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ASSESSMENT OF THE ERGONOMIC QUALITY OF HAND-HELD TOOLS AND COMPUTER INPUT DEVICES

IOS Press "The International Ergonomics Association (IEA) is currently developing standards for Ergonomic Quality in Design (EQUID) which primarily intends to promote ergonomics principles and the adaptation of a process approach for the development of products, work systems and services. It is important to assess the ergonomic quality of products, hand-held tools and computer input devices through working processes that represent reality. Well-designed working tools can be expected to reduce or eliminate fatigue, discomfort, accidents and health problems and they can lead to improvements in productivity and quality. Furthermore, absenteeism, job turnover and training costs can positively be influenced by the working tools and the environment. Not all these short-term and long-term issues of working tools can be quantified in pragmatically oriented ergonomic research approaches. But multi-channel electromyography, which enables the measurement of the physiological costs of the muscles involved in handling tools during standardized working tests, and subjective assessments of experienced subjects enable a reliable insight in the essential ergonomic criteria of working tools and products. In this respect it is advantageous to provide a test procedure, in which working tests can be carried out alternating both with test objects and reference models."

ASSESSMENT OF THE ERGONOMIC QUALITY OF HAND-HELD TOOLS AND COMPUTER INPUT D.

GLOBAL ERGONOMICS

Elsevier Jointly hosted by the Ergonomics Society of South Africa (ESSA) and the International Ergonomics Association (IEA), this conference was attended by over 300 delegates and represented the largest and most prestigious gathering of eminent international ergonomists in the history of Africa. It also marked the beginning of a revival in concern for the well-being and productivity of people at work in South Africa. The conference aimed to juxtapose two great ergonomic themes – the under-developed ethos of the affluent societies and the technologically advanced ethos of the most affluent societies. The structure of the proceedings reflects this with the first section addressing the priorities of countries in transition and the last section addressing the priorities of the most industrially-developed countries, who have, by and large, long since solved the sorts of ergonomics problems currently of concern in the under-developed world. In between these, in a roughly hierarchical arrangement from micro- to macro- levels of analysis, are sections which collectively help span the whole field of ergonomics. Section overviews are provided to outline the topics included in each section.

ERGONOMICS FOR ALL: CELEBRATING PPCOE'S 20 YEARS OF EXCELLENCE

SELECTED PAPERS OF THE PAN-PACIFIC CONFERENCE ON ERGONOMICS, 7-10 NOVEMBER 2010, KAOHSIUNG, TAIWAN

CRC Press This book contains the selected papers presented at the 20th anniversary meeting of the Pan-Pacific Conference on Ergonomics organized by the Ergonomics Society of Taiwan. PPCOE 2010 is an international forum aimed to bring together scholars and practitioners from around the world to exchange and disseminate the latest developments in erg

ELECTROMYOGRAPHY IN ERGONOMICS

CRC Press Electromyography (EMG) is the study of muscle behaviour via electronic means, and is thus a technique fundamental to ergonomics, physiology and biomechanics. This text describes the principles of EMG and its application domains, focusing on anatomy, biology, muscle characteristics, physics, mechanics, EMG signal, noise/artifacts/errors, equipment/devices/techniques, interpretation and computerised data acquisition, and analysis. The book provides a theoretical base, a strategic framework and user experiences.

ADVANCES IN SOCIAL AND ORGANIZATIONAL FACTORS

AHFE International (USA) An exploration of how ergonomics can contribute to the solution of important societal and engineering challenges, *Advances in Social and Organizational Factors* discusses the optimization of sociotechnical systems, including their organizational structures, policies, and processes. It includes coverage of communication, crew resource management, work design, design of working times, teamwork, participatory design, community ergonomics, cooperative work, new work paradigms, organizational culture, virtual organizations, telework, and quality management. The book provides research on urban infrastructures and how to shape urban spaces, including stadiums and museums. It covers warning systems in cars, voice-based interfaces, and the positive effects on manufacturing processes available from health informatics and management systems. Several chapters examine the role human factors can play in counter-terrorism efforts and in interpreting deceptive behaviors. They provide suggestions on how to improve enterprise resource planning systems and stress the importance of lifelong learning, personalized learning, and work-life balance. The book also highlights issues with special populations, detailing how to design and adapt products and work situations for these groups. In addition to exploring the challenges faced in optimizing sociotechnical systems, the book underlines themes that play a role in all the challenges and how they are linked to each other. It concludes with an exploration of emotional ergonomics and the important positive effects of making people happy and healthy. With authors from around the globe, the book supplies a broad look at current challenges and possible solutions.

PROCEEDINGS OF THE 21ST CONGRESS OF THE INTERNATIONAL ERGONOMICS ASSOCIATION (IEA 2021)

VOLUME V: METHODS & APPROACHES

Springer Nature This book presents the proceedings of the 21st Congress of the International Ergonomics Association (IEA 2021), held online on June 13-18, 2021. By highlighting the latest theories and models, as well as cutting-edge technologies and applications, and by combining findings from a range of disciplines including engineering, design, robotics, healthcare, management, computer science, human biology and behavioral science, it provides researchers and practitioners alike with a comprehensive, timely guide on human factors and ergonomics. It also offers an excellent source of innovative ideas to stimulate future discussions and developments aimed at applying knowledge and techniques to optimize system performance, while at the same time promoting the health, safety and wellbeing of individuals. The proceedings include papers from researchers and practitioners, scientists and physicians, institutional leaders, managers and policy makers that contribute to constructing the Human Factors and Ergonomics approach across a variety of methodologies, domains and productive sectors. This volume includes papers addressing the following topics: Working with Computer Systems, Human Modelling and Simulation, Neuroergonomics, Biomechanics, Affective Design, Anthropometry, Advanced Imaging.

