Course Description Predictive Maintenance Strategy

In a society that praises and promotes technological advancement, it becomes increasingly essential to review the effects of such rapid technological growth. New high-tech advances need to be examined to determine what they mean to science, society, and industry along with the benefits and challenges they present. The Handbook of Research on

Industrial Advancement in Scientific Knowledge addresses the intersection of technology and science where engineering considerations, mathematical approaches, and management tools provide a better understanding and awareness of Industry 4.0, while also taking into account the impact on current society. This publication identifies methodologies and applications related to decision making, risk and uncertainty, and

design and development not only on scientific and industrial topics but also on social and ethical matters. It is designed for engineers, entrepreneurs, academicians, researchers, managers, and students. With its easy-to-read writing style, Productivity and Reliability-Based Maintenance Management provides a strong yet practical foundation on Total Productive Maintenance (TPM). This comprehensive practical guide

departs from the wait-failure-emergency repair cycle that plagues many industries today. Instead, this text takes a proactive and productive maintenance approach, focusing on how to avoid failure in the first place. By using real-world case studies in every chapter, the author reinforces the importance of sound and proactive maintenance practices. The use of end-of-chapter problems and discussion questions helps to solidify concepts

presented. Productivity and Reliability-Based Maintenance Management is a powerful educational tool for students as well as maintenance professionals and managers. This volume was previously published under the same title in 2004 by Pearson Education, and has been reprinted with permission through an arrangement with the author. Complete Guide to Preventive and Predictive MaintenanceIndustrial Press Inc.

Hardbound. This book presents research results in some of the main diagnostic and maintenance aspects of manufacturing systems, such as concepts and maintenance strategies in CIM, simulation for diagnostics, computer based maintenance and new expert systems for maintenance. The stimulating discussion should be a further contribution to future research in the field of diagnostic and preventive maintenance in order to

develop reliable computer-integrated manufacturing systems.

The 12 Disciplines

Proceedings of the IFIP TC 5/WG 5.3 Working Conference on Diagnostic and Preventive Maintenance Strategies in Manufacturing Systems, Dubrovnik, Yugoslavia, 1-4 September, 1987

MAINTENANCE ENGINEERING AND MANAGEMENT

Maintenance for Industrial Systems

Data-Driven Cognitive Manufacturing - Applications in Predictive Maintenance

and Zero Defect Manufacturing
Complete Guide to Preventive and Predictive Maintenance

This guidebook addresses asset and infrastructure management applicable to all areas of the operation of an airport. The primer portion of the report includes an overview of an asset and infrastructure management program and explores the benefits and costs of implementation. The guidebook portion of the report provides examples from various airports and is designed to be a reference for integrating proven asset and

infrastructure management practices and techniques at airports of all sizes. The report defines an asset and infrastructure management program and its components and how a program relates to daily operations and longer-term planning. In addition, the project that developed ACRP Report 69 also produced a PowerPoint presentation, which can be used to present the benefits of a program to stakeholders--
Safety and Reliability of Complex Engineered Systems contains the Proceedings of the 25th European Safety and Reliability Conference, ESREL

2015, held 7-10 September 2015 in Zurich, Switzerland. It includes about 570 papers accepted for presentation at the conference. These contributions focus on theories and methods in the area of risk, safety and

This book is the second volume in a set of books dealing with the evolution of technology, IT and organizational approaches and what this means for industrial equipment. The authors address this increasing complexity in two parts, focusing specifically on the field of Prognostics and Health Management (PHM). Having tackled the PHM cycle

in the first volume, the purpose of this book is to tackle the other phases of PHM, including the traceability of data, information and knowledge, and the ability to make decisions accordingly. The book concludes with a summary analysis and perspectives regarding this emerging domain, since without traceability, knowledge and decision, any prediction of the health state of a system cannot be exploited.

