

An Introduction To Applied And Environmental Geophysics

A groundbreaking introduction to vectors, matrices, and least squares for engineering applications, offering a wealth of practical examples.

An Introduction to Applied Semiotics presents nineteen semiotics tools for text and image analysis. Covering a variety of different schools and approaches, together with the author’s own original approach, this is a full and synthetic introduction to semiotics. This book presents general tools that can be used with any semiotic product. Drawing on the work of Fontanille, Genette, Greimas, Hébert, Jakobson, Peirce, Rastier and Zilberberg, the tools deal with the analysis of themes and action, true and false, positive and negative, rhythm narration and other elements. The application of each tool is illustrated with analyses of a wide range of texts and images, from well-known or distinctive literary texts, philosophical or religious texts or images, paintings, advertising and everyday signs and symbols. Each chapter has the same structure – summary, theory and application, making it ideal for course use. Covering both visual and textual objects, this is a key text for all courses in semiotics and textual analysis within linguistics, communication studies, literary theory, design, marketing and related areas.

One of the goals of An Introduction to Applied Statistical Thermodynamics is to introduce readers to the fundamental ideas and engineering uses of statistical thermodynamics, and the equilibrium part of the statistical mechanics. This text emphasises on nano and bio technologies, molecular level descriptions and understandings offered by statistical mechanics. It provides an introduction to the simplest forms of Monte Carlo and molecular dynamics simulation (albeit only for simple spherical molecules) and user-friendly MATLAB programs for doing such simulations, and also some other calculations. The purpose of this text is to provide a readable introduction to statistical thermodynamics, show its utility and the way the results obtained lead to useful generalisations for practical application. The text also illustrates the difficulties that arise in the statistical thermodynamics of dense fluids as seen in the discussion of liquids.

Introduction to Applied Geophysics

Tools for Text and Image Analysis

Calculus: an Introduction to Applied Mathematics

Exploring the Shallow Subsurface

This second edition of the foundational textbook An Introduction to Applied Linguistics provides a state-of-the-art account of contemporary applied linguistics. The kinds of language problems of interest to applied linguists are discussed and a distinction drawn between the different research approach taken by theoretical linguists and by applied linguists to what seem to be the same problems. Professor Davies describes a variety of projects which illustrate the interests of the field and highlight the marriage it offers between practical experience and theoretical understanding. The increasing emphasis of applied linguistics on ethicality is linked to the growth of professionalism and to the concern for accountability, manifested in the widening emphasis on critical stances. This, Davies argues, is at its most acute in the tension between giving advice as the outcome of research and taking political action in order to change a situation which, it is claimed, needs ameliorisation. This dilemma is not confined to applied linguistics and may now be endemic in the applied disciplines.

Introduction to Applied Statistical Signal Analysis, Third Edition, is designed for the experienced individual with a basic background in mathematics, science, and computer. With this predisposed knowledge, the reader will coast through the practical introduction and move on to signal analysis techniques, commonly used in a broad range of engineering areas such as biomedical engineering, communications, geophysics, and speech. Topics presented include mathematical bases, requirements for estimation, and detailed quantitative examples for implementing techniques for classical signal analysis. This book includes over one hundred worked problems and real world applications. Many of the examples and exercises use measured signals, most of which are from the biomedical domain. The presentation style is designed for the upper level undergraduate or graduate student who needs a theoretical introduction to the basic principles of statistical modeling and the knowledge to implement them practically. Includes over one hundred worked problems and real world applications. Many of the examples and exercises in the book use measured signals, many from the biomedical domain.

Modern technology is rapidly developing and for this reason future engineers need to acquire advanced knowledge in science and technology, including electromagnetic phenomena. This book is a contemporary text of a one-semester course for junior electrical engineering students. It covers a broad spectrum of electromagnetic phenomena such as, surface waves, plasmas, photonic crystals, negative refraction as well as related materials including superconductors. In addition, the text brings together electromagnetism and optics as the majority of texts discuss electromagnetism disconnected from optics. In contrast, in this book both are discussed. Seven labs have been developed to accompany the material of the book.