ADVANCES IN PHYSICAL ERGONOMICS AND HUMAN FACTORS: PART I

AHFE International (USA) The discipline of human factors and ergonomics (HF/E) is concerned with the design of products, process, services, and work systems to assure their productive, safe and satisfying use by people. Physical ergonomics involves the design of working environments to fit human physical abilities. By understanding the constraints and capabilities of the human body and mind, we can design products, services and environments that are effective, reliable, safe and comfortable for everyday use. This book focuses on the advances in the physical HF/E, which are a critical aspect in the design of any human-centered technological system. The ideas and practical solutions described in the book are the outcome of dedicated research by academics and practitioners aiming to advance theory and practice in this dynamic and all-encompassing discipline. A thorough understanding of the physical characteristics of a wide range of people is essential in the development of consumer products and systems. Human performance data serve as valuable information to designers and help ensure that the final products will fit the targeted population of end users. Mastering physical ergonomics and safety engineering concepts is fundamental to the creation of products and systems that people are able to use, avoidance of stresses, and minimization of the risk for accidents.

INTERNATIONAL ENCYCLOPEDIA OF ERGONOMICS AND HUMAN FACTORS, SECOND EDITION - 3 VOLUME SET

CRC Press The previous edition of the International Encyclopedia of Ergonomics and Human Factors made history as the first unified source of reliable information drawn from many realms of science and technology and created specifically with ergonomics professionals in mind. It was also a winner of the Best Reference Award 2002 from the Engineering Libraries Division, American Society of Engineering Education, USA, and the Outstanding Academic Title 2002 from Choice Magazine. Not content to rest on his laurels, human factors and ergonomics expert Professor Waldemar Karwowski has overhauled his standard-setting resource, incorporating coverage of tried and true methods, fundamental principles, and major paradigm shifts in philosophy, thought, and design. Demonstrating the truly interdisciplinary nature of this field, these changes make the second edition even more comprehensive, more informative, more, in a word, encyclopedic. Keeping the format popularized by the first edition, the new edition has been completely revised and updated. Divided into 13 sections and organized alphabetically within each section, the entries provide a clear and simple outline of the topics as well as precise and practical information. The book reviews applications, tools, and innovative concepts related to ergonomic research. Technical terms are defined (where possible) within entries as well as in a glossary. Students and professionals will find this format invaluable, whether they have ergonomics, engineering, computing, or psychology backgrounds. Experts and researchers will also find it an excellent source of information on areas beyond the range of their direct interests.

DIGITAL HUMAN MODELING AND APPLICATIONS IN HEALTH, SAFETY, ERGONOMICS AND RISK MANAGEMENT. HUMAN BODY MODELING AND ERGONOMICS

4TH INTERNATIONAL CONFERENCE, DHM 2013, HELD AS PART OF HCI INTERNATIONAL 2013, LAS VEGAS, NV, USA, JULY 21-26, 2013, PROCEEDINGS, PART II

Springer This two volume set (LNCS 8025-8026) constitutes the refereed proceedings of the Fourth International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management, formerly International Conference on Digital Human Modeling, DHM 2013, held as part of the 15th International Conference on Human-Computer Interaction, HCI 2013, held in Las Vegas, USA in July 2013, jointly with 12 other thematically similar conferences. The total of 1666 papers and 303 posters presented at the HCI 2013 conferences was carefully reviewed and selected from 5210 submissions. These papers address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The papers accepted for presentation thoroughly cover the entire field of Human-Computer Interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas. This two-volume set contains 91 papers. The papers in this volume focus on the following topics: digital human modeling and ergonomics in working environments; ergonomics of work with computers; anthropometry, posture and motion modeling.

DESIGN FOR TOMORROW—VOLUME 1

PROCEEDINGS OF ICORD 2021

Springer Nature This book showcases cutting-edge research papers from the 8th International Conference on Research into Design (ICoRD 2021) written by eminent researchers from across the world on design processes, technologies, methods and tools, and their impact on innovation, for supporting design for a connected world. The theme of ICoRD'21 has been "Design for Tomorrow". The world as we know it in our times is increasingly becoming connected. In this interconnected world, design has to address new challenges of merging the cyber and the physical, the smart and the mundane, the technology and the human. As a result, there is an increasing need for strategizing and thinking about design for a better tomorrow. The theme for ICoRD'21 serves as a provocation for the design community to think about rapid changes in the near future to usher in a better tomorrow. The papers in this book explore these themes, and their key focus is design for tomorrow: how are products and their development be addressed for the immediate pressing needs within a connected world? The book will be of interest to researchers, professionals and entrepreneurs working in the areas on industrial design, manufacturing, consumer goods, and industrial management who are interested in the new and emerging methods and tools for design of new products, systems and services.