The comprehensive reference on modern techniques and methods for monitoring and inspecting corrosion Strategic corrosion inspection

and monitoring can improve asset management and life cycle assessment and optimize operational budgets. Advances in computer technologies and electronics have led to very efficient tools for monitoring and inspecting corrosion, including impedance spectroscopy, electrical field signatures, acoustic emissions, and radiographs. This up-to-date reference explains both intrusive and non-intrusive methods of measuring corrosion rates. It covers: The impact of corrosion on the economy and the safe operation of systems in diverse operational environments The various forms of

corrosion, with a focus on the detectability of corrosion damage in the real world The principles of risk-based inspection and various risk assessment methodologies (HAZOP, FMECA, FTA, and ETA), with examples from industry The monitoring of microbiologically induced corrosion (MIC), cathodic protection (CP) systems, and atmospheric corrosion Non-destructive evaluation (NDE) techniques, including visual, ultrasonic, radiographic, electromagnetic, and thermographic inspection Roadmaps used by various industries and organizations for carrying out complex

inspection and monitoring schedules Complete with graphics and illustrations, this is the definitive reference for professionals involved in the maintenance of industrial systems and structures, from oil exploration to chemical plants and infrastructures; consultants; property managers; and civil, materials, and construction engineers.
Optimal Timing of Pavement Preventive Maintenance Treatment Applications
Dynamics in Logistics
17th Conference, AITM 2019, and 14th Conference, ISM 2019, Held as Part of FedCSIS, Leipzig,

Germany, September 1–4, 2019, Extended and Revised Selected Papers
A Roadmap for Transforming Assets into Competitive Advantage
Technologies & Applications, Second Edition
Handbook of Research on Industrial Advancement in Scientific Knowledge

Completely revised, this second edition of a bestseller explores the latest technology advancements and the many changes and developments in the utility and environmental regulation areas. It

includes new information on the state of deregulation and market pricing as well as discussion of smart grid and other emerging programs. The environmental sections reflect the current emphasis on greenhouse gas emissions and carbon management, updates to CAAA regulations and timelines and the latest developments in the use and control of refrigerants. This book serves as the first guideline of the integrative approach, optimal

for our new and young generations. Recent technology advancements in computer vision, IoT sensors, and analytics open the door to highly impactful innovations and applications as a result of effective and efficient integration of those. Such integration has brought to scientists and engineers a new approach –the integrative approach. This offers far more rapid development and scalable architecting when comparing to the traditional

hardcore developmental approach. Featuring biomedical and healthcare challenges including COVID-19, we present a collection of carefully selective cases with significant added-values as a result of integrations, e.g., sensing with AI, analytics with different data sources, and comprehensive monitoring with many different sensors, while sustaining its readability.

This book addresses the steps needed to

monitor health assessment systems and the anticipation of their failures: choice and location of sensors, data acquisition and processing, health assessment and prediction of the duration of residual useful life. The digital revolution and mechatronics foreshadowed the advent of the 4.0 industry where equipment has the ability to communicate. The ubiquity of sensors (300,000 sensors in the new generations of aircraft) produces a

flood of data requiring us to give meaning to information and leads to the need for efficient processing and a relevant interpretation. The process of traceability and capitalization of data is a key element in the context of the evolution of the maintenance towards predictive strategies.

A culmination of 15 years of research, teaching, and consulting, this book shares the best practices, mistakes, victories, and essential steps for

success which the author has gleaned from working with countless organizations. Unlike other books that only focus on the engineering issues (task lists) or management issues (CMMS), this in-depth resource is the first to give true emphasize to the four aspects of success in preventive maintenance systems--engineering, management, economic, and psychological -- thereby enabling readers to have a balanced view and understanding of what

is happening in their organizations. Additionally, it blends concrete actionable steps and structures with the theory behind the steps.
Training Programs for Maintenance Organizations
Water and Wastewater Conveyance Facility Integrity Management
The 1984 Guide to the Evaluation of Educational Experiences in the Armed Services
Knowledge, Traceability and Decision

Strategic MRO

Strategic MRO: A Roadmap for Transforming Assets into Competitive Advantage combines the concepts of enterprise asset management and the associated maintenance, repair, and operating/overhaul (MRO) materials supply chain. It introduces the breakthrough Demand Supply Compression (DSC) methodology, which guides an organization's thinking and doing as it seeks performance improvement. Like

Lean, DSC provides a practical path forward by changing a mind frame and the way in which work is performed. Focused on achieving a future perfect and guided by meaningful principles, organizations will learn to apply compression strategies to drive out waste, time, and non-value adding activities from their strategic MRO practices. Strategic MRO utilizes case studies from a wide variety of businesses to demonstrate strategic MRO

practices and implementation — It can be successfully applied to any business where maximizing return on assets is critical to success. This is much more than a maintenance management or supply chain book because it encompasses both asset management and supply chain practices — Strategic MRO will transform your assets into a strategic advantage.

