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# Engineering Geology Parbin Singh

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Engineering Geology  
A Practical Approach in Civil Engineering  
Textbook of Engineering Geology  
Principles of Engineering Geology  
Manual of Applied Geology for Engineers  
Rock Mass Classification  
A Textbook of Geology  
Rutley's Elements of Mineralogy  
Engineering Rock Mass Classification  
A Textbook of Engineering and General Geology  
Principles of Microbiology  
A Text Book Of Geology  
Principles and Practice  
Geology of Petroleum, 2e  
7th New Delhi World Book Fair, 7-17 February 1986  
Engineering Geology  
Engineering Geology  
Textbook of Physical Geology  
National Catalogue of University Level Books, 1971  
Theory of Structural Geology  
Geology: A Complete Introduction: Teach Yourself  
Civil Engineering Materials  
Structural Geology: Fundamentals and Modern Developments  
Objective Applied Geology (For Gsi, Ongc, Sail, Csir, Gate, Upse)  
Books from India  
Bulletin of the Institution of Engineers (India).  
Engineering Geology  
A Textbook of Engineering Physics  
A Text Book of Engineering and General Geology  
Raw Materials Update  
Tunnelling, Foundations and Landslides  
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**SANIYA CANTRELL**

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Engineering Geology

Springer Science &  
Business Media  
Rock Mass Classifications

- A Practical Approach in Civil Engineering was written in response to the many unanswered questions regarding this subject. Questions such as - Is Classification reasonably reliable? Can it be successful in crisis management of geohazards? Can a single Classification system be general for all rock structures? Is Classification a scientific approach? Laborious field research was undertaken in the Himalayan mountains by a team of scientists from the Central Mining Research Institute (CMRI), University of Roorkee (UOR), Central Soil and Material Research Station (CSMRS), U.P. Irrigation Research Institute (UPIRI), and Norwegian Geotechnical Institute (NGI) to answer these questions. The results obtained from the research work were systematically compiled to produce this book which bears particular relevance to civil, mining and petroleum engineers and geologists. Endorsements "It is a Handbook of Rock Engineering" - Zhao Jian, School of Civil & Structural Engineering, Nanyang Technological University, Singapore "I came across your new

book - Rock Mass Classification, absolutely fantastic" - Subodh K. Jain, U.S.A  
*A Practical Approach in Civil Engineering*  
 Discovery Publishing House  
 All engineering structures react with the ground, and most structures make use of materials extracted from the earth. While an engineer cannot be expected to be also an expert geologist, he must have a working knowledge of the subject if his structures are to be economically designed, safely built and safely used. He must also be able to recognise where and when he needs the advice of a specialist. A Manual of Applied Geology is designed as a guide for practising engineers. A team of distinguished engineers and scientists has been assembled to present the basic information which an engineer needs and to explain how best to use this information to deal with problems in his work. Chapters cover general theory, Formation of rocks, their properties and identification, landforms and soils, geophysical methods, maps and other information sources. the particular problems of terrain evaluation, site

selection and investigation and common construction problems (including groundwater control, stability, foundations and underground work) are examined and there are chapters on materials and hydrogeology. Aimed principally at the engineer who is meeting geological problems in his everyday work, this generously illustrated volume will also be useful as an introduction to the subject for first degree engineering students  
*Textbook of Engineering Geology* Springer Science & Business Media  
 A Textbook of Engineering Physics is written with two distinct objectives: to provide a single source of information for engineering undergraduates of different specializations and provide them a solid base in physics. Successive editions of the book incorporated topics as required by students pursuing their studies in various universities. In this new edition the contents are fine-tuned, modernized and updated at various stages.  
**Principles of Engineering Geology**  
 Springer Science & Business Media

No engineering structure can be built on the ground or within it without the influence of geology being experienced by the engineer. Yet geology is an ancillary subject to students of engineering and it is therefore essential that their training is supported by a concise, reliable and usable text on geology and its relationship to engineering. In this book all the fundamental aspects of geology are described and explained, but within the limits thought suitable for engineers. It describes the structure of the earth and the operation of its internal processes, together with the geological processes that shape the earth and produce its rocks and soils. It also details the commonly occurring types of rock and soil, and many types of geological structure and geological maps. Care has been taken to focus on the relationship between geology and geomechanics, so emphasis has been placed on the geological processes that bear directly upon the composition, structure and mechanics of soil and rocks, and on the movement of

groundwater. The descriptions of geological processes and their products are used as the basis for explaining why it is important to investigate the ground, and to show how the investigations may be conducted at ground level and underground. Specific instruction is provided on the relationship between geology and many common activities undertaken when engineering in rock and soil.