OCCUPATIONAL SAFETY AND HYGIENE II

CRC Press Occupational Safety and Hygiene II contains selected papers from the International Symposium on Occupational Safety and Hygiene (SHO2014, Guimarães, Portugal, 13-14 February 2014), which was organized by the Portuguese Society for Occupational Safety and Hygiene (SPOSHO). The contributions focus on selected topics, which include (but is not limited to): Occupational safety Risk assessment Safety management Ergonomics Management systems Environmental ergonomics Physical environments Construction safety, and Human factors The contributions in Occupational Safety and Hygiene II are mainly based on research carried out at universities and other research institutions, but also on practical studies developed by Occupational Health & Safety (OHS) Practitioners within their companies. Accordingly, this book will be a helpful text to get acquainted with the state-of-the-art of the research within the mentioned domains, as well as with some practical tools and approaches that are currently used by OHS professionals in a global context.

ADVANCES IN INDUSTRIAL ERGONOMICS AND SAFETY V

CRC Press Each year public awareness of the importance of ergonomics for improving people's working conditions and home environment increases, as the application of ergonomics brings more and more tangible benefits to society at large. The Annual International Industrial Ergonomics and Safety Conference held in Copenhagen, Denmark in June 1993, sponsored by the International Foundation for Industrial Ergonomics and Safety Research brought together more than 200 ergonomic professionals from North America, Europe and Asia to present over 120 research papers, in a quest to share their knowledge of new developments in design for people and improving safety at work.; This volume is a reference on the variety of problems that industrial and office workers face today, and moreover, offers solutions in the drive towards the safe workplace.

ADVANCES IN ERGONOMICS IN DESIGN, USABILITY & SPECIAL POPULATIONS: PART II

AHFE International (USA) Successful interaction with products, tools and technologies depends on usable designs and accommodating the needs of potential users without requiring costly training. In this context, this book is concerned with emerging ergonomics in design concepts, theories and applications of human factors knowledge focusing on the discovery, design and understanding of human interaction and usability issues with products and systems for their improvement. This book will be of special value to a large variety of professionals, researchers and students in the broad field of human modeling and performance who are interested in feedback of devices' interfaces (visual and haptic), user-centered design, and design for special populations, particularly the elderly. We hope this book is informative, but even more - that it is thought provoking. We hope it inspires, leading the reader to contemplate other questions, applications, and potential solutions in creating good designs for all.

ADVANCES IN HUMAN FACTORS AND ERGONOMICS 2012- 14 VOLUME SET

PROCEEDINGS OF THE 4TH AHFE CONFERENCE 21-25 JULY 2012

CRC Press With contributions from an international group of authors with diverse backgrounds, this set comprises all fourteen volumes of the proceedings of the 4th AHFE Conference 21-25 July 2012. The set presents the latest research on current issues in Human Factors and Ergonomics. It draws from an international panel that examines cross-cultural differences, design issues, usability, road and rail transportation, aviation, modeling and simulation, and healthcare.

FROM ROBOT TO HUMAN GRASPING SIMULATION

Springer Science & Business Media The human hand and its dexterity in grasping and manipulating objects are some of the hallmarks of the human species. For years, anatomic and biomechanical studies have deepened the understanding of the human hand's functioning and, in parallel, the robotics community has been working on the design of robotic hands capable of manipulating objects with a performance similar to that of the human hand. However, although many researchers have partially studied various aspects, to date there has been no comprehensive characterization of the human hand's function for grasping and manipulation of everyday life objects. This monograph explores the hypothesis that the confluence of both scientific fields, the biomechanical study of the human hand and the analysis of robotic manipulation of objects, would greatly benefit and advance both disciplines through simulation. Therefore, in this book, the current knowledge of robotics and biomechanics guides the design and implementation of a simulation framework focused on manipulation interactions that allows the study of the grasp through simulation. As a result, a valuable framework for the study of the grasp, with relevant applications in several fields such as robotics, biomechanics, ergonomics, rehabilitation and medicine, has been made available to these communities.

ADVANCES IN COGNITIVE ERGONOMICS

CRC Press The chapters in the book come from an international group of authors with diverse backgrounds including ergonomics, psychology, architecture, computer science, engineering, and sociology. Specific topics include biometric systems development, military command and control, cellular phone interface design, methodologies for workplace design, medical device design, cockpit display and decision tool design for pilots, driver visual and cognitive processes, and performance of inspection tasks in manufacturing operations; and extend to human-automation integration in future aviation systems, novel 3-D display technologies for enhancing information analysis, training methods for mental models, approaches to activity analysis, new research-oriented frameworks and paradigms in training, and the use of virtual reality for skill development and assessment. The book is divided into sections covering: I. Cultural Differences in Computing Systems Design II. Decision Making and Decision Support III. Desktop/Mobile Interface Design IV. Ergonomics in Design V. Ergonomics in Product Design VI. Human Factors in Aviation Systems VII. Human Factors in Driving VIII. Human Factors in Manufacturing IX. Human Factors in NextGen Operations X. Information Visualization for Situation Awareness XI. Mental Models XII. Perceptuo-Motor Skills & Psychophysical Assessment XIII. Task Analysis XIV. Training Technology XV. Virtual Reality for Behavior Assessment XVI. Virtual Reality for Psychomotor Training The implications of all this work include design recommendations for complex systems and commercial products, new procedures for operator training and self-regulation as well as methods for accessibility to systems, and specification of ergonomic interventions at the user. It is expected that this book will be of special value to practitioners involved in design process development, design and prototyping of systems, products and services, as well as training process design for a broad range of applications and markets in various countries. Seven other titles in the Advances in Human Factors and Ergonomics Series are: Advances in Human Factors and Ergonomics in Healthcare Advances in Applied Digital Human Modeling Advances in Cross-Cultural Decision Making Advances in Occupational, Social and Organizational Ergonomics Advances in Human Factors, Ergonomics and Safety in Manufacturing and Service Industries Advances in Ergonomics Modeling & Usability Evaluation Advances in Neuroergonomics and Human Factors of Special Populations