Applied Mathematics in Engineering and Reliability contains papers presented

at the International Conference on Applied Mathematics in Engineering and Reliability (ICAMER 2016, Ho Chi Minh City, Viet Nam, 4-6 May 2016). The book covers a wide range of topics within mathematics applied in reliability, risk and engineering, including:- Risk and Relia

Facility Integrity Management: Effective Principles and Practices for the Oil, Gas and Petrochemical Industries presents the information

needed to completely understand common failures in the facility integrity management process. By understanding this more comprehensive approach, companies will be able to better identify shortcomings within their respective system that they did not realize existed. To introduce this method, the book provides managers and engineers with a model that ensures major process incidents are avoided, aging facilities are kept in a safe and

reliable state and are operating at maximum levels, and any gaps within the integrity management system are identified and addressed, such as the all too common fragmented reliability programs. The book approaches oil and gas facility management from a universal perspective, effectively charting out existing oil and gas facilities and their associated work processes, including maintenance, operations, and reliability, and then

reconstructs them in order to optimize the way integrity is managed, creating a synergy across the various elements. Easy to read, packed with practical applications applied to real process plant scenarios such as key concepts, process flow charts, handy checklists, real-world case studies and a dictionary, provides a high quality guide for a breakdown free facility, maximizing productivity and return to shareholders. Helps readers gain a

practical and industry specific approach to facility integrity management supported with real-world case studies from oil, gas, and petrochemical facility locations Presents a facility integrity excellence model, a holistic approach for oil and gas companies to drive towards integrity assurance unit monitoring, creating a failure-free environment Identifies and addresses failure of facility processes and

equipment before the onset of performance degradation, keeping equipment maintenance costs low and reliability high

This text is an accessible and comprehensive guide to the principles, practices, functions and challenges of maintenance engineering and management. With a strong emphasis on basic concepts and practical techniques throughout, the book demonstrates in detail how effective technical

competencies in maintenance management can be built in engineering organizations. The book thus provides students and practising engineers alike with the methodologies and tools needed to understand and implement the systems approach to maintenance management. The major goals for the text include : To provide a good understanding of different types of maintenance management systems such as breakdown, preventive, predictive, proactive. To

explain benefits of planned maintenance. To explain condition-based monitoring techniques with focus on vibration monitoring, thermography, and motor condition monitoring. To stress the role of reliability engineering in maintenance with tools like Failure Mode and Effect Analysis, Root Cause Analysis, and Criticality Matrix. To explain activities of maintenance planning with focus on shutdown planning, human resources development,

and tools employed for monitoring. To emphasize management functions such as procurement of spares, measurement of maintenance effectiveness, etc. To give an overview of project management tools such as PERT etc. To introduce computerized maintenance management systems. To explain the basics of hazard analysis and fault tree analysis. Review questions in each chapter, worked-out examples wherever applicable, case studies and an

exclusive appendix on "Selected Questions and Answers" are all designed to provoke critical thinking. This text is suitable for undergraduate and postgraduate courses in Maintenance Engineering taught in the department of mechanical engineering in almost all universities.

RCM--Gateway to World Class Maintenance

ESREL 2011

Proactive Condition Monitoring of Low-Speed Machines

Emerging Trend in the Digital Era
Effective Principles and Practices for the Oil, Gas and Petrochemical Industries
World Class Maintenance Management

This book constitutes extended selected papers from the 17th Conference on Advanced Information Technologies for Management, AITM 2019, and the 14th Conference on Information Systems Management, ISM 2019, held as part of the Federated Conference on Computer Science and Information Systems, FedCSIS, which took place in

Leipzig, Germany, in September 2019. The total of 7 full and 6 short papers presented in this volume were carefully reviewed and selected from a total of 45 submissions. The papers selected to be included in this book contribute to the understanding of relevant trends of current research on and future directions of information technology for management in business and public organizations. They were organized in topical sections named: information technology assessment for future development; methods and models for designing information technology, and

aspects of implementing information technology. This book broadens readers' understanding of proactive condition monitoring of low- speed machines in heavy industries. It focuses on why low-speed machines are different than others and how maintenance of these machines should be implemented with particular attention. The authors explain the best available monitoring techniques for various equipment and the principle of how to get proactive information from each technique. They further put forward possible strategies for application of FEM for detection of faults and

technical assessment of machinery. Implementation phases are described and industrial case studies of proactive condition monitoring are included. Proactive Condition Monitoring of Low-Speed Machines is an essential resource for engineers and technical managers across a range of industries as well as design engineers working in industrial product development.

