Geology Book Of K M Bangar In

Now in full colour, the third edition of this well established book provides a readable and highly illustrated overview of the aspects of geology that are most significant to civil engineers. Sections in the book include those devoted to the main rock types, weathering, ground investigation, rock mass strength, failures of old mines, subsidence on peats and clays, sinkholes on limestone and chalk, water in landslides, slope stabilization and understanding ground conditions. The roles of both natural and man-induced processes are assessed, and this understanding is developed into an appreciation of the geological environments potentially hazardous to civil engineering and construction projects. For each style of difficult ground, available techniques of site investigation and remediation are reviewed and evaluated. Each topic is presented as a double page spread with a careful mix of text and diagrams, with tabulated reference material on parameters such as bearing strength of soils and rocks. This new edition has been comprehensively updated and covers the entire spectrum of topics of interest for both students and practitioners in the field of civil engineering. Engineering Geology is a multidisciplinary subject that interacts with other disciplines, such as mineralogy, petrology, structural geology, hydrogeology, seismic engineering, rock engineering, soil mechanics, geophysics, remote sensing (RS-GIS-GPS) and environmental geology. This book is the only one of its kind in the Indian market that caters to the students of all these subjects. Engineers require a deep understanding,

interpretation and analyses of earth sciences before suggesting engineering designs and remedial measures to combat natural disasters, such as earthquakes, volcanoes, landslides, debris flows, tsunamis and floods. This book covers all aspects of engineering geology and is intended to serve as a reference for practicing civil engineers, geotechnical engineers, marine engineers, geologists and mining engineers. Engineering Geology has also been designed as a textbook for students pursuing undergraduate and postgraduate courses in advanced/applied geology and earth sciences. A plethora of examples and case studies relevant to the Indian context have been included for better understanding of the geological challenges faced by engineers.New in this Edition• The concept of watershed and the depiction of watershed atlas of India• Latest findings by the Indian Bureau of Mines• Recent developments in coastal engineering and innovative structures• New types of protective structures to guard against tsunamis• Role of geology in building smart cities• Environmental legislation in India

The Moon held little interest for most scientists after its basic astronomic properties had been determined and before direct exploration appeared likely. Speculations about its internal structure, composition, and origin were only broadly constrained by cosmochemical data from meteorites and solar spectra, and by astronomic data about its size, shape, motions, and surficial properties. Most investigators who were active before the space age began in 1957 believed that significant new advances in lunar knowledge required acquisition of additional data.

One analytical technique, however, was insufficiently exploited before the 1960's. Few scientists since the geologist Gilbert had studied the lunar surface systematically from the historical point of view. Those who did immediately obtained important new insights about the Moon's postaccretion evolution. Then, the pioneering work of E.M. Shoemaker and R.J. Hackman focused the powerful methods of stratigraphy on lunar problems. Stratigraphy is the study of the spatial distribution, chronologic relations, and formative processes of layered rocks. Its application to the Moon came relatively late and met resistance, but the fundamental stratigraphic approach was, in fact, readily transferable to the partly familiar, partly exotic deposits visible on the lunar surface. Stratigraphic methods were applied systematically during the 1960's in a program of geologic mapping that aimed at reconstructing the evolution of the Moon's nearside. Order was discovered among the seemingly diverse and random landforms of the lunar surface by determining the sequence in which they were emplaced. The stratigraphic sequence and the emplacement processes deduced therefrom provided a framework for exploration by the Apollo program and for the task of analyzing the returned samples. During the 19703, the sophisticated labor of hundreds of analysts was brought to bear on the wealth of material returned by the American Apollo and the Soviet Luna spacecraft. Our present perception of the Moon has emerged from the interplay between sampling studies and stratigraphically based photogeology. These two approaches are complementary: Photogeology