ADVANCES IN SOCIAL AND OCCUPATIONAL ERGONOMICS

PROCEEDINGS OF THE AHFE 2018 INTERNATIONAL CONFERENCE ON SOCIAL AND OCCUPATIONAL ERGONOMICS, JULY 21-25, 2018, LOEWS SAPPHIRE FALLS RESORT AT UNIVERSAL STUDIOS, ORLANDO, FLORIDA, USA

Springer This book reports on cutting-edge research on social and occupational ergonomics, presenting innovative contributions to the optimization of sociotechnical management systems related to organizational, policy, and logistical issues. It discusses timely topics related to communication, crew resource management, work design, participatory design, as well as teamwork, community ergonomics, cooperative work, and warning systems, and explores new work paradigms, organizational cultures, virtual organizations, telework, and quality management. The book also describes pioneering infrastructures implemented for different purposes such as urban, health, and enterprise, and examines the changing role of automated systems, offering innovative solutions that address the needs of particular populations. Based on the AHFE 2018 International Conference on Social and Occupational Ergonomics, held in Orlando, Florida, USA on July 21-25, 2018, the book provides readers with a comprehensive overview of the current challenges in both organizational and occupational ergonomics, highlighting key connections between them and underlining the importance of emotional factors in influencing human performance.

ERGONOMICS FOR IMPROVED PRODUCTIVITY

PROCEEDINGS OF HWWE 2017

Springer Nature p="" This highly informative and carefully presented book focuses on the fields of ergonomics/human factors and discusses the future of the community vis-à-vis health problems, productivity, aging, etc. Ergonomic intercession must be seen in light of its effect on productivity because ergonomic solutions will improve productivity as the reduction of environmental stressors, awkward postures and efforts lead to a reduction in task execution time. The book provides promising evidence that the field of ergonomics continues to thrive and develop deeper insights into how work environments, products and systems can be developed to meet needs, demands and limitations of humans and how they can support productivity improvements. Some of the themes covered are anthropometry and workplace design, biomechanics and modelling in ergonomics, cognitive and environmental ergonomics, ergonomic intervention and productivity, ergonomics in transport, mining, agriculture and forestry, health systems, work physiology and sports ergonomics, etc. This book is beneficial to academicians, policymakers and the industry alike. ^

ERGONOMICS FOR THE NEW MILLENNIUM: COMPLEX SYSTEMS AND PERFORMANCE

HUMAN-CENTERED TECHNOLOGY FOR A BETTER TOMORROW

PROCEEDINGS OF HUMENS 2021

Springer Nature This book acts as a compilation of papers presented in the Human Engineering Symposium (HUMENS 2021). The symposium theme, "Human-centered Technology for A Better Tomorrow," covers the following research topics: ergonomics, biomechanics, sports technology, medical device and instrumentation, artificial intelligence / machine learning, industrial design, rehabilitation, additive manufacturing, modelling and bio-simulation, and signal processing. Fifty-nine articles published in this book are divided into four parts, namely Part 1—Artificial Intelligence and Biosimulation, Part 2—Biomechanics, Safety and Sports, Part 3—Design and Instrumentation, and Part 4—Ergonomics.

ADVANCES IN OCCUPATIONAL ERGONOMICS AND SAFETY

PROCEEDINGS OF THE XIIIITH ANNUAL INTERNATIONAL OCCUPATIONAL ERGONOMICS AND SAFETY CONFERENCE 1998

IOS Press Ergonomics touches every man, woman and child each day of their lives whether they recognise it or not. Ergonomics (or lack of it) plays a more significant role in the lives of about two-thirds of the world's population over 10 years of age who work for one-third of their lives to make a living. There are 120 million occupational accidents and injuries and 200,000 fatalities each year according to WHO 95. Occupational accidents, injuries and fatalities are undesired events. The occupational activities are planned and designed, and executed with a purpose under supervision but accidents are not. Hence it stands to reason that better planning, design and execution will help to reduce these undesirable outcomes. One must also recognise that under global scheme of biological evolution, the human beings were not designed to endure a life long exposure to artificial activities repetitively. Thus occupational health problems are inevitable if we do not return to nature for our sustenance. As a society, we have chosen to live and work as we do. In fact, there is a far rapid evolution (mutation and speciation) of occupations than of any biological organism. This places us in a situation where better planning, design and execution of our occupational activities have become absolute necessity. However, since ergonomics is a modifier and not a causal factor, its significance does not become immediately apparent to us. Perhaps it is for this reason that even in developed world occupational health services are available to between 20% to 50% of the work force and less than 10% of the workforce in the developing countries. Occupational health services are remedial approaches. The rational wisdom of the human race should strive to get proactive control of undesirable outcomes through ergonomics. Unfortunately, it is sadly lacking even today. On an optimistic note one can observe that its presence and application is slowly increasing.

