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## **KEY=SALGADO - HESTER HOGAN**

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## **THE ENGINEERING OF FOUNDATIONS**

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McGraw-Hill Europe **The Engineering of Foundations presents the subject of foundation engineering in a logical framework, in a natural sequence and in as simple a presentation as possible. The text emphasizes conceptual understanding and avoids an oversimplistic treatment of the subject. Estimation of soil parameters for use in design is given high priority. Users will find an up-to-date text that relates theory to real world practices and integrates concepts and continuity of examples across chapters. Illustrations, applications and hands-on examples are provided, to explain these critical foundations. Explains the "why". One reviewer notes, "This is the Holtz and Kovacs of Foundations!!"**

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## **THE ENGINEERING OF FOUNDATIONS, 2ND EDITION**

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CRC Press **This new edition covers the construction, analysis, and design of shallow and deep foundations, as well as retaining structures and slopes. It includes complete coverage of soil mechanics and site investigations. It contains illustrations, applications, and hands-on examples that continue across chapters.**

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## **THE ENGINEERING OF FOUNDATIONS, 2ND EDITION**

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**This rigorous textbook covers the construction, analysis and design of shallow and deep foundations, as well as retaining structures and slopes. It incorporates theory with practice, and emphasizes conceptual understanding. Estimation of soil parameters for use in design is given high priority. Illustrations, applications, and hands-on examples which**

continue across chapters are provided. It is written for advanced undergraduate and graduate students, and will suit specialist practicing engineers and researchers. In this new edition: The basic soil mechanics is covered first, fully explaining drained versus undrained loading, phase transformation, development of peak  $q/p_c$ , and critical state and residual state development with sustained shearing. The LRFD approach to foundations, slopes and retaining structures is overhauled in the light of new research. Calculations of bearing capacity and settlement of shallow foundations are updated to reflect more realistic methods proposed since the 1st edition. Recent research on piles and new design methods are incorporated, with new methods for both axially loaded piles and laterally loaded piles, so that both traditional knowledge and recent progress in the topic are available. The treatment of retaining structures and slopes is updated, with better discussion of limit states and the use of slope stability software and strength reduction in computational stability calculations. ~

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## **PRINCIPLES OF FOUNDATION ENGINEERING**

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Cengage Learning Master the core concepts and applications of foundation analysis and design with Das/Sivakugan's best-selling **PRINCIPLES OF FOUNDATION ENGINEERING**, 9th Edition. Written specifically for those studying undergraduate civil engineering, this invaluable resource by renowned authors in the field of geotechnical engineering provides an ideal balance of today's most current research and practical field applications. A wealth of worked-out examples and figures clearly illustrate the work of today's civil engineer, while timely information and insights help readers develop the critical skills needed to properly apply theories and analysis while evaluating soils and foundation design. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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## **MODEL UNCERTAINTIES IN FOUNDATION DESIGN**

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CRC Press **Model Uncertainties in Foundation Design** is unique in the compilation of the largest and the most diverse load test databases to date, covering many foundation types (shallow foundations, spudcans, driven piles, drilled shafts, rock sockets and helical piles) and a wide range of ground conditions (soil to soft rock). All databases with names prefixed by NUS are available upon request. This book presents a comprehensive evaluation of the model factor mean (bias) and coefficient of variation (COV) for ultimate and serviceability limit state based on these databases. These statistics can be used directly for AASHTO LRFD calibration. Besides load test databases, performance databases for other geo-structures and their model factor statistics are provided. Based on this extensive literature survey, a practical three-tier scheme for classifying the model uncertainty of geo-structures according to the model factor mean and COV

is proposed. This empirically grounded scheme can underpin the calibration of resistance factors as a function of the degree of understanding - a concept already adopted in the Canadian Highway Bridge Design Code and being considered for the new draft for Eurocode 7 Part 1 (EN 1997-1:202x). The helical pile research in Chapter 7 was recognised by the 2020 ASCE Norman Medal.