contributes a historical context by viewing the whole Moon from a distant vantage point, whereas the samples contain information on rock types and absolute ages unobtainable by remote methods. Neither approach by itself, even the most elaborate program of direct surface exploration, could have yielded the current advanced state of knowledge within the relatively short time of two decades. This volume presents a model for the geologic evolution of the Moon that has emerged mainly from this integration of photogeologic stratigraphy and sample analysis. Other aspects of the vast field of lunar science are discussed here only insofar as they pertain to the evolution of visible surface features. Chemical data obtained by remote sensing supplement the photogeologic interpretations of some geologic units, and geophysical data obtained both from lunar orbit and on the surface constrain hypotheses of the origin of many internally generated structures and deposits. Studies of the same data that treat the Moon as a whole, including speculations about the intriguing but unsolved problem of its origin, have been adequately covered in other reviews. This volume is written primarily for geoscientists and other planetologists who have examined some aspect of lunar or planetary science and who want a review of lunar science from the viewpoint of historical geology. It should also provide a useful summary for the advanced student who is conversant with common geologic terms. It may, furthermore, interest the geologist who has not studied the Moon but who wishes to see how his methodology has been applied to another planet.

Principles of Precambrian Geologyis an update to the 1991 book, Precambrian Geology: The Dynamic Evolution of the Continental Crust, by the same author. The new edition covers the same topics in a more concise and accessible format and is replete with explanatory figures, tables, and illustrations. The book serves as a modern comprehensive statement on the Earth's Precambrian crust, covering the main aspects of distribution, lithiostratigraphy, age, and petrogenesis of Precambrian rocks by continent within the context of the Earth's evolving continental crust. Principles of Precambrian Geology provides a suitable framework for assessing various Earth dynamic and biospheric hypotheses, including the modern plate tectonic paradigm and the Gaian hypothesis. Despite the concise format, the new edition provides extensive updated references to support the information presented. It is designed to serve the needs of student, teacher, explorationist and general student of the continental crust. Updated to provide more concise accessible information Extensive illustrations, tabulations, and maps Provides a framework for assessing recent hypothesis on Earth dynamics Covers main aspects of distribution, lithostratigraphy, age, and protogenesis of Precambrian rocks

This book is the first comprehensive account in English of the geology of Chile, providing a key reference work that brings together many years of research, and written mostly by Chilean authors from various universities and other centres of research excellence. The 13 chapters begin with a general overview, followed by detailed

accounts of Andean tectonostratigraphy and magmatism, the amazingly active volcanism, the world class ore deposits that have proven to be so critical to the welfare of the country, and Chilean water resources. The subject then turns to geophysics with an examination of neotectonics and earthquakes, the hazardous frequency of which is a daily fact of life for the Chilean population. There are chapters on the offshore geology and oceanography of the SE Pacific Ocean, subjects that continue to attract much research not least from those seeking to understand world climatic variations, and on late Quaternary land environments, concluding with an account examining human colonization of southernmost America. The geological evolution of Chile is the c. 550 million year history of a continental margin over 4000 km long. During his voyage on H.M.S. Beagle, an extended visit to Chile (1834-35) had a profound impact on Charles Darwin, especially on his understanding of volcanoes, earthquakes and tsunamis.

Geology Applied to Engineering bridges the gap between the two fields through its versatile application of the physical aspects of geology to engineering design and construction. The Second Edition elucidates real-world practices, concerns, and issues for today's engineering geologists and geotechnical engineers. Both undergraduate and graduate students will benefit from the book's thorough coverage, as will professionals involved in assessing sites for engineering projects, evaluating construction materials, developing water resources, and conducting tests using industry standards. West and Shakoor offer expanded coverage

of important topics such as slope stability and ground subsidence and significant fields in engineering geology, such as highways, dams, tunnels, and rock blasting. In order to allow for the diverse backgrounds of geologists and engineers, material on the properties of minerals, rocks, and soil provides a working knowledge of applied geology as a springboard to more comprehensive subjects in engineering. Example problems throughout the text demonstrate the practical applications of soil mechanics, rock weathering and soils, structural geology, groundwater, and geophysics. Thought-provoking and challenging exercises supplement core concepts such as determining shear strength and failure conditions, calculating the depth needed for borings, reading and analyzing maps, and constructing stratigraphic cross sections.