PHYSICAL MEDICINE AND REHABILITATION

PRINCIPLES AND PRACTICE

Lippincott Williams & Wilkins The gold-standard physical medicine and rehabilitation text is now in its Fourth Edition—with thoroughly updated content and a more clinical focus. More than 150 expert contributors—most of them new to this edition—address the full range of issues in contemporary physical medicine and rehabilitation and present state-of-the-art patient management strategies, emphasizing evidence-based recommendations. This edition has two separate volumes on Physical Medicine and Rehabilitation Medicine. Each volume has sections on principles of evaluation and management, management methods, major problems, and specific disorders. Treatment algorithms and boxed lists of key clinical facts have been added to many chapters.

PROCEEDINGS OF THE XIVTH TRIENNIAL CONGRESS OF THE INTERNATIONAL ERGONOMICS ASSOCIATION AND THE 44TH ANNUAL MEETING OF THE HUMAN FACTORS AND ERGONOMICS SOCIETY

ERGONOMICS FOR THE NEW MILLENNIUM, JULY 29 THROUGH AUGUST 4, 2000, SAN DIEGO, CALIFORNIA, USA.

ADVANCES IN PHYSICAL ERGONOMICS & HUMAN FACTORS

PROCEEDINGS OF THE AHFE 2018 INTERNATIONAL CONFERENCE ON PHYSICAL ERGONOMICS & HUMAN FACTORS, JULY 21-25, 2018, LOEWS SAPPHIRE FALLS RESORT AT UNIVERSAL STUDIOS, ORLANDO, FLORIDA, USA

Springer This book reports on the state of the art in physical ergonomics and addresses the design of products, processes, services, and work systems to ensure they are productive, safe, and enjoyable for people to use. The human body's responses to physical and physiological work demands, strain injuries from repetition, vibration, force, and posture are the most common types of issues examined, along with their design implications. The book explores a wide range of topics in physical ergonomics, including the consequences of repetitive motion, materials handling, workplace safety, the usability of portable devices, design, working postures, and the work environment. Mastering physical ergonomics and safety engineering concepts is fundamental to creating products and systems that people can safely and conveniently use, as well as avoiding stresses and minimizing the risk of accidents. Based on the AHFE 2018 Conference on Physical Ergonomics and Human Factors, held on July 21-25, 2018, in Orlando, Florida, USA, this book provides readers with a comprehensive perspective on the current challenges in physical ergonomics, which is a critical aspect in the design of any human-centered technological system, and for factors influencing human performance.

PEOPLE AND COMPUTERS VII

Cambridge University Press Covers topics like hypertext, multimedia and graphics. Essential for designers, researchers and manufacturers.

OCCUPATIONAL ERGONOMICS

THEORY AND APPLICATIONS, SECOND EDITION

CRC Press In the fifteen years since the publication of Occupational Ergonomics: Theory and Applications significant advances have been made in this field. These advances include understanding the impact of ageing and obesity on workplace, the role of ergonomics in promoting healthy workplaces and healthy life styles, the role of ergonomic science in the design of consumer products, and much more. The caliber of information and the simple, practical ergonomics solutions in the second edition of this groundbreaking resource, though, haven't changed. See What's New in the Second Edition: Enhanced coverage of ergonomics in the international arena Emerging topics such as Healthcare Ergonomics and economics of ergonomics Coverage of disability management and psychosocial rehabilitation aspects of workplace and its ergonomics implication Current ergonomics solutions from "research to practice" Synergy of healthy workplaces with healthy lifestyles Impact of physical agents on worker health/safety and its control Additional problems with solutions in the appendix The book covers the fundamentals of ergonomics and the practical application of those fundamentals in solving ergonomic problems. The scope is such that it can be used as a reference for graduate students in the health sciences, engineering, technology and business as well as professional practitioners of these disciplines. Also, it can be used as a senior level undergraduate textbook, with solved problems, case studies, and exercises included in several chapters. The book blends medical and engineering applications to solve musculoskeletal, safety, and health problems in a variety of traditional and emerging industries ranging from the office to the operating room to operations engineering.

ADVANCES IN INDUSTRIAL ERGONOMICS VI

CRC Press Topics Include: applications of engineering anthropometry, postural strain and discomfort, industrial injury prevention, manual materials handling, and ergonomics of rehabilitation and healthcare systems.