Elsevier

Rock mass classification methods are commonly used at the preliminary design stages of a construction project when there is very little information. It forms the bases for design and estimation of the required amount and type of rock support and groundwater control measures.

Encompassing nearly all aspects of rock mass classifications in detail, *Civil Engineering Rock Mass Classification: Tunnelling, Foundations and Landsides* provides construction engineers and managers with extensive practical knowledge which is time-tested in the projects in Himalaya and other parts of the world in complex geological conditions.

Rock mass classification is an essential element of feasibility studies for any near surface construction project prior to any excavation or disturbances made to earth. Written by an author team with over 50 years of experience in some of the most difficult mining regions of the world, *Civil Engineering Rock Mass Classification: Tunnelling, Foundations and Landsides* provides construction engineers, construction managers and mining engineers with the tools and methods to gather geotechnical data, either from rock cuts, drifts or core, and process the information for subsequent analysis. The goal is to use effective mapping techniques to obtain data can be used as input for any of the established rock classification systems. The book covers all of the commonly used classification methods including: Barton's Q and Q' systems, Bieniawski's RMR, Laubscher's MRMR and Hoek's and GSI systems. With this book in hand, engineers will be able to gather geotechnical data, either from rock cuts, drifts or core, and process the information for subsequent analysis. Rich

with international case studies and worked out equations, the focus of the book is on the practical gathering information for purposes of analysis and design. Identify the most significant parameters influencing the behaviour of a rock mass Divide a particular rock mass formulation into groups of similar behaviour, rock mass classes of varying quality Provide a basis of understanding the characteristics of each rock mass class Relate the experience of rock conditions at one site to the conditions and experience encountered at others Derive quantitative data and guidelines for engineering design Provide common basis for communication between engineers and geologists

### **Manual of Applied Geology for Engineers**

CBS Publishers & Distributors Pvt Limited, India  
 Contents: Introduction, Origin of the Earth, Age of the Earth, Interior of the Earth, Interior of the Earth, The Continents and Mountains, Isostasy, Theory of Plate Tectonics, Evolution of Landforms, Volcanoes, Earthquakes, Weathering, Soils, The Study of Rocks,

Mineralogy, Structural Geology.

### Rock Mass Classification Teach Yourself

Geology is the science of earth's crust (lithosphere) consisting of rocks and soils. While mining and mineralogical engineers are more interested in rocks, their petrology (formation) and mineralogy, civil engineers are equally interested in soils and rocks, in their formations, and also in their properties for civil engineering design and construction. This book is so written that the subject can easily be taught by a civil engineering faculty member specialised in soil mechanics. Dexterously organized into four parts, this book in Part I (Chapters 1 to 11) deals with the formation of rocks and soils. The classification of soils, lake deposits, coastal deposits, wind deposits along with marshes and bogs are described in Part II (Chapters 12 to 20). As the book advances, it deals with the civil engineering problems connected with soils and rocks such as landslides, rock slides, mudflow, earthquakes, tsunami and other natural phenomena in Part III (Chapters 21 to 24). Finally, in Part IV

(Chapters 25 to 30), this text discusses the allied subjects like the origin and nature of cyclones, rock mass classification and soil formation.

Designed to serve as a textbook for the undergraduate students of civil engineering, this book is equally useful for the practising civil engineers. **SALIENT FEATURES :** Displays plenty of figures to clarify the concepts Includes chapter-end review exercises to enhance the problem-solving skills of the students Summary at the end of each chapter brings into focus the essence of the chapter Appendices at the end of the text supply extra information on important topics

### **A Textbook of Geology**

Firewall Media

This book is written to explain the influence ground conditions can have upon engineering with rocks and soils, and upon designing, analysing and executing an engineered response to the geological and geomorphological processes acting on them; these subjects form the essence of Engineering Geology. The text is written for students of the subject, either geologists or engineers, who

encounter the challenge of idealising the ground and its processes for the purposes of design and of quantifying them for the purpose of analysis. With this in mind the book describes how geology can dictate the design of ground investigations, influence the interpretation of its findings, and be incorporated into design and analysis. The reader is constantly reminded of basic geology; the "simple" things that constitute the "big picture", a neglect of which may cause design and analyses to be at fault, and construction not to function as it should.