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## **EARTHQUAKE GEOTECHNICAL ENGINEERING FOR PROTECTION AND DEVELOPMENT OF ENVIRONMENT AND CONSTRUCTIONS**

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### **PROCEEDINGS OF THE 7TH INTERNATIONAL CONFERENCE ON EARTHQUAKE GEOTECHNICAL ENGINEERING, (ICEGE 2019), JUNE 17-20, 2019, ROME, ITALY**

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CRC Press **Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions** contains invited, keynote and theme lectures and regular papers presented at the 7th International Conference on Earthquake Geotechnical Engineering (Rome, Italy, 17-20 June 2019). The contributions deal with recent developments and advancements as well as case histories, field monitoring, experimental characterization, physical and analytical modelling, and applications related to the variety of environmental phenomena induced by earthquakes in soils and their effects on engineered systems interacting with them. The book is divided in the sections below: Invited papers Keynote papers Theme lectures Special Session on Large Scale Testing Special Session on Liquefact Projects Special Session on Lessons learned from recent earthquakes Special Session on the Central Italy earthquake Regular papers **Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions** provides a significant up-to-date collection of recent experiences and developments, and aims at engineers, geologists and seismologists, consultants, public and private contractors, local national and international authorities, and to all those involved in research and practice related to Earthquake Geotechnical Engineering.

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## **SOIL MECHANICS**

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Springer **This book is intended primarily to serve the needs of the undergraduate civil engineering student and aims at the clear explanation, in adequate depth, of the fundamental principles of soil mechanics. The understanding of these principles is considered to be an essential foundation upon which future practical experience in soils engineering can be built. The choice of material involves an element of personal opinion but the contents of this book should cover the requirements of most undergraduate courses to honours level. It is assumed that the student has no prior knowledge of the subject but has a good understanding of basic mechanics. The book includes a comprehensive range of worked examples**

and problems set for solution by the student to consolidate understanding of the fundamental principles and illustrate their application in simple practical situations. The International System of Units is used throughout the book. A list of references is included at the end of each chapter as an aid to the more advanced study of any particular topic. It is intended also that the book will serve as a useful source of reference for the practising engineer. In the third edition no changes have been made to the aims of the book. Except for the order of two chapters being interchanged and for minor changes in the order of material in the chapter on consolidation theory, the basic structure of the book is unaltered.

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## **FOUNDATION DESIGN**

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### **THEORY AND PRACTICE**

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John Wiley & Sons In **Foundation Design: Theory and Practice**, Professor N. S. V. Kameswara Rao covers the key aspects of the subject, including principles of testing, interpretation, analysis, soil-structure interaction modeling, construction guidelines, and applications to rational design. Rao presents a wide array of numerical methods used in analyses so that readers can employ and adapt them on their own. Throughout the book the emphasis is on practical application, training readers in actual design procedures using the latest codes and standards in use throughout the world. Presents updated design procedures in light of revised codes and standards, covering: American Concrete Institute (ACI) codes Eurocode 7 Other British Standard-based codes including Indian codes Provides background materials for easy understanding of the topics, such as: Code provisions for reinforced concrete Pile design and construction Machine foundations and construction practices Tests for obtaining the design parameters Features subjects not covered in other foundation design texts: Soil-structure interaction approaches using analytical, numerical, and finite element methods Analysis and design of circular and annular foundations Analysis and design of piles and groups subjected to general loads and movements Contains worked out examples to illustrate the analysis and design Provides several problems for practice at the end of each chapter Lecture materials for instructors available on the book's companion website Foundation Design is designed for graduate students in civil engineering and geotechnical engineering. The book is also ideal for advanced undergraduate students, contractors, builders, developers, heavy machine manufacturers, and power plant engineers. Students in mechanical engineering will find the chapter on machine foundations helpful for structural engineering applications. Companion website for instructor resources: [www.wiley.com/go/rao](http://www.wiley.com/go/rao)

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## **FOUNDATION DESIGN: PRINCIPLES AND PRACTICES**

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## **PEARSON NEW INTERNATIONAL EDITION**

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Pearson Higher Ed For undergraduate/graduate-level foundation engineering courses. Covers the subject matter thoroughly and systematically, while being easy to read. Emphasizes a thorough understanding of concepts and terms before proceeding with analysis and design, and carefully integrates the principles of foundation engineering with their application to practical design problems.