'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 mainten ance 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 geo-sciences as surface (or surficial) geology, structural/fabric geology,

geohydro logy, 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 ulti mately bears quite strongly upon the corporate concept of the term 'engineering geology', it is useful briefly to consider that educational background.

A Textbook of Geology (general and Engineering)Principles of Engineering GeologySpringer Science & Business Media

Provides readers with an introduction to geology with a focus on real-world applications. Case histories in nearly every chapter help emphasize the relationship between geology and engineering. Has a solid background in the basics of geology including mineralogy, igneous, sedimentary, and metamorphic rocks, structural geology and plate tectonics, weathering and erosion, rivers, coastlines, and glaciers. New material covers geologic resources, geologic hazards, and environmental challenges in the current century. A new overview covers the implications of population growth, the use and depletion of energy and water resources, the employment opportunities for geologists, potential effects of climate change. A useful reference for anyone in the fields of civil engineering or environmental/earth science.

The Incredible Plate Tectonics Comic is a wild adventure in

earth science. Follow Geo and his robot dog, Rocky, as they travel back in time to Pangea, surf a tsunami, and escape an erupting volcano—all in time for Geo's first-period science test! The journey starts 200 million years ago and takes you to modern-day Hawai'i, the ocean floor, and deep inside the Earth. You'll learn: –How scientists developed the theory of plate tectonics –Why the Earth shakes –What's in the center of the Earth –How volcanoes can form islands The Incredible Plate Tectonics Comic will teach you about geology in a fun, lively, and visual way. Ages 8+. Recommended for grade 6 and up

Engineering Geology is a multidisciplinary subject which interacts with other disciplines, such as mineralogy, petrology, structural geology, hydrogeology, seismic engineering, rock engineering, soil mechanics, geophysics, remote sensing (RS-GIS-GPS), environmental geology, etc. Engineers require a deeper understanding, interpretation and analyses of earth sciences before suggesting engineering designs and remedial measures to combat natural disasters, such as earthquakes, volcanoes, landslides, debris flows, tsunamis, and floods. This book covers all aspects of Engineering Geology and is intended to serve as a reference for practicing civil engineers and mining engineers. Engineering Geology has also been designed as a textbook for students pursuing undergraduate and postgraduate courses in advanced/applied geology and earth sciences. A plethora of examples and case studies relevant to the Indian context have been included, for better understanding of the geological challenges faced by engineers.

Physical Geology is a vast subject and it is not possible to cover all aspects in one book. This book does not invent the wheel but merely put together sets of updated but concise material on Physical Geology with lots of illustrations. All illustrations are created by hand and give a real classroom

feel to the book. Students or readers can easily reproduce them by hand. This is a book, where a diagram says it all. The book is divided into four parts. The first part “The Solar System and Cosmic Bodies” deals with elements of our Solar System and the cosmic bodies around it (like meteorites, asteroids, etc.). The second part “The Earth Materials” deals with Earth and its internal structure. The third part “The Hydrologic System” is more exhaustive and deals with the hydrological system of the Earth including Weathering and Mass Wasting, Streams, Groundwater, Karst, Glaciers, Oceans and Aeolian Processes and Landforms. The fourth and the final part “The Tectonic System” deals with different aspects of Plate Tectonics, Earthquakes and Volcanoes.
Discusses the history of the earth's formation and development, and tells how to search for, identify, and extract rock and mineral samples
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