PATTY'S INDUSTRIAL HYGIENE, 4-VOLUME SET

John Wiley & Sons Since the first edition in 1948, Patty's Industrial Hygiene and Toxicology has become a flagship publication for Wiley. In the course of its nearly six decades in print, it has evolved into a standard reference for the fields of occupational health and toxicology. The volumes on Industrial Hygiene are cornerstone reference works for chemists, engineers, toxicologists, and occupational safety personnel. Since the 5th edition was published, the field of IH has changed with personnel often working for multinational firms, self-employed, at small consulting firms. Their environment has changed and expanded, and thus also the types of information and resources required have changed. The traditional areas of interest to occupational health and safety professionals include anticipation, recognition, evaluation and control of potential hazards. In addition to these, the 6th edition provides information and reliable resources to prepare for natural disasters, exposures to biological agents and potential acts of terrorism.

ERGONOMICS FOR PEOPLE WITH DISABILITIES

DESIGN FOR ACCESSIBILITY

Walter de Gruyter GmbH & Co KG The world of developed economies looks at the problems of people with disabilities from a technical, social, psychological and informational perspective. Impacts in favour of people with disabilities are most often equated with the removal of barriers and integration. Nowadays, virtually every form of social and economic life should take in account inclusion and removal of barriers. Urban planning, the design of buildings, communication networks and the products, tools can be done from the perspective of removing barriers for people with disabilities. It is crucial to promote a way of thinking aimed at taking into account the needs of people with disabilities in the creation of all new civilizational solutions. Monograph "Ergonomics for People with Disabilities: Design for Accessibility" presents interdisciplinary attitude to the issue of designing for people with disabilities. The aim of the monograph is to present the factors affecting life activation of people with disabilities (including "50+" and "mature" people) and the problems that people with disabilities face by the participation in social and professional life and the daily activities and how design for accessibility can help with solving those problems. Concepts presented in the first part are focused on designing of products supporting inclusion such as wheelchairs, orthopaedic seats, carrier vests and hand tools. This part consist of five chapters. Field of interest of second part of the monograph is how to design accessible socio-technical environment. The subject is presented in four chapters on two hospital case studies, backyard sensorimotor path case and integrated therapeutic environment case. Third part is focused on universal design with ICT solutions. It consist of the concepts and analysis of solutions supporting people with disabilities and elderly people presented in six chapters. Scope of the last part is human factor design for barriers reduction. In three chapters problems such deafness, dementia and professional activity of people with disabilities were presented. Monograph includes the wide perspective of engineers, designers, architects, psychologists, sociologists, vocational counsellors and medicals that can inspire to new look at design for accessibility. Book Title: Ergonomics For People With Disabilities Book Subtitle: Design For Accessibility Scientific editors: Aleksandra Polak-Sopinska, Jan Królikowski Technical editor: Magdalena Wróbel-Lachowska Editors affiliations: Faculty of Management and Production Engineering, Lodz University of Technology, Poland Series Title: Advances in Production Management and Ergonomics Series ISSN: 2544-7610 Series Volume: 1e-ISBN: 978-3-11-061783-2 Edition Number: 1 Copyright: 2018 Publisher: De Gruyter Copyright Holder: Department of Production Management and Logistics, Faculty of Management and Production Engineering, Lodz University of Technology, Poland Number of Pages: 238 Department of Production Management and Logistics, Lodz University of Technology, Poland

HUMAN FACTORS AND ERGONOMICS IN CONSUMER PRODUCT DESIGN

USES AND APPLICATIONS

CRC Press Every day we interact with thousands of consumer products. We not only expect them to perform their functions safely, reliably, and efficiently, but also to do it so seamlessly that we don't even think about it. However, with the many factors involved in consumer product design, from the application of human factors and ergonomics principles to reducing risks of malfunction and the total life cycle cost, well, the process just seems to get more complex. Edited by well-known and well-respected experts, the two-volumes of Handbook of Human Factors and Ergonomics in Consumer Product Design simplify this process. The second volume, Human Factors and Ergonomics in Consumer Product Design: Uses and Applications, discusses challenges and opportunities in the design for product safety and focuses on the critical aspects of human-centered design for usability. The book contains 14 carefully selected case studies that demonstrate application of a variety of innovative approaches that incorporate Human Factor and Ergonomics (HF/E) principles, standards, and best practices of user-centered design, cognitive psychology, participatory macro-ergonomics, and mathematical modeling. These case studies also identify many unique aspects of new product development projects, which have adopted a user-centered design paradigm as a way to attend to user requirements. The case studies illustrate how incorporating HF/E principles and knowledge in the design of consumer products can improve levels of user satisfaction, efficiency of use, increase comfort, and assure safety under normal use as well as foreseeable misuse of the product. The book provides a comprehensive source of information regarding new methods, techniques, and software applications for consumer product design.

PROCEEDINGS OF THE XIVTH TRIENNIAL CONGRESS OF THE INTERNATIONAL ERGONOMICS ASSOCIATION AND 44TH ANNUAL MEETING OF THE HUMAN FACTORS AND ERGONOMICS SOCIETY : ERGONOMICS FOR THE NEW MILLENNIUM

JULY 29 THROUGH AUGUST 4, 2000, SAN DIEGO, CALIFORNIA, USA

USABILITY EVALUATION AND INTERFACE DESIGN

COGNITIVE ENGINEERING, INTELLIGENT AGENTS, AND VIRTUAL REALITY

CRC Press This three volume set provides the complete proceedings of the Ninth International Conference on Human-Computer Interaction held August, 2001 in New Orleans. A total of 2,738 individuals from industry, academia, research institutes, and governmental agencies from 37 countries submitted their work for presentation at the conference. The papers address the latest research and application in the human aspects of design and use of computing systems. Those accepted for presentation thoroughly cover the entire field of human-computer interaction, including the cognitive, social, ergonomic, and health aspects of work with computers. The papers also address major advances in knowledge and effective use of computers in a variety of diversified application areas, including offices, financial institutions, manufacturing, electronic publishing, construction, and health care.