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## **SHALLOW FOUNDATIONS**

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### **BEARING CAPACITY AND SETTLEMENT, THIRD EDITION**

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CRC Press Following the popularity of the previous edition, *Shallow Foundations: Bearing Capacity and Settlement, Third Edition*, covers all the latest developments and approaches to shallow foundation engineering. In response to the high demand, it provides updated data and revised theories on the ultimate and allowable bearing capacities of shallow foundations. Additionally, it features the most recent developments regarding eccentric and inclined loading, the use of stone columns, settlement computations, and more. Example cases have been provided throughout each chapter to illustrate the theories presented.

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## **THE ART OF FOUNDATION ENGINEERING PRACTICE**

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Amer Society of Civil Engineers **GSP 198**, honoring Clyde N. Baker, Jr., P.E., S.E., Dist.M.ASCE, contains 40 technical papers on the engineering design, analysis, construction, and monitoring of foundations.

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## **CORRELATIONS OF SOIL AND ROCK PROPERTIES IN GEOTECHNICAL ENGINEERING**

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Springer This book presents a one-stop reference to the empirical correlations used extensively in geotechnical engineering. Empirical correlations play a key role in geotechnical engineering designs and analysis. Laboratory and in situ testing of soils can add significant cost to a civil engineering project. By using appropriate empirical correlations, it is possible to derive many design parameters, thus limiting our reliance on these soil tests. The authors have decades of experience in geotechnical engineering, as professional engineers or researchers. The objective of this book is to present a critical evaluation of a wide range of empirical correlations reported in the literature, along with typical values of soil parameters, in the light of their experience and knowledge. This book will be a one-stop-shop for the practising professionals, geotechnical researchers and academics looking for specific correlations for estimating certain geotechnical parameters. The empirical correlations in the forms of equations and charts and typical values are collated from extensive literature review, and from the authors' database.

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## **FROM SOIL BEHAVIOR FUNDAMENTALS TO INNOVATIONS IN GEOTECHNICAL ENGINEERING**

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### **HONORING ROY E. OLSON**

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Amer Society of Civil Engineers **From Soil Behavior Fundamentals to Innovations in Geotechnical Engineering GSP 233** honors the technical contribution of Roy Olson Ph.D. P.E. NAE Distinguished Member ASCE. This Geotechnical Special Publication contains a total of 51 papers 21 authored or co-authored by Prof. Olson along with 30 peer-reviewed contemporary invited or submitted papers. Olson's early work dealt with clay behavior consolidation analyses and compaction of unsaturated soils. His later work focused on applications of soil behavior in foundation and forensic engineering including axial capacity of piles in sand and clay pull out capacity of suction caisson foundations and failures of excavations and bulkhead structures. Contemporary innovations discussed in papers contributed to this volume include developments in consolidation analyses modeling of shear strength measurements of permeability and interpretation of in-situ tests. Lessons learned from failures along with recent developments in foundation engineering such as characterization of energy piles calculation of settlement from dynamic soil properties developments in finite element modeling of foundations mechanism of failure of jacked piles mitigation of piling noise and field load tests on a variety of foundations are also included. **From Soil Behavior Fundamentals to Innovations in Geotechnical Engineering** contains practical and technical information on soil behavior fundamentals and current applications in geotechnical engineering that will be of interest to educators researchers and practicing geotechnical engineers.