This book is one out of 8 IAEG XII Congress volumes, and deals with the theme of applied geology, which is a critical theme for the global economy. In the international, multidisciplinary approach to major engineering projects (either to macro- or mega-scale), the application of geological investigation techniques is fundamental for properly selecting the location sites, planning the construction and maintaining the infrastructures. The contributions in this book include not only engineering constructions but also case studies related to large projects on geo-resources exploration and extraction (minerals, petroleum and groundwater), energy production (hydropower, geothermal, nuclear and others), transportation (railway and highway) and waste disposal as well as the environmental management of these and other activities. The Engineering Geology for Society and Territory volumes of the IAEG XII Congress held in Torino from September 15-19, 2014, analyze the dynamic role of engineering geology in our changing world and build on the four main themes of the congress: Environment, processes, issues, and approaches. The congress topics and subject areas of the 8 IAEG XII Congress volumes are: 1. Climate Change and Engineering Geology 2. Landslide Processes 3. River Basins, Reservoir Sedimentation and Water Resources 4. Marine and Coastal Processes 5. Urban Geology, Sustainable Planning and

Landscape Exploitation 6. Applied Geology for Major Engineering Projects 7. Education, Professional Ethics and Public Recognition of Engineering Geology 8. Preservation of Cultural Heritage.

This book is one out of 8 IAEG XII Congress volumes, and deals with the theme of urban geology. Along with a rapidly growing world population, the wave of urban growth continues, causing cities to swell and new metropolitan centers to emerge. These global trends also open new ventures for underground city development. Engineering geology plays a major role in facing the increasing issues of the urban environment, such as: finding aggregates for construction works; providing adequate water supply and waste management; solving building problems associated to geological and geomorphological conditions; evaluating host rock conditions for underground constructions; preventing or mitigating geological and seismic hazards. Furthermore, this book illustrates recent advancements in sustainable land use planning, which includes conservation, protection, reclamation and landscape impact of open pit mining and alternative power generation. The Engineering Geology for Society and Territory volumes of the IAEG XII Congress held in Torino from September 15-19, 2014, analyze the dynamic role of engineering geology in our changing world and build on the four main themes of the congress: environment, processes, issues and approaches. The congress topics and subject areas of the 8 IAEG XII Congress volumes are: 1. Climate Change and Engineering Geology 2. Landslide Processes River Basins 3. Reservoir Sedimentation and Water Resources 4. Marine and Coastal Processes Urban Geology 5. Sustainable Planning and Landscape Exploitation 6. Applied Geology for Major Engineering Projects 7. Education, Professional Ethics and Public Recognition of Engineering Geology 8. Preservation of Cultural Heritage

Applied Geology is a multidisciplinary subject that interacts with other disciplines, such as mineralogy, petrology, structural geology, hydrogeology, seismic engineering, rock engineering, soil mechanics, geophysics, remote sensing (RS-GIS-GPS), environmental geology, etc. This book, entitled Applied Geology, is the only one of its kind in the Indian market that caters to the needs of all these subjects. This book covers all aspects of Applied Geology and is intended to serve BTech students. A plethora of examples and case studies relevant to the Indian context have been included for better understanding of the geological challenges faced by engineers.

Aimed at B.Sc. students of geology, this introductory text develops a basic understanding of the Earth as a complex, evolving system of geological processes. This book will also be of immense use to those postgraduate students of geology who opt for this stream after graduating in disciplines other than geology. Geology as a science has recently gained increasing importance because of the current developments in oil and mineral exploration and also because of recent occurrences of earthquakes and tsunamis. This book covers the entire spectrum of the geologic concepts and relates them to the main processes of geomorphology, earthquakes and volcanoes. Important types of the three categories of rocks—igneous, sedimentary and metamorphic—that

form the crust of the Earth are described with their characteristic mineralogy. Major structures that are born of tectonic activities are discussed. Palaeontological descriptions cover not only the plant and animal groups but also other evidences of life in the geological record and evolution. An important feature of the text is that modern stratigraphic methods of classification are outlined clearly, and the latest geologic time scale with numerical ages as approved in 2004 by the International Commission on Stratigrahy of the International Union of Geological Sciences is incorporated.

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.

