing Engineering, Computer Science, Quality and Reliability, Maintenance Planning and Operations Management. This book helps researchers, analysts, investigators, designers, producers, industrialists, entrepreneurs, and financial market decision makers, with finding the lifetime model of products, and for crucial decision-making in other markets.

He consider a cone dominance problem: given a "preference" cone IP and a set $n X \sim R$ of available, or feasible, alternatives, the problem is to identify the non dominated elements of X. The nonzero elements of IP are assumed to model the do- nance structure of the problem so that $y s X$ dominates $x s X$ if $Y = x + P$ for some nonzero $p S IP$. Consequently, $x S X$ is nondominated if, and only if, $(\{x\} + IP) n X = \{x\}$ (1.1) He will also refer to nondominated points as efficient points (in X with respect to IP) and we will let EF(XJP) denote the set of such efficient points. This cone dominance problem draws its roots from two separate, but related, ori gins. The first of these is multi-attribute decision making in which the elements of the set X are endowed with various attributes, each to be maximized or minimized.

In two volumes, Planning Production and Inventories in the Extended Enterprise: A State of the Art Handbook examines production planning across the extended enterprise against a backdrop of important gaps between theory and practice. The early chapters describe the multifaceted nature of production planning problems and reveal many of the core complexities. The middle chapters describe recent research on theoretical techniques to manage these complexities. Accounts of production planning system currently in use in various industries are included in the later chapters. Throughout the two volumes there are suggestions on promising directions for future work focused on closing the gaps. Included in Volume 1 are papers on the Historical Foundations of 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 and Subcontracting Operations; Inventory Management; Pricing, Variety and Inventory Decisions for Substitutable Items; Perishable and Aging Inventories; Optimization Models of Production Planning Problems; Aggregate Modeling of Manufacturing Systems; Robust Stability Analysis of Decentralized Supply Chains; Simulation in Production Planning; and Simulation-Optimization in Support of Tactical and Strategic Enterprise Decisions. Included in Volume 2 are papers on Workload and Lead-Time Considerations under Uncertainty; Production Planning and Scheduling; Production Planning Effects on Dynamic Behavior of A Simple Supply Chain; Supply and Demand in Assemble-to-Order Supply Chains; Quantitative Risk Assessment in Supply Chains; A Practical Multi-Echelon Inventory Model with Semiconductor Application; Supplier Managed Inventory for Custom Items with Long Lead Times; Decentralized Supply Chain Formation; A Cooperative Game Approach to Procurement Network Formation; Flexible SC Contracts with Options; Build-to-Order Meets Global Sourcing for the Auto Industry; Practical Modeling in Automotive Production; Discrete Event Simulation Models; Diagnosing and Tuning a Statistical Forecasting System; Enterprise-Wide SC Planning in Semiconductor and Package Operations; Production Planning in Plastics; SC Execution Using Predictive Control; Production Scheduling in The Pharmaceutical Industry; Computerized Scheduling for Continuous Casting in Steelmaking; and Multi-Model Production Planning and Scheduling in an Industrial Environment.

Operations Research in Production Planning and ControlProceedings of a Joint German/US Conference, Hagen, Germany, June 25–26, 1992. Under the Auspices of Deutsche Gesellschaft für Operations Research (DGOR), Operations Research Society of America (ORSA)Springer Science & Business Media

This proceedings volume contains selected and refereed contributions that were presented at the conference on "Recent Developments and New Perspectives of Operations Research in the Area of Production Planning and Control" in Hagen/Germany, 25. - 26. June 1992. This conference was organized with the cooperation of the FernuniversiHit Hagen and was jointly hosted by the "Deutsche Gesellschaft fur Operations Research (DGOR)" and the "Manufacturing Special Interest Group of the Operations Research Society of America (ORSA-SIGMA)". For the organization of the conference we received generous financial support from the sponsors listed at the end of this volume. We wish to express our appreciation to all supporters for their contributions. This conference was the successor of the JOInt ORSA/DGOR-conference in Gaithersburg/Maryland, USA, on the 30. and 31. July 1991. Both OR-societies committed themselves in 1989 to host joint conferences on special topics of interest from the field of operations research. This goal has been successfully realized in the area of production management; and it should be an incentive to conduct similar joint conferences on other topics of operations research in the years to come. The 36 contributions in this proceedings volume deal with general and special problems in production planning as well as approaches and algorithms for their solution. They cover a wide range of operations research within product management and will therefore address a wide circle of interested readers among OR-scientists and professionals alike.