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### **SHALLOW FOUNDATIONS**

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### **DISCUSSIONS AND PROBLEM SOLVING**

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John Wiley & Sons **Shallow Foundations: Discussions and Problem Solving** is written for civil engineers and all civil engineering students taking courses in soil mechanics and geotechnical engineering. It covers the analysis, design and application of shallow foundations, with a primary focus on the interface between the structural elements and underlying soil. Topics such as site investigation, foundation contact pressure and settlement, vertical stresses in soils due to foundation loads, settlements, and bearing capacity are all fully covered, and a chapter is devoted to the structural design of different types of shallow foundations. It provides essential data for the design of shallow foundations under normal circumstances, considering both the American (ACI) and the European (EN) Standard Building Code Requirements, with each chapter being a concise discussion of critical and practical aspects. Applications are highlighted through solving a relatively large number of realistic problems. A total of 180 problems, all with full

solutions, consolidate understanding of the fundamental principles and illustrate the design and application of shallow foundations.

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## **AN INTRODUCTION TO GEOTECHNICAL ENGINEERING**

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Prentice Hall "Intended for use in the first of a two course sequence in geotechnical engineering usually taught to third- and fourth-year undergraduate civil engineering students. An Introduction to Geotechnical Engineering offers a descriptive, elementary introduction to geotechnical engineering with applications to civil engineering practice."--Publisher's website.

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## **PRINCIPLES AND PRACTICE OF GROUND IMPROVEMENT**

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John Wiley & Sons "The proposed book focuses on the principles and design of ground improvement technologies"--

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## **ADVANCED UNSATURATED SOIL MECHANICS AND ENGINEERING**

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CRC Press Analytical and comprehensive, this state-of-the-art book, examines the mechanics and engineering of unsaturated soils, as well as explaining the laboratory and field testing and research that are the logical basis of this modern approach to safe construction in these hazardous geomaterials; putting them into a logical framework for civil engineering and design. The book: illustrates the importance of state-dependent soil-water characteristic curves highlights modern soil testing of unsaturated soil behaviour, including accurate measurement of total volume changes and the measurement of anisotropic soil stiffness at very small strains introduces an advanced state-dependent elasto-plastic constitutive model for both saturated and unsaturated soil demonstrates the power of numerical analysis which is at the heart of modern soil mechanics studies and simulates the behaviour of loose fills from unsaturated to saturated states; explains the difference between strain-softening and static liquefaction, and describes real applications in unsaturated soil slope engineering includes purpose-designed field trials to capture the effects of two independent stress variables, and reports comprehensive measurements of soil suction, water contents, stress changes and ground deformations in both bare and grassed slopes introduces a new conjunctive surface and subsurface transient flow model for realistically analysing rainfall infiltration in unsaturated soil slopes, and illustrates the importance of the flow model in slope engineering. Including constitutive and numerical modelling, this volume will interest students and professionals studying or working in the areas of geotechnical engineering and the built environment.

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## **GEOTECHNICAL ENGINEERING IN THE XXI CENTURY: LESSONS LEARNED AND FUTURE CHALLENGES**

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## **PROCEEDINGS OF THE XVI PAN-AMERICAN CONFERENCE ON SOIL MECHANICS AND GEOTECHNICAL ENGINEERING (XVI PCSMGE), 17-20 NOVEMBER 2019, CANCUN, MEXICO**

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**IOS Press** The first Pan-American Conference on Soil Mechanics and Geotechnical Engineering (PCSMGE) was held in Mexico in 1959. Every 4 years since then, PCSMGE has brought together the geotechnical engineering community from all over the world to discuss the problems, solutions and future challenges facing this engineering sector. Sixty years after the first conference, the 2019 edition returns to Mexico. This book, **Geotechnical Engineering in the XXI Century: Lessons learned and future challenges**, presents the proceedings of the XVI Pan-American Conference on Soil Mechanics and Geotechnical Engineering (XVI PCSMGE), held in Cancun, Mexico, from 17 - 20 November 2019. Of the 393 full papers submitted, 335 were accepted for publication after peer review. They are included here organized into 19 technical sessions, and cover a wide range of themes related to geotechnical engineering in the 21st century. Topics covered include: laboratory and in-situ testing; analytical and physical modeling in geotechnics; numerical modeling in geotechnics; unsaturated soils; soft soils; foundations and retaining structures; excavations and tunnels; offshore geotechnics; transportation in geotechnics; natural hazards; embankments and tailings dams; soils dynamics and earthquake engineering; ground improvement; sustainability and geo-environment; preservation of historic sites; forensics engineering; rock mechanics; education; and energy geotechnics. Providing a state-of-the-art overview of research into innovative and challenging applications in the field, the book will be of interest to all those working in soil mechanics and geotechnical engineering. In this proceedings, 58% of the contributions are in English, and 42% of the contributions are in Spanish or Portuguese.