Introduction to Applied Linear Algebra

Introduction to Applied Statistical Signal Analysis

An Introduction to Applied Matrix Analysis

An Introduction to Applied and Environmental Geophysics, 2nd Edition, describes the rapidly developing field of near-surface geophysics. The book covers a range of applications including mineral, hydrocarbon and groundwater exploration, and emphasises the use of geophysics in civil engineering and in environmental investigations. Following on from the international popularity of the first edition, this new, revised, and much expanded edition contains additional case histories, and descriptions of geophysical techniques not previously included in such textbooks. The level of mathematics and physics is deliberately kept to a minimum but is described qualitatively within the text. Relevant mathematical expressions are separated into boxes to supplement the text. The book is profusely illustrated with many figures, photographs and line drawings, many never previously published. Key source literature is provided in an extensive reference section; a list of web addresses for key organisations is also given in an appendix as a valuable additional resource. Covers new techniques such as Magnetic Resonance Sounding, Controlled- Source EM, shear-wave seismic refraction, and airborne gravity and EM techniques Now includes radioactivity surveying and more discussions of down-hole geophysical methods; hydrographic and Sub-Bottom Profiling surveying; and Unexploded Ordnance detection Expanded to include more forensic, archaeological, glaciological, agricultural and bio-geophysical applications Includes more information on physio-chemical properties of geological, engineering and environmental materials Takes a fully global approach Companion website with additional resources available at www.wiley.com/go/reynolds/introduction2e Accessible core textbook for undergraduates as well as an ideal reference for industry professionals The second edition is ideal for students wanting a broad introduction to the subject and is also designed for practising civil and geotechnical engineers, geologists, archaeologists and environmental scientists who need an overview of modern geophysical methods relevant to their discipline. While the first edition was the first textbook to provide such a comprehensive coverage of environmental geophysics, the second edition is even more far ranging in terms of techniques, applications and case histories.

This text presents a multi-disciplined view of optimization, providing students and researchers with a thorough examination of algorithms, methods, and tools from diverse areas of optimization without introducing excessive theoretical detail. This second edition includes additional topics, including global optimization and a real-world case study using important concepts from each chapter. Introduction to Applied Optimization is intended for advanced undergraduate and graduate students and will benefit scientists from diverse areas, including engineers.

FOAM. This acronym has been used for over 75y years at Rensselaer to designate an upper-division course entitled, Foundations of Applied Ma- ematics. This course was started by George Handelman in 1956, when he came to Rensselaer from the Carnegie Institute of Technology. His objective was to closely integrate mathematical and physical reasoning, and in the p- cess enable students to obtain a qualitative understanding of the world we live in. FOAM was soon taken over by a young faculty member, Lee Segel. About this time a similar course, Introduction to Applied Mathematics, was introduced by Chia-Ch'iao Lin at the Massachusetts Institute of Technology. Together Lin and Segel, with help from Handelman, produced one of the landmark textbooks in applied mathematics, Mathematics Applied to – terministic Problems in the Natural Sciences. This was originally published in 1974, and republished in 1988 by the Society for Industrial and Applied Mathematics, in their Classics Series. This textbook comes from the author teaching FOAM over the last few years. In this sense, it is an updated version of the Lin and Segel textbook.

An Introduction to Applied Optimal Control

An Introduction to Applied Professional Research for Accountants

An Introduction to Applied Multivariate Analysis with R

An Introduction to Applied Semiotics

Species distribution, conservation management, landscape planning.