**Rutley's Elements of Mineralogy** CRC Press  
A Publishers Weekly best book of 1995! Dr. Michael Guillen, known to millions as the science editor of ABC's Good Morning America, tells the fascinating stories behind five mathematical equations. As a regular contributor to daytime's most popular morning news show and an instructor at Harvard University, Dr. Michael Guillen has earned the respect of millions as a clear and entertaining guide to the exhilarating world of science and mathematics. Now Dr.

Guillen unravels the equations that have led to the inventions and events that characterize the modern world, one of which -- Albert Einstein's famous energy equation,  $E=mc^2$  -- enabled the creation of the nuclear bomb. Also revealed are the mathematical foundations for the moon landing, airplane travel, the electric generator -- and even life itself. Praised by Publishers Weekly as "a wholly accessible, beautifully written exploration of the potent mathematical imagination," and named a Best Nonfiction Book of 1995, the stories behind The Five Equations That Changed the World, as told by Dr. Guillen, are not only chronicles of science, but also gripping dramas of jealousy, fame, war, and discovery.

**Engineering Rock Mass Classification** CBS

Publishers & Distributors Pvt Limited, India  
Presents a comprehensive and up-to-date account of the fundamental aspects of structural geology, emphasising both classical concepts and modern developments. A detailed account of the techniques of geometrical analysis is provided, giving a sound background to principles

of geological deformation and in-depth analysis of mechanisms of formation of geological structures. Many new features are included such as detailed discussions on rotation of rigid inclusions and passive markers, boudinage (including chocolate tablet boudins, foliation boudins and shear fracture boudins), structural implications of basement-cover relations and time-relation between crystallation and deformation. The book presents the methods of structural analysis from microscopic to map scale, describes modern techniques used in field and laboratory and offers a balanced picture of modern structural geology as it emerges from combined field, experimental and theoretical studies.

Hardback edition (0 080 41879 1) also available £50.00

*A Textbook of Engineering and General Geology*

Thomas Telford

This book is unique in bridging the gap between geology and geophysics. Its integrative approach presents students and researchers in these disciplines with other methodologies as they try to understand the Earth's processes. It runs the

gamut of earth sciences, from earthquakes and seismic exploration to thermal convection and the orogenic processes. Each chapter starts with the well-established facts and then proceeds through a logical framework to the most conjectural questions, such as continental drift in Paleozoic and Precambrian times or mantle convection. Many of the issues discussed here do not yet have unanimously agreed solutions, but the extensive references point the reader to further possibilities.

### **Principles of**

**Microbiology** CRC Press  
The last thorough revision of Rutley's Elements of Mineralogy appeared as the 23rd Edition in 1936. In subsequent editions, an effort to keep abreast with the great progress in the science was made by small (and often awkward) modifications and, especially, by the addition of an independent chapter on the atomic structure of minerals. For this present edition, the complete re-setting of the book has made possible not only the integration of the added chapter on atomic structure into its proper place in the accounts of

the chemical and physical properties of minerals, but also extensive rewriting and rearrangement of the material in the first part of the book. To this part, also, has been added a short chapter on the classification of minerals. In the second part, the Description of Minerals, numerous, if not so extensive, modifications and modernisations have been introduced. A couple of dozen new figures have been added, mostly in the early part of the book. More specifically, the major changes in this new edition are the following. The electronic structure of atoms supplies the guide lines for the whole account of mineral-chemistry; additional items concern the electrochemical series, of interest in the occurrence and metallurgical treatment of ores, and chemical analysis. On the physical side, the dependence of physical properties of minerals on their atomic structure is emphasized and, in addition, a brief account of radioactivity and isotopic age-determination is given. A Text Book Of Geology WCB/McGraw-Hill  
A Text Book Of Geology Discovery Publishing House