ERGONOMICS

FOUNDATIONAL PRINCIPLES, APPLICATIONS, AND TECHNOLOGIES

CRC Press A complete introduction to the field, Ergonomics: Foundational Principles, Applications and Technologies discusses scientific principles, research, applications, and emerging trends in technology. Covering the foundational principles and major topics in physical ergonomics, the book contains the necessary components of a quality ergonomics course, including a sample course syllabus, PowerPoint slides for instructors and students, homework assignments, class projects, instructor's manual, suggested lab equipment, proposed lab exercises, and a student laboratory manual. Based on the author's almost two decades of teaching, the text covers basic ergonomic principles from research and application perspectives. It includes hands-on laboratory activities to complement classroom instruction and cases studies that demonstrate application of ergonomic knowledge. Using an approach that highlights the physical over the cognitive, the author focuses less on kinesiology principles and more on applied kinesiology in ergonomics. Provides a basic explanation of the systems of the body to establish a foundation for understanding and consistently applying ergonomic principles Covers the human senses and the sensory process for each, including tools and techniques for assessing sensory impact Explains the functionality, relationship, and elements of the integrated roles of the muscular system and nervous system Introduces the study of anthropometrics and the principles that can be used to support anthropometric design, including data collection, calculation of statistics, and identification of appropriate data sources Examines the basic ergonomic principles of work place design and evaluation of hand tools Discusses the origin, nature, and impact of work-related musculoskeletal disorders (WMSDs) in the global community Includes coverage of the concepts of information processing, measurement of mental workload, and an introduction to ergonomic design of controls and displays The book supplies everything required to teach the class. Upon completion of a course using this book, students will be prepared to apply the ergonomic knowledge in industry or continue to higher levels of study in the field. The text builds the foundation students and professionals need to understand and improve the environments, equipment, and systems with which humans interact in the workplace, recreational environment, and home. Description of Instructors Manual Available upon course adoption, the instructor's manual contains resources to assist in quickly establishing a course layout, schedule, and associated documents. This resource genuinely makes the selection of the text a "turn-key" option for the professor to deliver a high-quality ergonomics course. Sample course syllabus Summary of suggested ergonomic lab equipment Sample course schedule Description of assignments such as student projects and more. Description of Laboratory Manual Available for download from www.crcpress.com, the laboratory manual contains multiple laboratory and application assignments to give student a hands-on experience in applying ergonomic material taught in the classroom lectures. The manual has labs for each of the primary topics covered in the course as well as guidelines on how students are to conduct the laboratories and prepare lab reports. Numerous tables, equations, and examples are provided in the lab manual to facilitate student understanding of the material. The use of the lab manual supports the instructor by providing tailored exercises for students to perform that are directly aligned with the textbook material. Assignments are also provided for students taking the course via distance learning or remote resources.

PROCEEDINGS OF THE 20TH CONGRESS OF THE INTERNATIONAL ERGONOMICS ASSOCIATION (IEA 2018)

VOLUME VIII: ERGONOMICS AND HUMAN FACTORS IN MANUFACTURING, AGRICULTURE, BUILDING AND CONSTRUCTION, SUSTAINABLE DEVELOPMENT AND MINING

Springer This book presents the proceedings of the 20th Congress of the International Ergonomics Association (IEA 2018), held on August 26-30, 2018, in Florence, Italy. By highlighting the latest theories and models, as well as cutting-edge technologies and applications, and by combining findings from a range of disciplines including engineering, design, robotics, healthcare, management, computer science, human biology and behavioral science, it provides researchers and practitioners alike with a comprehensive, timely guide on human factors and ergonomics. It also offers an excellent source of innovative ideas to stimulate future discussions and developments aimed at applying knowledge and techniques to optimize system performance, while at the same time promoting the health, safety and wellbeing of individuals. The proceedings include papers from researchers and practitioners, scientists and physicians, institutional leaders, managers and policy makers that contribute to constructing the Human Factors and Ergonomics approach across a variety of methodologies, domains and productive sectors. This volume includes papers addressing the following topics: Ergonomics in Manufacturing, Agriculture, Building and Construction, and Mining, and Human Factors and Sustainable Development.