Global competition has caused fundamental changes in the competitive environment of the manufacturing and service industries. Firms should

develop strategic objectives that, upon achievement, result in a competitive advantage in the market place. The forces of globalization on one hand and rapidly growing marketing opportunities overseas, especially in emerging economies on the other, have led to the expansion of operations on a global scale. The book aims to cover the main topics characterizing operations management including both strategic issues and practical applications. A global environmental business including both manufacturing and services is analyzed. The book contains original

research and application chapters from different perspectives. It is enriched through the analyses of case studies.

About this WCM Book My intent in writing this book is not only to provide a strategic framework on what it takes for an industry to achieve a World Class Maintenance Management structure but to let each one of us understand the role of maintenance in our industry. The role of the maintenance function is not about eliminating failures but understanding that each failure has its own unique and distinctive consequences. Maintenance is not

about repairing and scheduling equipment for repair. It is much more than that and that each of us who belongs to the maintenance function should stand proud because maintenance plays a major role in the success or failure of any industry. Achieving an excellent maintenance structure is not only about having the best Predictive Maintenance instruments and computer software in town, but it has more to do with the people, their culture, and how each maintenance thinks. This book is divided into three parts. Part 1 covers about the basic discipline that has often been neglected

in our equipment. Part 2 refers to the intermediate discipline, which refers to the different strategies, which must be adapted on maintenance to improve our equipment reliability, and Part 3 covers about the more advanced disciplines. Part 1: Basic Discipline - Back to Basics - Discipline 1: Training and Education - Discipline 2: Set-up Maintenance Indices and KPI's - Discipline 3: Autonomous Maintenance - Discipline 4: Addressing Basic Equipment Condition - Discipline 5: Preventive Maintenance Part 2: Intermediate Discipline - Maintenance Strategies - Discipline 6: Spare Parts

Management - Discipline 7: Life Cycle Management - Discipline 8: Lubrication Strategy - Discipline 9: Root Cause Failure Analysis - Discipline 10: Reliability Initiatives (TPM and RCM) Part 3: Advance Discipline - Specialized Strategies - Discipline 11: Predictive Maintenance - Discipline 12: Computerized Maintenance Management Software (CMMS) It is not easy to change a maintenance system that had been in place in the industry for many years, but it is possible for every company to transform from a firefighting to a world-class maintenance structure and this is the

objective of writing this book. I have detailed every step so you can follow them thoroughly. Let us face the facts about your system of maintenance so we can learn from them. Many companies are struggling to survive together with their competition. Maintenance is one big factor where a company can save on cost if one has the right tools and knowledge to convert their maintenance task into an excellent maintenance structure. Reliability cannot be achieved by cutting costs but rather improving reliability will definitely reduce our maintenance and operating costs. There is no such

thing as plant overnight success or one-day transformation. It will take several years to achieve a state of world-class maintenance structure. Being world-class is a long term and not a short term approach. It is a long journey, yet the time spent will be very rewarding. Achieving a world class maintenance structure is not about being the best, but giving it our best and doing it better. Having a world class maintenance structure is not about improving our equipment but improving the people maintaining our equipment. The focus will always be on the people. You need three things to make

this happen, a plan, a team and a big heart. This book is about the first part which is having a plan; I leave the other two elements with you which are a team and a big heart. When your people unite into a common goal, only then can you realize that your maintenance people can move mountains. Millions of dollars can be saved on maintenance by adopting a change in your maintenance system. This is a book for every industry that dares to improve their maintenance human resources

ESREL 2015

Commander's Guide of Preventive Maintenance Indicators
Advances in Safety, Reliability and Risk Management
Operations Management
Predictive Maintenance in Smart Factories
This contributed volume brings together research papers presented at the 4th International Conference on Dynamics in Logistics, held in Bremen, Germany in February 2014. The conference focused on the identification, analysis and description of the dynamics of logistics

processes and networks. Topics covered range from the modeling and planning of processes, to innovative methods like autonomous control and knowledge management, to the latest technologies provided by radio frequency identification, mobile communication, and networking. The growing dynamic poses wholly new challenges: logistics processes and networks must be(come) able to rapidly and flexibly adapt to constantly changing conditions. The book primarily addresses the needs of researchers and practitioners from the field of logistics, but will also be beneficial for graduate students.