A reference for those working at the interface of operations planning and optimization modeling, Operations Planning: Mixed Integer Optimization Models blends essential theory and powerful

approaches to practical operations planning problems. It presents a set of classical optimization models with widespread application in operations planning. The discussion of each of these classical models begins with the motivation for studying the problem as well as examples of the problem's application in operations planning contexts. The book explores special structural results and properties of optimal solutions that have led to effective algorithmic solution approaches for each problem class. Each of the models and solution methods presented is the result of high-impact research that has been published in the scholarly literature, with appropriate references cited throughout the book. The author highlights the close relationships among the models, examining those situations in which a particular model results as a special case of other related models or how one model generalizes another. Understanding these relationships allows you to more easily characterize new models being developed through their relationships to classical models. The models and methods presented in the book have widespread application in operations planning. It enables you to recognize the structural similarities between models and to recognize these structural elements within other contexts. It also gives you an understanding of various critical operations research techniques and classical operations planning models, without the need to consult numerous sources.

This Book Presents Lucid Treatment Of A Wide Range Of Issues Involved In Production And Operations Management. It Focuses On The Latest Techniques In Production Planning And Control Considered To Be Pivotal For Organizations, Which Aim At Maximizing Their Productivity And Profitability.The Book Further Discusses In Detail The Production System Concept, Facility Location, Plant Layout Design, Production Scheduling, Mass Production Techniques Such As Assembly Line Balancing Maintenance Planning And Control, Scheduling, Quality Control; And Modern Production Management Tools That Include Cim, Tqm And Iso 9000 Series.Primarily Designed As A Textbook For Various Courses Like Bbm, Bba, B.Com., Mba And Also Useful For Students Pursuing Courses, Production And Operations Management, Mechanical, Industrial And Production Engineering Of Bangalore And Other Indian Universities.Salient Features: * Book Is Written In Simple And Lucid Style * Contents Are Presented In A Most Meticulous Manner * Charts Are Provided For Easy Understanding Of The Concepts * Exercises Are Designed For Self-Evaluation And Include Objective Type, Analytical Type And Application Type Questions * Contains Examination Question Bank * Contains Exhaustive Glossary Of Terminologies * Focuses On Materials Management Concepts And Techniques * Focuses On Plant Location And Layout Concepts * Focuses On Statistical Quality Control Concepts And Technique * Focuses On Industrial Engineering Concepts Such As Time Motion Study, Maintenance Management, Waste Management & Automation

Since the beginning of mankind on Earth, if the "busyness" process was successful, then some form of benefit sustained it. The fundamentals are obvious: get the right inputs (materials, labor, money, and ideas); transform them into highly demanded, quality outputs; and make it available in time to the end consumer. Illustrating how operations relate to the rest of the organization, Production and Operations Management Systems provides an understanding of the production and operations management (P/OM) functions as well as the processes of goods and service producers. The modular character of the text permits many different journeys through the materials. If you like to start with supply chain management (Chapter 9) and then move on to inventory management (Chapter 5) and then quality management (Chapter 8), you can do so in that order. However, if your focus is product line stability and quick response time to competition, you may prefer to begin with project management (Chapter 7) to reflect the continuous project mode required for fast redesign rapid response. Slides, lectures, Excel worksheets, and solutions to short and extended problem sets are available on the Downloads / Updates tabs. The project management component of P/OM is no longer an auxiliary aspect of the field. The entire system has to be viewed and understood. The book helps students develop a sense of managerial competence in making decisions in the design, planning, operation, and control of manufacturing, production, and operations systems through examples and case studies. The text uses analytical techniques when necessary to develop critical thinking and to sharpen decision-making skills. It makes production and operations management (P/OM) interesting, even exciting, to those who are embarking on a career that involves business of any kind.

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.

In this book quantitative approaches are proposed for production planning problems in automated manufacturing. In particular, techniques from operations research provide ways to tackle these problems. Special attention is given to the efficient use of tools in automated manufacturing systems. The book presents models and tests solution strategies for different kinds of production decision problems. A case study in the manufacturing of printed circuit boards highlights the methodology. The book will help to understand the nature of production planning problems in automated manufacturing and show how techniques from operations research may contribute to their solution.

The scope of this book is Operations Research methods in Agriculture and a thorough discussion of derived applications in the Agri-food industry. The book summarizes current research and practice in this area and illustrates the development of useful approaches to deal with actual problems arising in the agriculture sector and the agri-food industry. This book is intended to collect in one volume high quality chapters on Methods and Applications in Agriculture and Agri-food industry considering both theoretical issues and application results. Methods applied to problems in agriculture and the agri-food industry include, but are not restricted to, the following themes: Dynamic programming Multi-criteria decision methods Markov decision processes Linear programming Stochastic programming Parameter estimation and knowledge acquisition Learning from data Simulation Descriptive and normative decision tree techniques, including:

agent modelling and simulation, and state of the art surveys Each chapter includes some standard and traditional methodology but also some recent research advances. All the applications presented in the chapters have been inspired and motivated by the demands from the agriculture and food production areas.