The Engineering Group of the Geological Society Working Party brought together experts in glacial and periglacial geomorphology, Quaternary history, engineering geology and geotechnical engineering to establish best practice when working in former glaciated and periglaciated environments. The Working Party addressed outdated terminology and reviewed the latest academic research to provide an up-to-date understanding of glaciated and periglaciated terrains. This transformative, state-of-

the-art volume is the outcome of five years of deliberation and synthesis by the Working Party. This is an essential reference text for practitioners, students and academics working in these challenging ground conditions. The narrative style, and a comprehensive glossary and photo-catalogue of active and relict sediments, structures and landforms make this material relevant and accessible to a wide readership.

What is geology? It is the study of the Earth's physical structure and component, as well as the processes that change it. In this ebook, you're going to learn about the types of rocks and minerals that make Earth unique, its structure and the tectonic plates. Build your knowledge on geology to gain a better understanding of this world. Grab a copy today.

Hydrogeology: Principles and Practice provides acomprehensive introduction to the study of hydrogeology to enablethe reader to appreciate the significance of groundwater in meetingcurrent and future water resource challenges. This new edition hasbeen thoroughly updated to reflect advances in the field since2004. The book presents a systematic approach to understandinggroundwater. Earlier chapters explain the fundamental physical andchemical principles of hydrogeology, and later chapters featuregroundwater investigation techniques in the context of catchmentprocesses, as

well as chapters on groundwater quality andcontaminant hydrogeology. Unique features of the book are chapterson the applications of environmental isotopes and noble gases inthe interpretation of aquifer evolution, and on regionalcharacteristics such as topography, compaction and variable fluiddensity in the explanation of geological processes affecting past,present and future groundwater flow regimes. The last chapterdiscusses groundwater resources and environmental management, andexamines the role of groundwater in integrated river basinmanagement, including an assessment of possible adaptationresponses to the impacts of climate change. Throughout the text, boxes and a set of colour plates drawn fromthe authors' teaching and research experience are used toexplain special topics and to illustrate international case studiesranging from transboundary aquifers and submarine groundwaterdischarge to the over-pressuring of groundwater in sedimentarybasins. The appendices provide conversion tables and usefulreference material, and include review questions and exercises,with answers, to help develop the reader's knowledge andproblem-solving skills in hydrogeology. This accessible textbook is essential reading for undergraduate andgraduate students primarily in earth sciences, environmentalsciences and physical geography with

an interest in hydrogeology orgroundwater science. The book will also find use amongpractitioners in hydrogeology, soil science, civil engineering andplanning who are involved in environmental and resource protectionissues requiring an understanding of groundwater. Additional resources can be found at: ahref="http://www.wiley.com/go/hiscock/hydrogeology"www.wiley.com/go/hiscock/hydrogeology/a

This book describes the second phase of the Qinghai–Tibetan railway construction project and is the first technological book discussing the geological routing of the Qinghai–Tibetan railway project on the “roof of the world.” Based on practical experience of railway construction work, it provides a substantial number of examples with detailed descriptions and conclusions. The complex geological environment of the Qinghai–Tibetan railway as well as the selection and optimization of the route are illustrated vividly and clearly with quotes, figures, photos, and tables. Connecting Golmud and Lhasa, it has a total length of 1142 km and at the Tanggula Pass has an altitude of 5072m—higher than any other in the world. A 960 km section is on a plateau at altitudes above 4000 m, and 550 km are in the permafrost region, making it the world’s longest and highest railway in the permafrost plateau region. The book is a model for the integration of theory and practice, making it a valuable reference source for civil engineering

professionals working in geological routing in permafrost plateau regions, active fault zones, meizoseismal areas, nature reserves, and regions with geohazards such as steep slopes, sand and snow drifts and geothermal hazards.