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### **ADVANCES IN COMPUTER METHODS AND GEOMECHANICS**

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#### **IACMAG SYMPOSIUM 2019 VOLUME 1**

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**Springer Nature** This volume presents selected papers from IACMAG Symposium, The major themes covered in this conference are Earthquake Engineering, Ground Improvement and Constitutive Modelling. This volume will be of interest to researchers and practitioners in geotechnical and geomechanical engineering.

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### **THE MATERIAL POINT METHOD FOR GEOTECHNICAL ENGINEERING**

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#### **A PRACTICAL GUIDE**

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**CRC Press** This practical guide provides the best introduction to large deformation material point method (MPM) simulations for geotechnical engineering. It provides the basic theory, discusses the different numerical features used in large deformation simulations, and presents a number of

applications -- providing references, examples and guidance when using MPM for practical applications. MPM covers problems in static and dynamic situations within a common framework. It also opens new frontiers in geotechnical modelling and numerical analysis. It represents a powerful tool for exploring large deformation behaviours of soils, structures and fluids, and their interactions, such as internal and external erosion, and post-liquefaction analysis; for instance the post-failure liquid-like behaviours of landslides, penetration problems such as CPT and pile installation, and scouring problems related to underwater pipelines. In the recent years, MPM has developed enough for its practical use in industry, apart from the increasing interest in the academic world.

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## **GEOTECHNICAL AND GEOPHYSICAL SITE CHARACTERIZATION 4**

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CRC Press Site characterization is a fundamental step towards the proper design, construction and long term performance of all types of geotechnical projects, ranging from foundation, excavation, earth dams, embankments, seismic hazards, environmental issues, tunnels, near and offshore structures. The Fourth International Conference on Site Characterization

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## **THE CIVIL ENGINEERING HANDBOOK**

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CRC Press First published in 1995, the award-winning Civil Engineering Handbook soon became known as the field's definitive reference. To retain its standing as a complete, authoritative resource, the editors have incorporated into this edition the many changes in techniques, tools, and materials that over the last seven years have found their way into civil engineering research and practice. The Civil Engineering Handbook, Second Edition is more comprehensive than ever. You'll find new, updated, and expanded coverage in every section. In fact, more than 1/3 of the handbook is new or substantially revised. In particular you'll find increased focus on computing reflecting the rapid advances in computer technology that has revolutionized many aspects of civil engineering. You'll use it as a survey of the field, you'll use it to explore a particular subject, but most of all you'll use The Civil Engineering Handbook to answer the problems, questions, and conundrums you encounter in practice.

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## **ADVANCES IN UNSATURATED GEOTECHNICS**

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## **PROCEEDINGS OF SESSIONS OF GEO-DENVER 2000 : AUGUST 5-8, 2000, DENVER, COLORADO**

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Amer Society of Civil Engineers **GSP 99** contains 38 papers presented at sessions at Geo-Denver 2000, held in Denver, Colorado, August 5-8, 2000.

