Introduction To Process Geomorphology

Fundamentals of GeomorphologyMathematical Morphology in Geomorphology and GISciIntroduction to Coastal Processes and GeomorphologyThe Earth's Land SurfaceGeomorphologyTreatise on GeomorphologyThe Basics of GeomorphologyTools in Fluvial GeomorphologyRIVER PROCESSESPrinciples and Dynamics of the Critical ZoneIntroduction to Process GeomorphologyProcess in GeomorphologyIntroduction to Coastal Processes and GeomorphologyHydro-GeomorphologyQuaternary Geomorphology in IndiaTropical GeomorphologyGeomorphologyGeomorphologyEarth Surface Processes, Landforms and Sediment DepositsIntroduction to Planetary GeomorphologyEnvironmental GeomorphologyArid Zone GeomorphologyProcess and Form in GeomorphologyAeolian GeomorphologyGeomorphologyGeomorphology and SoilsFundamentals of Fluvial GeomorphologyGeomorphological MappingIntroduction to Fluvial ProcessesClimatic GeomorphologyIntroduction to Coastal Processes and GeomorphologyIntroduction to GeomorphologyGeomorphological FieldworkProcess GeomorphologyRemote Sensing of GeomorphologyCoastal GeomorphologyIntroducing GeomorphologyUrban GeomorphologyAnthropogenic GeomorphologyGeomorphological Processes

Fundamentals of Geomorphology

Remote Sensing of Geomorphology, Volume 23, discusses the new range of remote-sensing techniques (lidar, structure from motion photogrammetry, advanced satellite platforms) that has led to a dramatic increase in terrain information, and as such provided new opportunities for a better understanding of surface morphology and related Earth surface processes. As several papers have been published (including paper reviews and special issues) on this topic, this book summarizes the major advances in remote sensing techniques for the analysis of Earth surface morphology and processes, also highlighting future challenges. Useful for MSc and PhD students, this book is also ideal for any scientists that want to have a single volume guideline to help them develop new ideas. In addition, technicians and private and public sectors working on remote sensing will find the information useful to their initiatives. Provides a useful guideline for MSc and PhD students, scientists, technicians, and land planners on the use of remote sensing in geomorphology Includes applications on specific case studies that highlight issues and benefits of one technique compared to others Presents future trends in remote sensing and geomorphology

Mathematical Morphology in Geomorphology and GISci

Rocks and structures; Weathering; Underground water; Streams in general; Young streams; Mature

streams; Alpine glaciation; Continental glaciation; Waves; Wind; Organisms; Coastal plains; Plains and plateaus; Dome mountains; Block mountains; Folded mountains; Complex mountains; Volcanoes; Meteor craters.

Introduction to Coastal Processes and Geomorphology

Fluvial Geomorphology studies the biophysical processes acting in rivers, and the sediment patterns and landforms resulting from them. It is a discipline of synthesis, with roots in geology, geography, and river engineering, and with strong interactions with allied fields such as ecology, engineering and landscape architecture. This book comprehensively reviews tools used in fluvial geomorphology, at a level suitable to guide the selection of research methods for a given question. Presenting an integrated approach to the interdisciplinary nature of the subject, it provides guidance for researchers and professionals on the tools available to answer questions on river restoration and management. Thoroughly updated since the first edition in 2003 by experts in their subfields, the book presents state-of-the-art tools that have revolutionized fluvial geomorphology in recent decades, such as physical and numerical modelling, remote sensing and GIS, new field techniques, advances in dating, tracking and sourcing, statistical approaches as well as more traditional methods such as the systems framework, stratigraphic analysis, form and flow characterisation and historical analysis. This book: Covers five main types of

geomorphological questions and their associated tools: historical framework; spatial framework; chemical, physical and biological methods; analysis of processes and forms; and future understanding framework. Provides guidance on advantages and limitations of different tools for different applications, data sources, equipment and supplies needed, and case studies illustrating their application in an integrated perspective. It is an essential resource for researchers and professional geomorphologists, hydrologists, geologists, engineers, planners, and ecologists concerned with river management, conservation and restoration. It is a useful supplementary textbook for upper level undergraduate and graduate courses in Geography, Geology, Environmental Science, Civil and Environmental Engineering, and interdisciplinary courses in river management and restoration.

The Earth's Land Surface

Although similar geomorphic processes take place in other regions, in the tropics these processes operate at different rates and with varying intensities. Tropical geomorphology therefore provides many new discoveries regarding geomorphic processes. This textbook describes both the humid and arid tropics. It provides thoroughly up-to-date concepts and relevant case studies, and emphasises the importance of geomorphology in the management and sustainable development of the tropical environment, including climate change scenarios. The text is supported by a large number of illustrations, including satellite

images. Student exercises accompany each chapter. Tropical Geomorphology is an ideal textbook for any course on tropical geomorphology or the tropical environment, and is also invaluable as a reference text for researchers and environmental managers in the tropics.