The Geology of the Canary Islands provides a concise overview of the geology and volcanology of the Canary Islands, along with 27 carefully planned day excursions comprising trips on all of the islands. Each stop includes a description on how to approach a site and where to park with GPS locations provided. The book covers all the spectacular features of the islands, including active ocean island volcanoes whose origins are linked to a hot spot or plume causing anomalously hot mantle material to intrude the African plate, submarine volcanic sequences uplifted inside the islands, sub- aerial shield volcanoes, and the remains of giant lateral collapses. Through its clearly written and richly color-illustrated introduction and field guide, this book is essential reading for geologists who visit the Canary Islands, one of the largest and most fascinating active volcanic systems in Europe. Includes a forward by Prof. C. J. Stillman (Trinity College Dublin), a leading expert on the volcanology and geology of the Canary Islands Features 500 full color images, coupled with in-depth introductory text and a chapter on each island, followed by 27 guided excursions that include all of the seven islands of the

archipelago Familiarizes the reader with the variety of volcanic landforms and eruptive products in the Canary Islands and provides practical support in recognition, recording, and interpretation Develops understanding of growth, evolution, and destruction of ocean island volcanoes, promoting temporal and spatial thinking within a given geological framework

The Mekong is the most controversial river in Southeast Asia, and increasingly the focus of international attention. It flows through 6 counties, China, Myanmar, Laos, Thailand, Cambodia and Viet Nam. The 4 downstream countries have formed the Mekong River Commission to promote sustainable development of the river and many of their people depend on it for their subsistence ? it has possible the largest freshwater fishery in the world, and the Mekong waters support rice agriculture in the delta in Viet Nam (which produces about 40% of that country's food) as well as in Cambodia, Laos and Thailand. China is now building the first large mainstream dam on the river, and has proposals for several more. These dams are likely to affect the downstream countries. Several of the downstream countries also have plans for large scale hydropower and irrigation development which could also impact the river. This book will provide a solid overview of the biophysical environment of the Mekong together with a discussion of the possible impacts, biophysical, economic and social, of some possible development scenarios. It is intended to provide a technical basis which can inform the growing political and conservation debate about the future of the Mekong River, and those who depend on it. It is aimed at river ecologists, geographers, environmentalists and development specialists both in the basin and (especially) outside for whom access to this material is most difficult. This

book will be the first comprehensive treatment of the Mekong system. The first comprehensive overview of all aspects of the Mekong River system Deals with a regionally critical ecosystem and one under threat The Mekong supports the world's largest freshwater fishery and provides water underpinning a major regional rice paddy system Presents the authoritative findings of the Mekong River Commission's research for a wider audience for the first time outside of limited distribution reports

Rocks firmly anchored to the ground and rocks floating through space fascinate us. Jewelry, houses, and roads are just some of the ways we use what has been made from geologic processes to advance civilization. Whether scrambling over a rocky beach, or gazing at spectacular meteor showers, we can't get enough of geology! The Geology Bookwill teach you: What really carved the Grand Canyon. How thick the Earth's crust is. The varied features of the Earth's surface - from plains to peaks. How sedimentary deposition occurs through water, wind, and ice. Effects of erosion. Ways in which sediments become sedimentary rock. Fossilization and the age of the dinosaurs. The powerful effects of volcanic activity. Continental drift theory. Radioisotope and carbon dating. Geologic processes of the past. Our planet is a most suitable home. Its practical benefits are also enhanced by the sheer beauty of rolling hills, solitary plains, churning seas and rivers, and majestic mountains - all set in place by processes that are relevant to today's entire population of this spinning rock we call home.