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## **LAND DEVELOPMENT HANDBOOK, FOURTH EDITION**

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McGraw Hill Professional The definitive guide to land development—fully

updated to cover the latest industry advances. This thoroughly revised resource lays out step-by-step approaches from feasibility, through design and into permitting stages of land development projects. The book offers a holistic view of the land development process for public and private project types - including residential, commercial, mixed-use and institutional. Land Development Handbook, Fourth Edition contains the latest information on green technologies and environmentally conscious design methods. Detailed technical appendices, revised graphics, and case studies round out the content included. This edition covers:

- Due diligence, planning, and zoning
- Review procedures, building codes, and development costs
- Environmental and historical considerations
- Site analysis and preliminary engineering
- Feasibility studies and site inspections
- Conceptual and schematic design
- Site selection, yield, and impact studies
- Final design processes and sample plans
- Components of a site plan and the approval process
- Site grading, road design, and utility design
- Stormwater management and hydrology
- Erosion and sediment control
- Permits, bonds, and construction documents
- Soils, floodplain studies and stream restoration

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## **SOILS IN CONSTRUCTION**

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### **FIFTH EDITION**

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Waveland Press A generation of construction-management students has learned from the easy-to-follow, understandable material in **Soils in Construction**. By keeping math simple and emphasizing construction operations and applications over engineering theory, the authors have created an ideal resource for non-technical, management-focused courses. Students interested in the field applications of soils will gain the knowledge they need to interact confidently with geotechnical engineers in their careers. The book's extensive discussion of soil materials in the first five chapters is supplemented by an appendix describing testing methods that can easily be adapted to the hands-on component of a course. The remaining seven chapters cover the role that soil materials play in various aspects of construction contracting. Every chapter ends with problems presenting students with the kinds of scenarios they'll face in the field.

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## **GEOTECHNICAL ENGINEERING HANDBOOK**

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J. Ross Publishing The **Geotechnical Engineering Handbook** brings together essential information related to the evaluation of engineering properties of soils, design of foundations such as spread footings, mat foundations, piles, and drilled shafts, and fundamental principles of analyzing the stability of slopes and embankments, retaining walls, and other earth-retaining structures. The Handbook also covers soil dynamics and foundation vibration to analyze the behavior of foundations subjected to cyclic vertical, sliding and rocking excitations and topics addressed in some

detail include: environmental geotechnology and foundations for railroad beds.

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## **THE CONTROL HANDBOOK**

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CRC Press This is the biggest, most comprehensive, and most prestigious compilation of articles on control systems imaginable. Every aspect of control is expertly covered, from the mathematical foundations to applications in robot and manipulator control. Never before has such a massive amount of authoritative, detailed, accurate, and well-organized information been available in a single volume. Absolutely everyone working in any aspect of systems and controls must have this book!

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## **STRUCTURAL ENGINEERING AND GEOMECHANICS - VOLUME 1**

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EOLSS Publications An understanding of dynamic effects on structures is critical to minimize losses from earthquakes and other hazards. These three books provide an overview of essential topics in structural and geotechnical engineering with an additional focus on related topics in earthquake engineering to enable readers gain such an understanding. One of the ultimate objectives of these books is to provide readers with insights into seismic analysis and design. However, in order to accomplish that objective, background material on structural and geotechnical engineering is necessary. Hence the first two sections of the book provide this background material followed by selected topics in earthquake engineering. The material is organized into three major parts. The first section covers topics in structural engineering. Beginning with fundamental mechanics of materials, the book includes chapters on linear and nonlinear analysis as well as topics on modeling of structures from different perspectives. In addition to traditional design of structural systems, introductions to important concepts in structural reliability and structural stability are discussed. Also covered are subjects of recent interest, viz., blast and impact effects on structures as well as the use of fiber reinforced polymer composites in structural applications. Given the growing interest in urban renewal, an interesting chapter on restoration of historic cities is also included. The second part of the book covers topics in geotechnical engineering, covering both shallow and deep foundations and issues and procedures for geotechnical modeling. The final part of the book focuses on earthquake engineering with emphasis on both structures and foundations. Here again, the material covered includes both traditional seismic design and innovative seismic protection. And more importantly, concepts in modeling for seismic analysis are highlighted.

