1. Record Nr. UNINA9910458071103321

Titolo	Introductory statistics for engineering experimentation [[electronic resource] /] / Peter R. Nelson, Marie Coffin, Karen A.F. Copeland
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier/Academic Press, c2003
ISBN	1-281-00553-3 9786611005535 0-08-049165-0
Descrizione fisica	1 online resource (527 p.)
Altri autori (Persone)	NelsonPeter R CoffinMarie CopelandKaren A. F
Disciplina	620/.007/27
Soggetti	Engineering - Statistical methods Engineering - Experiments Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 508-510) and index.
Nota di contenuto	Front Cover; Introductory Statistics for Engineering Experimentation; Copyright Page; Contents; Preface; Chapter 1. Introduction; Variability; Experimental Design; Random Sampling; Randomization; Replication; Problems; Chapter 2. Summarizing Data; 2.1 Simple Graphical Techniques; 2.2 Numerical Summaries and Box Plots; 2.3 Graphical Tools for Designed Experiments; 2.4 Chapter Problems; Chapter 3. Models for Experiment Outcomes; 3.1 Models for Single-Factor Experiments; 3.2 Models for Two-Factor Factorial Experiments; 3.3 Models for Bivariate Data; 3.4 Models for Multivariate Data 3.5 Assessing the Fit of a Model 3.6 Chapter Problems; Chapter 4. Models for the Random Error; 4.1 Random Variables; 4.2 Important Discrete Distributions; 4.3 Important Continuous Distributions; 4.4 Assessing the Fit of a Distribution; 4.5 Chapter Problems; Chapter 5. Inference for a Single Population; 5.1 Central Limit Theorem; 5.2 A Confidence Interval for ; 5.3 Prediction and Tolerance Intervals; 5.4 Hypothesis Tests; 5.5 Inference for Binomial Populations; 5.6 Chapter Problems; Chapter 6. Comparing Two Populations; 6.1 Paired Samples;

6.2 Independent Samples

6.3 Comparing Two Binomial Populations 6.4 Chapter Problems; Chapter 7. One-Factor Multi-Sample Experiments; 7.1 Basic Inference; 7.2 The Analysis of Means; 7.3 ANOM with Unequal Sample Sizes; 7.4 ANOM for Proportions; 7.5 The Analysis of Variance; 7.6 The Equal Variances Assumption; 7.7 Sample Sizes; 7.8 Chapter Problems; Chapter 8. Experiments with Two Factors; 8.1 Interaction; 8.2 More Than One Observation Per Cell; 8.3 Only One Observation per Cell; 8.4 Blocking to Reduce Variability; 8.5 Chapter Problems; Chapter 9. Multi-Factor Experiments; 9.1 ANOVA for Multi-Factor Experiments
9.2 2k Factorial Designs 9.3 Fractional Factorial Designs; 9.4 Chapter Problems; Chapter 10. Inference for Regression Models; 10.1 Inference for a Regression Line; 10.2 Inference for Other Regression Models; 10.3 Chapter Problems; Chapter 11. Response Surface Methods; 11.1 First-Order Designs; 11.2 Second-Order Designs; 11.3 Chapter Problems; Chapter 12. Appendices; 12.1 Appendix A - Descriptions of Data Sets; 12.2 Appendix B - Tables; 12.3 Appendix C - Figures; 12.4 Appendix D - Sample Projects; Chapter 13. References; Index

Sommario/riassunto

The Accreditation Board for Engineering and Technology (ABET) introduced a criterion starting with their 1992-1993 site visits that ""Students must demonstrate a knowledge of the application of statistics to engineering problems."" Since most engineering curricula are filled with requirements in their own discipline, they generally do not have time for a traditional two semesters of probability and statistics. Attempts to condense that material into a single semester often results in so much time being spent on probability that the statistics useful for designing and analyzing engineer

2. Record Nr. UNINA9910299989403321

Titolo	Automation, Communication and Cybernetics in Science and Engineering 2013/2014 / / herausgegeben von Sabina Jeschke, Ingrid Isenhardt, Frank Hees, Klaus Henning
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-08816-5
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (918 p.)
Disciplina	004 006.3 302.2 507.1
Soggetti	Computer science - Mathematics Artificial intelligence Robotics Automation Science - Study and teaching Communication Management Industrial management Computational Science and Engineering Artificial Intelligence Robotics and Automation Science Education Communication Studies Innovation/Technology Management
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Foreword -- List of Contributors -- Part 1: Agile and Turbulence-Suitable Processes for Knowledge and Technology Intensive Organizations -- Part 2: Next-Generation Teaching and Learning

Concepts for Universities and the Economy -- Part 3: Cognitive IT-Supported Processes for Heterogeneous and Cooperative Systems -- Part 4: Target Group-Adapted User Models for Innovation and Technology Development Processes -- Part 5: Semantic Networks and Ontologies for Complex Value Chains and Virtual Environments -- Appendix: Monographs and Published Books from IMA/ZLW & IfU.

Sommario/riassunto

This book continues the tradition of its predecessors “Automation, Communication and Cybernetics in Science and Engineering 2009/2010 and 2011/2012” and includes a representative selection of scientific publications from researchers at the institute cluster IMA/ZLW & IfU. IMA - Institute of Information Management in Mechanical Engineering ZLW - Center for Learning and Knowledge Management IfU - Associated Institute for Management Cybernetics e.V. Faculty of Mechanical Engineering, RWTH Aachen University The book presents a range of innovative fields of application, including: cognitive systems, cyber-physical production systems, robotics, automation technology, machine learning, natural language processing, data mining, predictive data analytics, visual analytics, innovation and diversity management, demographic models, virtual and remote laboratories, virtual and augmented realities, multimedia learning environments, organizational development and management cybernetics. The contributions selected reflect the fundamental paradigm shift toward an increasingly interdisciplinary research world – which has always been both the basis and spirit of the institute cluster IMA/ZLW & IfU. .