Geology – Basics for Engineers presents the physical and chemical characteristics of the Earth, the nature and the properties of rocks and unconsolidated deposits/sediments, the action of water, how the earth is transformed by various phenomena at different scales of time and space. The book shows the engineer how to take geological conditions into

account in his projects, and how to exploit a wide range of natural resources in an intelligent way, reduce geological hazards, and manage subsurface pollution. Through a problem-based-learning approach, this instructional text imparts knowledge and practical experience to engineering students (undergraduate and graduate level), as well as to experts in the fields of civil engineering, environmental engineering, earth sciences, architecture, land and urban planning. The DVD that supplements the book contains solutions to the problems and animations that show additional facets of the living Earth. *The original French edition of the book (2007) won the prestigious Roberval Prize, an international contest organized by the University of Technology of Compiegne in collaboration with the General Council of Oise, France. Geology, Basics for Engineers, was selected out of a total of 110 candidates.The jury praised the book as a “very well conceived teaching textbook” and underscored its highly didactic nature, as well as the excellent quality of its illustrations.

This book summarizes the geomorphology, geology, geochronology, geophysics and mineral resources of the Congo Basin, one of the world’s most enigmatic and poorly understood major intra-continental sedimentary basins, and its flanking areas of Central Africa. It provides an up to date analysis of the large region’s origin and evolution. The book’s nineteen chapters take the reader through the entire basement history, as well as the Basin’s ca. 700 million years of cover sequences. Starting from its Archean cratons and Proterozoic mobile belts, and proceeding through the Phanerozoic sequences, including the most recent Cenozoic successions, the book also explores the present drainage systems and the subtle but complex topography of the Congo Basin. It also presents and evaluates new basin models and related dynamic processes, as well as revised correlation

schemes with its Gondwana counterparts in South America, all of which provide key insights into its rich diamond deposits and other mineral wealth, which are documented in the final chapters. A specific feature of this book is its synthesis, performed by teams of active experts, of a vast amount of geoscientific data previously only recorded in research reports, company reports, survey bulletins, and scattered journal articles and books. The sheer size of the Congo Basin (ca.1.8 million km2, or just under half the area of the EU) and Central Africa (some 7 million km2, or more than 70% of the area of the USA) will make this a sought-after source of information and inspiration on this unique region.

"Physical Geology is a comprehensive introductory text on the physical aspects of geology, including rocks and minerals, plate tectonics, earthquakes, volcanoes, glaciation, groundwater, streams, coasts, mass wasting, climate change, planetary geology and much more. It has a strong emphasis on examples from western Canada, especially British Columbia, and also includes a chapter devoted to the geological history of western Canada. The book is a collaboration of faculty from Earth Science departments at Universities and Colleges across British Columbia and elsewhere"--BCcampus website.

Divided into four parts, this work presents integrated studies and regional and case studies, and covers environmental constraints and effects, and the behaviour of earth masses.

This volume highlights the career of Dr. Gaku Kimura, professor emeritus of geosciences at the University of Tokyo, by showing the spectrum of research required to understand these dynamic environments and the range of research he has inspired. The first three chapters provide context for the growth of accretionary prisms by examining the thermal structure of the ocean crust, and the sedimentary facies and potential fluid pathways in the Shikoku Basin. Next, two

chapters look at the regional-scale structure of the plate boundary and the rheology and hysteresis of the hanging wall of the subduction zone in SW Japan. The following five chapters discuss the progressive deformation and thermal maturation of sediments along accretionary margins from Japan to New Zealand to western North America. The final two chapters look at the deformation processes near the subducting plate interface with the last chapter proposing a link between outcrop-scale observations and seismic slip. This Third Edition of Elements of Petroleum Geology is completely updated and revised to reflect the vast changes in the field since publication of the Second Edition. This book is a usefulprimer for geophysicists, geologists, and petroleum engineers in the oil industry who wish to expand their knowledge beyond their specialized area. It is also an excellent introductory text for a university course in petroleum geoscience. Elements of Petroleum Geology begins with an account of the physical and chemical properties of petroleum, reviewing methods of petroleum exploration and production. These methods include drilling, geophysical exploration techniques, wireline logging, and subsurface geological mapping. After describing the temperatures and pressures of the subsurface environment and the hydrodynamics of connate fluids, Selley examines the generation and migration of petroleum, reservoir rocks and trapping mechanisms, and the habit of petroleum in sedimentary basins. The book contains an account of the composition and formation of tar sands and oil shales, and concludes with a brief review of prospect risk analysis, reserve estimation, and other economic topics. Updates the Second Edition completely Reviews the concepts and methodology of petroleum exploration and production Written by a preeminent petroleum geologist and sedimentologist with decades of petroleum exploration in remote corners of the world Contains