*Principles and Practice* S. Chand Publishing  
Every engineering structure, whether it's a building, bridge or road, is affected by the ground on which it is built. Geology is of fundamental importance when deciding on the location and design of all engineering works, and it is essential that engineers have a basic knowledge of the subject. Engineering Geology introduces the fundamentals of the discipline and ensures that engineers have a clear understanding of the processes at work, and how they will impact on what is to be built. Core areas such as stratigraphy, rock types, structures and geological processes are explained, and put in context. The basics of soil mechanics and the links between groundwater conditions and underlying geology are introduced. As well as the theoretical knowledge necessary, Professor Bell introduces the techniques that engineers will need to learn about and understand the geological conditions in which they intend to build. Site investigation techniques are detailed, and the risks and risk avoidance methods for dealing with different conditions are

explained. \* Accessible introduction to geology for engineers \* Key points illustrated with diagrams and photographs \*

Teaches the impact of geology on the planning and design of structures  
**Geology of Petroleum, 2e** A Text Book Of Geology

'Engineering geology' is one of those terms that invite definition. The American Geological Institute, for example, has expanded the term to mean 'the application of the geological sciences to engineering practice for the purpose of assuring that the geological factors affecting the location, design, construction, operation and maintenance of engineering works are recognized and adequately provided for'. It has also been defined by W. R. Judd in the McGraw-Hill

Encyclopaedia of Science and Technology as 'the application of education and experience in geology and other geosciences to solve geological problems posed by civil engineering structures'. Judd goes on to specify those branches of the geological or geosciences as surface (or surficial) geology, structural/fabric geology, geohydrology, geophysics, soil and rock

mechanics. Soil mechanics is firmly included as a geological science in spite of the perhaps rather unfortunate trends over the years (now happily being reversed) towards purely mechanistic analyses which may well provide acceptable solutions for only the simplest geology. Many subjects evolve through their subject areas from an interdisciplinary background and it is just such instances that pose the greatest difficulties of definition. Since the form of educational development experienced by the practitioners of the subject ultimately bears quite strongly upon the corporate concept of the term 'engineering geology', it is useful briefly to consider that educational background.

**Engineering Geology**

Elsevier

Physical Geology \*  
 Geomorphology \*  
 Crystallography \*  
 Descriptive Mineralogy \*  
 Optical Mineralogy \*  
 Petrology \* Structural Geology \* Stratigraphy \*  
 Palaeontology \* Economic Geology \* Geochemistry \*  
 Hydrogeology \*  
 Engineering Geology \*  
 Photogeology and Remote Sensing

### **Engineering Geology**

Springer Science & Business Media  
 This Volume Is One Of The Two Which Offer A Comprehensive Course In Those Parts Of Theory And Practice Of Plane And Geodetic Surveying That Are Most Commonly Used By Civil Engineers. The First Volume Covers In 24 Chapters, The Most Common Surveying Operations. Each Topic Introduced Is Thoroughly Described, The Theory Is Rigorously Developed, And A Large Number Of Numerical Examples Are Included To Illustrate Its Application. General Statements Of Important Principles And Methods Are Almost Invariably Given By Practical Illustration. Apart From Illustrations Of Old And Conventional Instruments, Emphasis Has Been Placed On New Or Modern Instruments, Both For

Ordinary As Well As Precise Work. A Good Deal Of Space Has Been Given To Instrumental Adjustments With Thorough Discussion Of Geometrical Principles In Each Case. Many New Advanced Problems Have Also Been Added Which Will Prove Useful For Competitive Examinations.  
*Textbook of Physical Geology* S. Chand Publishing

This seasoned textbook introduces geology for civil engineering students. It covers minerals and rocks, superficial deposits and the distribution of rocks at or below the surface. It then looks at groundwater and gives guidance on the exploration of a site before looking at the civil engineering implications of rocks and the main geological factors which

affect typical engineering projects.  
National Catalogue of University Level Books, 1971 Hachette Books  
 Textbook of Engineering Geology presents study of geology comprehensively from a civil engineering point of view. The author contends that mere technical perfection cannot ensure the safety and success of large-scale civil engineering constructions such a

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