An Introduction to Applied Cognitive Psychology offers an accessible review of recent research in the application of cognitive methods, theories, and models. Using real-world scenarios and engaging everyday examples this book offers clear explanations of how the findings of cognitive psychologists have been put to use. The book explores all of the major areas of cognitive psychology, including attention, perception, memory, thinking and decision making, as well as some of the factors that affect cognitive processes, such as drugs and biological cycles. Now in full colour, this new edition has been thoroughly updated to include cutting-edge research and theories. There are also new chapters on perceptual errors and accidents, the influence of emotion, and the role of cognitive factors in music and sport. Written by well-respected experts in the field, this textbook will appeal to all undergraduate students of cognitive psychology, as well as professionals working in the areas covered in the book, such as education, police work, sport, and music.

An Introduction to Applied Optimal Control

An Introduction to Applied Mechanics

Calculus

An Introduction to Applied Linguistics

Guide to Biomedical and Electrical Engineering Applications

Describes the applied professional research process with applications in financial reporting and auditing. The text explains how to use Internet resources for conducting applied professional research. The casebook component contains accounting and reporting cases.

Written in clear, concise language and designed for an introductory applied energy course, Applied Energy: An Introduction discusses energy applications in small-medium enterprises, solar energy, hydro and wind energy, nuclear energy, hybrid energy, and energy sustainability issues. Focusing on renewable energy technologies, energy conversion, and conservation and the energy industry, the author lists the key aspects of applied energy and related studies, taking a question-based approach who want a broad overview of energy conversion. The author carefully designed the text to motivate students and give them the foundation they need to place the concepts presented into a real-world context. He begins with an introduction to the basics and the definitions used throughout the book. From there, he covers the energy industry and energy applications: energy sources, supply, and demand; and energy management, policy, plans, and analysis. Building on this, the author discusses fossil fuels and alternative energy sources, and examines the various types of applications of alternative energies. The book concludes with chapters on hybrid energy technology, hybrid energy schemes, other energy conversion methods, and applied energy issues. The book takes advantage of practical and application-based learning, presenting the information in various forms such as essential notes followed by practical projects, assignments, and objective and practical questions. Innovation, linking knowledge with applied energy design and practice. The comprehensive coverage gives students the skills not only to master the concepts in the course, but also apply them to future work in this area.

The majority of data sets collected by researchers in all disciplines are multivariate, meaning that several measurements, observations, or recordings are taken on each of the units in the data set. These units might be human subjects, archaeological artifacts, countries, or a vast variety of other things. In a few cases, it may be sensible to isolate each variable and study it separately, but in most instances all the variables need to be examined simultaneously in order to fully grasp the relationships between them. This text presents a multi-disciplined view of optimization, providing students and researchers with a thorough examination of algorithms, methods, and tools from diverse areas of optimization without introducing excessive theoretical detail. This second edition includes additional topics, including global optimization and a real-world case study using important concepts from each chapter. Introduction to Applied Optimization is intended for advanced undergraduate and graduate students and will benefit scientists from diverse areas, including engineers.

analysis might be helpful, and it is with such methods that this book is largely concerned. Multivariate analysis includes methods both for describing and exploring such data and for making formal inferences about them. The aim of all the techniques is, in general sense, to display or extract the signal in the data in the presence of noise and to find out what the data show us in the midst of their apparent chaos. An Introduction to Applied Multivariate Analysis with R explores the relationships between them. This text presents a multi-disciplined view of optimization, providing students and researchers with a thorough examination of algorithms, methods, and tools from diverse areas of optimization without introducing excessive theoretical detail. This second edition includes additional topics, including global optimization and a real-world case study using important concepts from each chapter. Introduction to Applied Optimization is intended for advanced undergraduate and graduate students and will benefit scientists from diverse areas, including engineers.

hand, particularly as some type of graphical representation, via the R software. Throughout the book, the authors give many examples of R code used to apply the multivariate techniques to multivariate data.