ZUR ENTWICKLUNG DER ARBEITSPHYSIOLOGIE UND ERGONOMIE IM DEUTSCHSPRACHIGEN RAUM - AUFGABEN UND ZIELE IN LEHRE UND FORSCHUNG

GRIN Verlag Der Übersichtsartikel thematisiert nach einem kurzen Abriss der historischen Entwicklung der Arbeitsphysiologie im deutschsprachigen Raum fundamentales, in der arbeitswissenschaftlichen Lehre unverzichtbares Gedankengut der Arbeitsphysiologie als der Basisdisziplin der Ergonomie. Neben diversen, elementaren physiologischen Funktionsprinzipien und Eigengesetzlichkeiten des Organismus wird an Beispielen auch auf Denkweisen eingegangen, die zur problem-adäquaten Beurteilung der Ergebnisse von Arbeitsanalysen unabdingbar sind. Danach werden – wiederum an Beispielen – die Aufgaben und Ziele arbeitsphysiologisch orientierter Forschungsmethoden aufgezeigt, die mit den erheblichen Veränderungen in der Arbeitswelt der letzten Jahrzehnte heutzutage weniger auf die Objektivierung der Kreislaufbeanspruchung als den „Physiologischen Kosten“ abzielen, die der Gesamtorganismus für ungünstig gestaltete physisch fordernde Arbeitsbedingungen zu bezahlen hat. Vielmehr steht die Ermittlung der „Physiologischen Kosten“ auf Organebene im Fokus arbeitsphysiologischer Messmethoden. Sowohl für die Konzeption von Grundlagenuntersuchungen als auch für die Beurteilung von Messergebnissen der Feldforschung wichtige Paradigmen, wie das Prinzip der gleichen Arbeit oder die Energieäquivalenz bzw. die Dosismaxime, werden an Beispielen verständlich gemacht. Zum Abschluss werden für die Zukunft wichtige Aufgabenfelder der Arbeitswissenschaft/Ergonomie angesprochen, wobei voraussichtlich die Simulationstechnik (mit durchaus arbeitsphysiologischen Bezügen) z. B. im Digital Modelling an Bedeutung gewinnen wird

PRODUCTION DEVELOPMENT

DESIGN AND OPERATION OF PRODUCTION SYSTEMS

Springer Science & Business Media Production development is about improving existing production systems and developing new ones. The production system should be developed in integration with the product, as a part of the overall product realization process, and not in sequence after the product

has already been designed. Production Development: Design and Operation of Production Systems takes a holistic viewpoint on the production system and its design process during the whole system life cycle. A working procedure demonstrating how to design and realize the production system is presented, together with a number of related production development aspects. Production Development: Design and Operation of Production Systems is illustrated with a large number of figures and industrial examples. The book can be used as a reference for teachers and students, or as a manual for professionals within the field of production.

THE OCCUPATIONAL ERGONOMICS HANDBOOK

CRC Press Occupational ergonomics and safety studies the application of human behavior, abilities, limitations, and other characteristics to the design, testing, and evaluation of tools, machines, systems, tasks, jobs, and environments for productive, safe, comfortable, and effective use. Occupational Ergonomics Handbook provides current, comprehensive knowledge in this broad field, providing essential, state-of-the-art information from nearly 150 international leaders of this discipline. The text assesses the knowledge and expertise applied to industrial environments: Providing engineering guidelines for redesigning tools, machines, and work layouts Evaluating the demands placed on workers by current jobs Simulating alternative work methods Determining the potential for reducing physical job demands based on the implementation of new methods Topics also include: Fundamental ergonomic design principles at work Work-related musculoskeletal injuries, such as cumulative trauma to the upper extremity (CTDs) and low back disorders (LBDs), which affect several million workers each year with total costs exceeding \$100 billion annually Current knowledge used for minimizing human suffering, potential for occupational disability, and related worker's compensation costs Working conditions under which musculoskeletal injuries might occur Engineering design measures for eliminating or reducing known job-risk factors Optimal manufacturing processes regarding human perceptual and cognitive abilities as well as task reliability Identifying the worker population affected by adverse conditions Early medical and work intervention efforts Economics of an ergonomics maintenance program Ergonomics as an essential cost to doing business Ergonomics intervention includes design for manufacturability, total quality management, and work organization. Occupational Ergonomics Handbook demonstrates how ergonomics serves as a vital component for the activities of the company and enables an advantageous cooperation between management and labor. This new handbook serves a broad segment of industrial practitioners, including industrial and manufacturing engineers; managers; plant supervisors and ergonomics professionals; researchers and students from academia, business, and government; human factors and safety specialists; physical therapists; cognitive and work psychologists; sociologists; and human-computer communications specialists.

AN ERGONOMICS GUIDE TO HAND TOOLS

Amer Industrial Hygiene Assn

COMPUTER APPLICATIONS IN ERGONOMICS, OCCUPATIONAL SAFETY, AND HEALTH

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON COMPUTER-AIDED ERGONOMICS AND SAFETY '92 : CAES '92, TAMPERE, FINLAND, 18-20 MAY 1992

North Holland This volume presents a valuable reference on the available computer-based tools and techniques that can be used for improving the comfort of working conditions, as well as the safety and health of the working population worldwide. The variety and depth of presented computer applications illustrate the increasing usefulness of information technology in removing the ever present incompatibilities between people and their working environments. Especially in the areas of data collection and analysis, man-machine systems interface, workplace and equipment design, industrial safety and injury control, the computer-based systems can improve the scope and quality of services provided to the industry at large. The transfer of knowledge between ergonomists, occupational safety and health professionals, and management and workers is critical to ensure full realization of the many benefits expected from implementation of ergonomics and safety principles in the workplace.