information pertinent to geophysicists, geologists, and petroleum reservoir engineers Updated statistics throughout Additional figures to illustrate key points and new developments New information on drilling activity and production methods including crude oil, directional drilling, thermal techniques, and gas plays Added coverage of 3D seismic interpretation New section on pressure compartments New section on hydrocarbon adsorption and absorption in source rocks Coverage of The Orinoco Heavy Oil Belt of Venezuela Updated chapter on unconventional petroleum

To celebrate its fiftieth anniversary, the Carolina Geological Society invited forty-three authors to contribute to the creation of The Geology of the Carolinas. The only comprehensive, modern treatment of the subject, the volume has been prepared for a diverse readership ranging from undergraduate students to specialists in the fields of geology and related earth sciences. Following the editors' general introduction are chapters on Precambrian and Paleozoic metamorphic and igneous rocks of the Appalachian Blue Ridge and Piedmont; rocks of early Mesozoic rift basins, formed just before the opening of the Atlantic Ocean; Cretaceous and Tertiary sedimentary deposits of the Atlantic Coastal Plain; Quaternary geology and geomorphology; Cenozoic tectonism, including evidence for the recurrence of large earthquakes near Charleston; and an overview of mineral resources in the Carolinas. The book includes an index of field guides produced by the society and a thorough bibliography. By introducing exciting new concepts and focusing on challenging problems on the frontiers of research, this authoritative book will stimulate research in the years to come. The Editors: J. Wright Horton, Jr., is a research geologist for the United States Geological Survey in Reston, Virginia. Victor A. Zullo is a professor of geology at the University of North Carolina at Wilmington.

As scientific exploration of the solar system intensifies, recent planetary missions by NASA, the European Space Agency and other national bodies have reaffirmed that geological processes familiar from our studies of the Earth operate on many solid planets and satellites. Common threads link the internal structure, thermal evolution and surface character of both rocky and icy worlds, and volcanoes, impact craters, ice caps, dunes, rift valleys, rivers and oceans emerge as features of extra-terrestrial worlds as diverse as Mercury and Titan. The new data also reveal that many supposedly inert planetary bodies currently experience eruptions, landslides and dust storms. Moreover our understanding of the Solar System has greatly benefited from the analysis of meteorites from Mars as well as rock samples collected on the Moon.Combining extensive use of imagery, the results of laboratory experiments and theoretical modelling, this comprehensively updated second edition of Planetary Geology provides the student reader and the enthusiastic amateur with up-to-date coverage of these recent advances and confirms that, to quote from the first edition, planetary geology now embraces conventional geology and vice versa. Tremendous progress has been made in the geological understanding of the Korean seas with the advances in sophisticated exploration techniques, specifically in the areas of marine geophysics, sedimentology, geochemistry, and palaeoceanography, since Marine Geology of Korean Seas was first published in 1983. This book gives a comprehensive overview of the marine geology of these unique seas, including physiography, sedimentary facies and depositional processes of surface sediments, sequence stratigraphy, geologic structures, and basin evolution. In this edition, new results and interpretations have been incorporated that help to formulate geological models on the evolution of the Korean seas in relation to the adjacent continents.

An account of some aspects of marine geology and marine geophysics, comprehensible to those at an early stage in their study of geology and to scientists who are not specialists in these fields. There are many biologists, chemists, mathematicians or physicists who work in the laboratory or on board ship with geologists and geophysicists and this book will help them to understand the aims of their colleages' experiments. Wherever possible, without a loss of necessary precision, terminology is deliberately simplified.