For over three decades, Terry Wireman has specialized in the improvement of maintenance and reliability. As an international expert in maintenance management, he has assisted hundreds of clients in North America, Europe and the Pacific Rim to improve their maintenance effectiveness. Through a new 10-volume Maintenance Strategy series, the author makes his expertise in the field accessible to industrial and facility organizations everywhere. The fifth volume in the series will highlight the need for increased skills proficiency in maintenance and reliability organizations today. It begins with a

discussion of the skills shortage, then progresses into how to develop cost-effective and efficient skills training programs. It focuses on modern tools for duty, task, needs analysis and how to convert that data into a complete skills development initiative. The reader will be able to use the information in this to develop or enhance a skills training program in their company.
New, global and extended markets are forcing companies to process and manage increasingly differentiated products with shorter life cycles, low volumes and reduced customer delivery times. In today's global marketplace production

systems need to be able to deliver products on time, maintain market credibility and introduce new products and services faster than competitors. As a result, a new production paradigm of a production system has been developed and a supporting management decision-making approach simultaneously incorporating design, management, and control of the production system is necessary so that this challenge can be effectively and efficiency met. "Maintenance Engineering and its Applications in Production Systems" meets this need by introducing an original and integrated idea of

maintenance: maintenance for productivity. The volume starts with the introduction and discussion of a new conceptual framework based on productivity, quality, and safety supported by maintenance. Subsequent chapters illustrate the most relevant models and methods to plan, organise, implement and control the whole maintenance process (reliability evaluation models and prediction, maintenance strategies and policies, spare parts management, computer maintenance management software – CMMS, and total productive maintenance – TPM, etc.). Several examples of problems supported by

solutions, and real applications to help and test the reader's comprehension are included.
"Maintenance Engineering and its Applications in Production Systems" will certainly be valuable to engineering students, doctoral and post-doctoral students and also to maintenance practitioners, as well as managers of industrial and service companies.
This book presents the outcome of the European project "SERENA", involving fourteen partners as international academics, technological companies, and industrial factories, addressing the design and development of a plug-n-play end-

to-end cloud architecture, and enabling predictive maintenance of industrial equipment to be easily exploitable by small and medium manufacturing companies with a very limited data analytics experience. Perspectives and new opportunities to address open issues on predictive maintenance conclude the book with some interesting suggestions of future research directions to continue the growth of the manufacturing intelligence.

Theory, Methods and Applications (4 Volumes + CD-ROM)

Information Technology for Management: Current

Research and Future Directions
Asset and Infrastructure Management for Airports
IFIP WG 5.7 International Conference, APMS 2018, Seoul, Korea, August 26-30, 2018, Proceedings, Part II
Safety, Reliability and Risk Analysis
The Essential Guide to Business Systems

Water and Wastewater Conveyance: Pumping, Hydraulics, Piping, and Valves provides fundamental, basic information on the conveyance of water and wastewater. Written in straight-forward and easy-to-understand language for professionals and non-professionals alike, it provides the techniques to assist water and wastewater operators to better

understand basic pump operations and applications, maintenance regimens, and troubleshooting procedures. Addressing a multitude of water quality issues, it provides an introduction to water hydraulics, piping systems, tubes, hoses, and ancillaries as well as valves, and the maintenance requirements of each. It also discusses common operational problems and their appropriate corrective actions. Definitions of key terms and self-examination questions are provided at the end of each chapter.

Reliability-Centered Maintenance provides valuable insights into current preventive maintenance practices and issues, while explaining how a transition from the current "preserve equipment" to "preserve function" mindset is the key

ingredient in a maintenance optimization strategy. This book defines the four principal features of RCM and describes the nine essential steps to achieving a successful RCM program. There is an easy to follow example illustrating the Classical RCM systems analysis process using the water treatment system for a swimming pool. As well as the use of software in the system analysis process, making a specific recommendation on a software product to use. Additionally, this new edition possesses an appendix devoted to discussing an economic model that has been used successfully to decide the most cost effective use of maintenance. Top Level managers, engineers, and especially technicians who rely on PM programs in their plant operations can't afford to miss this

inclusive guide to Reliability-Centered Maintenance. Includes detailed instructions for implementing and sustaining an RCM program for extremely cost effective manufacturing Presents seven real-world cross-industry RCM sucess case studies that have profited from this plan Provides essential information on how RCM focuses your maintenance organization to become a recognized "center for profit" Offers over 35 accumulated years of the authors' experiences in Lessons Learned for the proper use of RCM (and pitfalls to avoid)