Introduction to Applied Numerical Analysis

An Introduction to Applied Calculus for Social and Life Sciences

An Introduction

An Introduction to Applied Multivariate Analysis

This text provides a detailed introduction to number theory, demonstrating how other areas of mathematics enter into the study of the properties of natural numbers. It contains problem sets within each section and at the end of each chapter to reinforce essential concepts, and includes up-to-date information on divisibility problems, polynomial congruence, the sums of squares and trigonometric sums.Five or more copies may be ordered by college or university bookstores at a special price, available on application.

Renowned applied mathematician Gilbert Strang teaches applied mathematics with the clear explanations, examples and insights of an experienced teacher. This book progresses steadily through a range of topics from symmetric linear systems to differential equations to least squares and Kalman filtering and optimization. It clearly demonstrates the power of matrix algebra in engineering problem solving. This is an ideal book (beloved by many readers) for a first course on applied mathematics and a reference for more advanced applied mathematicians. The only prerequisite is a basic course in linear algebra.

This book should be of interest to introductory courses in science, physics and physical sciences.

Applied Energy

An Introduction to Applied and Environmental Geophysics

Vectors, Matrices, and Least Squares

Introduction to Applied Physics

Offering a chapter on each of the most common methods of exploration, the text explains in detail how each method is performed and discusses that method s geologic, engineering, and environmental applications. In addition to ample examples, illustrations, and applications throughout, each chapter concludes with a problem set. The text is also accompanied by the Field Geophysics Software Suite, an innovative CD-ROM that allows students to experiment with refraction and reflection seismology, gravity, magnetics, electrical resistivity, and ground-penetrating radar methods of exploration."

This book offers a student friendly review of recent research in the application of cognitive methods, theories and models to real-world scenarios.

An Introduction to Applied Linguistics, Second Edition provides a complete, authoritative and up-to-date overview of the state of the field. Each of the 15 chapters offers an extended survey of a central element of Applied Linguistics and is co-authored by two leading international specialists, thus ensuring a full and balanced treatment of the topic covered. The book is divided into three sections: a description of language and language use; essential areas of enquiry; and the four skills and testing. An introductory chapter familiarises readers with key issues and recurrent themes whilst hands-on activities and further reading sections for each chapter encourage practical analysis and wider reading. For this new edition, each chapter has been fully revised in line with new research and thinking in Applied Linguistics. With its accessible style, broad coverage and practical focus, this book is ideal for students of applied linguistics, TESOL, and second language pedagogy as well as practicing teachers and researchers wishing to update their knowledge.

An Introduction to Applied Probability

From Practice to Theory

Introduction to Applied Mathematics

Introduction to the Foundations of Applied Mathematics

Written by a global team, this up-to-date introduction to applied linguistics helps students learn what it’s like to do applied linguistics, and not just read about theoretical concepts. First, it provides frameworks for understanding both the shared characteristics of work in applied linguistics and the diversity of topics and analyses. Each chapter then highlights a topic area, covering key concepts, a specific project undertaken by the authors, and their personal reflections on entering the field. Hands-on analysis and other application activities also encourage students to test different skills related to each chapter. Finally, students are introduced to the tools they need to continue in applied linguistics: how to read and write empirical research, how to evaluate primary literature, and starting points for expanding their interest in specific subject areas. The authors provide examples from different geographical regions and languages to engage an international audience. At the same time, multilingualism, interdisciplinarity, and technology are integrated as themes within the text to reflect how these areas are now interwoven throughout applied linguistics.

An Introduction to Applied and Environmental Geophysics.John Wiley & Sons

"This book is appropriate for an applied numerical analysis course for upper-level undergraduate and graduate students as well as computer science students. Actual programming is not covered, but an extensive range of topics includes round-off and function evaluation, real zeros of a function, integration, ordinary differential equations, optimization, orthogonal functions, Fourier series, and much more. 1989 edition"--Provided by publisher.