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## **FOUNDATIONS AND EARTH RETAINING STRUCTURES**

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John Wiley & Sons Incorporated Budhu presents the basic concepts and fundamental principles that engineers must know to understand the methods utilized in foundation design by exploring the values and

limitations of popular methods of analyses in foundation engineering.

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## **GEOTECHNICAL APPLICATIONS**

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### **IGC 2016 VOLUME 4**

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**Springer** This book comprises select proceedings of the annual conference of the Indian Geotechnical Society. The conference brings together research and case histories on various aspects of geotechnical engineering and geoenvironmental engineering. The book presents papers on geotechnical applications and case histories, covering topics such as (i) shallow and deep foundations; (ii) stability of earth and earth retaining structures; (iii) rock engineering, tunneling, and underground constructions; (iv) forensic investigations and case histories; (v) reliability in geotechnical engineering; and (vi) special topics such as offshore geotechnics, remote sensing and GIS, geotechnical education, codes, and standards. The contents of this book will be of interest to researchers and practicing engineers alike.

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## **THE SEISMIC DESIGN HANDBOOK**

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**Springer Science & Business Media** This handbook contains up-to-date existing structures, computer applications, and information on planning, analysis, and design seismic design of wood structures. A new and very useful feature of this edition of earthquake-resistant building structures. Its intention is to provide engineers, architects, is the inclusion of a companion CD-ROM disc developers, and students of structural containing the complete digital version of the handbook itself and the following very engineering and architecture with authoritative, yet practical, design information. It represents important publications: an attempt to bridge the persisting gap between I. UBC-IBC (1997-2000) Structural advances in the theories and concepts of Comparisons and Cross References, ICBO, earthquake-resistant design and their 2000. implementation in seismic design practice. 2. NEHRP Guidelines for the Seismic The distinguished panel of contributors is Rehabilitation of Buildings, FEMA-273, Federal Emergency Management Agency, composed of 22 experts from industry and universities, recognized for their knowledge and 1997. extensive practical experience in their fields. 3. NEHRP Commentary on the Guidelinesfor They have aimed to present clearly and the Seismic Rehabilitation of Buildings, FEMA-274, Federal Emergency concisely the basic principles and procedures pertinent to each subject and to illustrate with Management Agency, 1997. practical examples the application of these 4. NEHRP Recommended Provisions for principles and procedures in seismic design Seismic Regulations for New Buildings and practice. Where applicable, the provisions of Older Structures, Part 1 - Provisions, various seismic design standards such as mc FEMA-302, Federal Emergency 2000, UBC-97, FEMA-273/274 and ATC-40 Management Agency, 1997.

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## **ANALYSIS OF LATERALLY LOADED PILES IN MULTILAYERED SOIL DEPOSITS**

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Purdue University Press This report focuses on the development of a new method of analysis of laterally loaded piles embedded in a multi-layered soil deposit treated as a three-dimensional continuum. Assuming that soil behaves as a linear elastic material, the governing differential equations for the deflection of laterally loaded piles were obtained using energy principles and calculus of variations. The differential equations were solved using both the method of initial parameters and numerical techniques. Soil resistance, pile deflection, slope of the deflected pile, bending moment and shear force can be easily obtained at any depth along the entire pile length. The results of the analysis were in very good agreement with three-dimensional finite element analysis results. The analysis was further extended to account for soil nonlinearity. A few simple constitutive relationships that allow for modulus degradation with increasing strain were incorporated into the analysis. The interaction of piles in groups was also studied.

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### **IFCEE 2015**

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## **PROCEEDINGS OF THE INTERNATIONAL FOUNDATIONS CONGRESS AND EQUIPMENT EXPO 2015, MARCH 17-21, 2015, SAN ANTONIO, TEXAS**

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### **CONTROL SYSTEM DESIGN**

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Pearson For both undergraduate and graduate courses in Control System Design. Using a "how to do it" approach with a strong emphasis on real-world design, this text provides comprehensive, single-source coverage of the full spectrum of control system design. Each of the text's 8 parts covers an area in control--ranging from signals and systems (Bode Diagrams, Root Locus, etc.), to SISO control (including PID and Fundamental Design Trade-Offs) and MIMO systems (including Constraints, MPC, Decoupling, etc.).