Advances in Safety, Reliability and Risk Management contains the papers presented at the 20th European Safety and Reliability (ESREL 2011) annual conference in Troyes, France, in September 2011. The books covers a wide range of

topics, including: Accident and Incident Investigation; Bayesian methods; Crisis and Emergency Management; Decision Making

This volume is the published Proceedings of selected papers from the IFAC Symposium, Swansea, 11-13 July 1988, where a forum was provided for discussion of the latest advances and techniques in the education of control and instrument engineers. Seven major topics were covered to aid lecturers in understanding, developing and presenting systems engineering - control and measurement - as a subject to undergraduate and postgraduate students. The teaching of real-time computer control as a topic and laboratory experiments for both continuous and discrete systems were discussed, as was

process control, with the emphasis on providing the student with engineering experience by using scaled-down equipment which would teach practical skills. Included in the Proceedings are papers on measurement and instrumentation, an area felt to be neglected within academic instruction. The development of software tools for systems design within systems engineering was included, as was the exchange of teaching packages and methods between academics, and the education curriculum of systems engineering within developing countries. These Proceedings will prove to be a useful up-to-date guide and reference source for all lecturers and professors involved in curriculum development and the teaching of control and measurement in systems engineering.

Proceedings of the 1st International Conference on Applied Mathematics in Engineering and Reliability (Ho Chi Minh City, Vietnam, 4-6 May 2016)
Knowledge, Reliability and Decision
Vision, Sensing and Analytics: Integrative Approaches
Combined Heating, Cooling & Power Handbook
Productivity and Reliability-Based Maintenance Management
From Prognostics and Health Systems Management to Predictive Maintenance 1

Safety, Reliability and Risk Analysis. Theory, Methods and Applications contains the papers presented at the joint ESREL

(European Safety and Reliability) and SRA-Europe (Society for Risk Analysis Europe) Conference (Valencia, Spain, 22-25 September 2008). The book covers a wide range of topics, including: Accident and Incident Investigation; Crisi

The two-volume set IFIP AICT 535 and 536 constitutes the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2018, held in Seoul, South Korea, in August 2018. The 129 revised full

papers presented were carefully reviewed and selected from 149 submissions. They are organized in the following topical sections: lean and green manufacturing; operations management in engineer-to-order manufacturing; product-service systems, customer-driven innovation and value co-creation; collaborative networks; smart production for mass customization; global supply chain management; knowledge based production planning and control; knowledge based engineering; intelligent diagnostics

and maintenance solutions for smart manufacturing; service engineering based on smart manufacturing capabilities; smart city interoperability and cross-platform implementation; manufacturing performance management in smart factories; industry 4.0 - digital twin; industry 4.0 - smart factory; and industry 4.0 - collaborative cyber-physical production and human systems.

Business industries depend on advanced models and tools that provide an optimal and objective decision-making process, ultimately

guaranteeing improved competitiveness, reducing risk, and eliminating uncertainty. Thanks in part to the digital era of the modern world, reducing these conditions has become much more manageable. Advanced Models and Tools for Effective Decision Making Under Uncertainty and Risk Contexts provides research exploring the theoretical and practical aspects of effective decision making based not only on mathematical techniques, but also on those technological tools that are available nowadays in the

Fourth Industrial Revolution. Featuring coverage on a broad range of topics such as industrial informatics, knowledge management, and production planning, this book is ideally designed for decision makers, researchers, engineers, academicians, and students.

Systems Engineering Processes for Developing Traffic Signal Systems

Selected Papers from the IFAC Symposium, Swansea, UK, 11-13 July 1988

Safety and Reliability of Complex Engineered

Systems
Advances in Production Management Systems. Smart Manufacturing for Industry 4.0
From Prognostics and Health Systems Management to Predictive Maintenance 2
Proceedings of the 4th International Conference LDIC, 2014 Bremen, Germany