The Cambridge Introduction to Applied Linguistics

Introduction to Applied Optimization

An Introduction to Applied Statistical Thermodynamics

An Introduction to Applied Cognitive Psychology

This comprehensive text introduces readers to the most commonly used multivariate techniques at an introductory, non-technical level. By focusing on the fundamentals, readers are better prepared for more advanced applied pursuits, particularly on topics that are most critical to the behavioral, social, and educational sciences. Analogies betwe

TO APPLIED GEOPHYSICS STANIS LAY MARE–, et al. Faculty of Science, Charles University, Prague SPRINGER-SCIENCE+BUSINESS MEDIA, B. V. Library of Congress Cataloging in Publication Data Mares, Stanislav Introduction to applied geophysics Translation of Uvod do uzite geofyziky Bibliography: p. Includes index. 1. Geophysics. 2. Prospecting–Geophysical methods. I. Title QC802. A1M3713 1984 551 84-4753 ISBN 978-90-481-8374-6 ISBN 978-94-015-7684-0 (eBook) DOI 10. 1007/978-94-015-7684-0 All Rights Reserved © 1984 by Stanislav Mard et al. Originally published by Kluwer Academic Publishers in 1984 Software reprint ofthe hardcover 1st edition 1984 No part of the material protected by this copyright notice may be reproduced or utilized in any form or by any means, electronic or mechanical including photocopying, recording or by any information storage and retrieval system, without written permission from the copyright owner CONTENTS XI INTRODUCTION LIST OF PRINCIPAL SYMBOLS AND UNITS USED XIII CHAPTER I. GRAVIMETRIC METHODS (S. Hrach) I. I. Physical principles of gravimetric methods- Volume gravitational potential 1 1. 2. Gravity field of the Earth 3 1. 3. Anomalies of gravitational acceleration-Gravity anomalies 9 1. 3. 1. Faye anomaly-Free-air anomaly 9 1. 3. 2. Bouguer anomalies 10 1. 3. 3. Isostatic anomaly 14 1. 3. 4. Geological significance of anomalies 17 1. 4. 1. Rock densities 19 1. 4. 1. Natural rock densities 20 1. 4. 2. Rock density determination 22 1. 4. 3. Determination of density characteristics 25 25 1. 5. Gravity observations 26 1. 5. 1. Instruments for absolute gravity observations 1. 5. 2.

It is well known that most problems in science and engineering eventually progress into matrix problems. This book gives an elementary introduction to applied matrix theory and it also includes some new results obtained in recent years. The book consists of eight chapters. It includes perturbation and error analysis; the conjugate gradient method for solving linear systems; preconditioning techniques; and least squares algorithms based on orthogonal transformations, etc. The last two chapters include some latest development in the area. In Chap. 7, we construct optimal preconditioners for functions of matrices. More precisely, let f be a function of matrices. Given a matrix A, there are two choices of constructing optimal preconditioners for f(A). Properties of these preconditioners are studied for different functions. In Chap. 8, we study the Bottcher–Wenzel conjecture and discuss related problems. This is a textbook for senior undergraduate or junior graduate students majoring in science and engineering. The material is accessible to students who, in various disciplines, have basic linear algebra, calculus, numerical analysis, and computing knowledge. The book is also useful to researchers in computational science who are interested in applied matrix theory.

An Introduction to Pure and Applied Mathematics

Introduction to Applied Linguistics

An Introduction to Applied Electromagnetics and Optics

An Introduction to Applied Biogeography

Designed for a curriculum that contains only 2 single one-semester course on probability. Covers the core of probability theory, considers sums of random variables, derives sampling distributions, and discusses the approximation of distributions. Includes nonstatistical and statistical applications such as hypothesis testing, confidence intervals, and regression analysis. Numerous worked examples throughout the text illustrate the material and each chapter concludes with a number of problems.

A comprehensive and up-to-date textbook that brings applied linguistics alive while preparing students for the field with hands-on practice.

An Introduction to Applied Mathematics

Number Theory