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## **GEOTECHNICAL ENGINEERING AND SUSTAINABLE CONSTRUCTION**

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### **SUSTAINABLE GEOTECHNICAL ENGINEERING**

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Springer This book contains selected articles from the Second International Conference on Geotechnical Engineering-Iraq (ICGE-Iraq) held in Akre/Duhok/Iraq from June 22 to 23, 2021, to discuss the challenges, opportunities, and problems of geotechnical engineering in projects. Also, the conference includes modern applications in structural engineering, materials of construction, construction management, planning and design of structures, and remote sensing and surveying engineering. The ICGE-Iraq organized by the Iraqi Scientific Society of Soil Mechanics and

**Foundation Engineering (ISSSMFE) in cooperation with Akre Technical Institute / Duhok Polytechnic University, College of Engineering /University of Baghdad, and Civil Engineering Department/University of Technology. The book covers a wide spectrum of themes in civil engineering, including but not limited to sustainability and environmental-friendly applications. The contributing authors are academic and researchers in their respective fields from several countries. This book will provide a valuable resource for practicing engineers and researchers in the field of geotechnical engineering, structural engineering, and construction and management of projects.**

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### **GEOTECHNICAL CHARACTERISTICS OF SOILS AND ROCKS OF INDIA**

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**CRC Press This book presents mainly the geotechnical details of geomaterials (soils and rocks) found in all the 36 states and union territories of India. There are 37 chapters in this book. Chapter 1 provides an overview of geomaterials, focusing on their engineering properties as determined based on the project site investigations and laboratory/field tests; this will help readers understand the technical details explained throughout the book, with each chapter dealing with geomaterials of one state/union territory only. Each chapter, contributed by a team of authors, follows a common template with the following sections: introduction, major types of soils and rocks, properties of soils and rocks, use of soils and rocks as construction materials, foundation and other geotechnical structures, other geomaterials, natural hazards, case studies and field tests, geoenvironmental impact on soils and rocks, concluding remarks and references. All the chapters cover highly practical information and technical data for application in ground infrastructure projects, including foundations of structures (buildings, towers, tanks, machines and so on), highway, railway and airport pavements, embankments, retaining structures/walls, dams, reservoirs, canals and ponds, and landfills and tunnels. These details are also highly useful for professionals dealing with mining, oil and gas projects and agricultural and aquacultural engineering projects. Although this book covers the Indian ground characteristics, the information provided can be helpful in some suitable forms to the professionals of other countries having similar ground conditions and applications.**

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### **GEOTECHNICAL ENGINEERING CALCULATIONS AND RULES OF THUMB**

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**Butterworth-Heinemann Geotechnical Engineering Calculations Manual offers geotechnical, civil and structural engineers a concise, easy-to-understand approach the formulas and calculation methods used in of soil and geotechnical engineering. A one stop guide to the foundation design, pile foundation design, earth retaining structures, soil stabilization techniques and computer software, this book places calculations for almost all aspects of geotechnical engineering at your finger tips. In this book, theories is**

explained in a nutshell and then the calculation is presented and solved in an illustrated, step-by-step fashion. All calculations are provided in both fps and SI units. The manual includes topics such as shallow foundations, deep foundations, earth retaining structures, rock mechanics and tunnelling. In this book, the author's done all the heavy number-crunching for you, so you get instant, ready-to-apply data on activities such as: hard ground tunnelling, soft ground tunnelling, reinforced earth retaining walls, geotechnical aspects of wetland mitigation and geotechnical aspects of landfill design. • Easy-to-understand approach the formulas and calculations • Covers calculations for foundation, earthworks and/or pavement subgrades • Provides common codes for working with computer software • All calculations are provided in both US and SI units

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## **HYDROLOGY AND HYDRAULIC SYSTEMS**

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### **FOURTH EDITION**

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