Geomorphology

Geomorphological Fieldwork addresses a topic that always remains popular within the geosciences and environmental science. More specifically, the volume conveys a growing legacy of field-based learning for young geomorphologists that can be used as a student book for field-based university courses and postgraduate research requiring fieldwork or field schools. The editors have much experience of field-based learning within geomorphology and extend this to physical geography. The topics covered are relevant to basic geomorphology as well as applied approaches in environmental and cultural geomorphology. The book integrates a physical-human approach to geography, but focuses on physical geography and geomorphology from an integrated field-based geoscience perspective. Addresses fluvial and karst landscapes in depth Focuses on field-based learning as well as educational geomorphology Conveys experiential knowledge in international contexts

Treatise on Geomorphology

Geomorphology has now reached a certain level

where the methodology, scientific content and results being published in the field make it worthy of being considered as a major environmental research area. In preparing Environmental Geomorphology, the author has given priority to methodology and illustrative case-histories. Schemes and classifications that would be ill-suited for a naturalistic, empirical and non-systematic discipline like geomorphology have been avoided. The concepts outlined in the text are based on a subdivision of geomorphological resources and hazards (as well as their links with man) together with the consequent risk and impact problems. Each investigation, study or intervention concerning the environment, cannot ignore either the human context in which it occurs or man's history and prospects. It is necessary to have the right dialogue and relationship with the other disciplines making up this system so as to apply the most suitable methodologies and offer the most valid solutions. For some subjects covered in the book, specialists concerned with a particular section of environmental geomorphology were consulted. The text of each chapter is accompanied by several illustrative schemes, figures and photographs, derived from real research and professional experiences. The volume is addressed both to university students studying topics of geomorphology as part of their syllabus, and to researchers and consultants (geologists, geographers, engineers, naturalists, etc.) working in the field.

The Basics of Geomorphology

Geomorphology is the study of the earth's landforms

and the processes that made the landscape look the way it does today. What we see when we look at a scenic view is the result of the interplay of the forces that shape the earth's surface. These operate on many different timescales and involve geological as well as climatic forces. This book introduces the varying geomorphological forces and differing timescales from the global, which shapes continents and mountain ranges; through the regional, producing hills and river basins; to the local, forming beaches, glaciers, and slopes; and to those micro scale forces which weather rock faces and produce sediment. Finally, it considers the effect that humans have had on the world's topography. Introducing Geomorphology provides a structured and easily accessible introduction for those with a curiosity about the landscape and for those contemplating a course of formal study in physical geography, geology, or environmental studies. Technical terms are kept to a minimum and a glossary is provided. *** "Presented in full color with plenty of photographs and diagrams throughout, Introducing Geomorphology is recommended for community and college library collections looking to expand their Earth Science driven offerings." The Midwest Book Review, October 2012. *** This guidebook is a well-written, concise, handy reference for students and others who lack a background in geomorphology and are curious about landscape evolution. It is also an excellent refresher for landform interpretation, especially for professional soil scientists, geologists, and engineers involved with landscape problems. Highly recommended. Choice, January 2013, Vol. 50 No. 05 [Subject: Geomorphology, Geology,

Geography, Natural Science, Environmental Studies]

Tools in Fluvial Geomorphology

Principles and Dynamics of the Critical Zone is an invaluable resource for undergraduate and graduate courses and an essential tool for researchers developing cutting-edge proposals. It provides a process-based description of the Critical Zone, a place that The National Research Council (2001) defines as the "heterogeneous, near surface environment in which complex interactions involving rock, soil, water, air, and living organisms regulate the natural habitat and determine the availability of life-sustaining resources." This text provides a summary of Critical Zone research and outcomes from the NSF funded Critical Zone Observatories, providing a process-based description of the Critical Zone in a wide range of environments with a specific focus on the important linkages that exist amongst the processes in each zone. This book will be useful to all scientists and students conducting research on the Critical Zone within and outside the Critical Zone Observatory Network, as well as scientists and students in the geosciences – atmosphere, geomorphology, geology and pedology. The first text to address the principles and concepts of the Critical Zone A comprehensive approach to the processes responsible for the development and structure of the Critical Zone in a number of environments An essential tool for undergraduate and graduate students, and researchers developing cutting-edge proposals

RIVER PROCESSES

"I can think of no better guides than Professors Ken Gregory and John Lewin to lead the reader through the conceptual basis of this exciting science." - Victor R. Baker, University of Arizona "A very readable and informative introduction to the discipline for senior undergraduates, postgraduates and researchers." - Angela Gurnell, Queen Mary University of London "Time will tell, but this book may well mark a turning point in the way students and scientists alike perceive Earth surface processes and landforms." - Jonathan Phillips, University of Kentucky This student focused book provides a detailed description and analysis of the key concepts, ideas, and hypotheses that inform geomorphology. Kenneth Gregory and John Lewin explain the basics of landform science in 20 concepts, each the subject of a substantive, cross-referenced entry. They use the idea of the 'geomorphic system' to organise entries in four sections, with extensive web resources provided for each: System Contexts: The Systems Approach / Uniformitarianism / Landform / Form, Process and Materials / Equilibrium / Complexity and Non Linear Dynamical Systems System Functioning: Cycles and cascades / Force-Resistance / Geomorphic work / Process Form Models System Adjustments: Timescales / Forcings / Change Trajectories / Inheritance and Sensitivity / Anthropocene Drivers for the Future: Geomorphic Hazards / Geomorphic Engineering / Design and Prediction Aligned with the teaching literature, this innovative text provides a fully-functioning learning environment for study, revision, and even self-

directed research for both undergraduate and postgraduate students of geomorphology.

Principles and Dynamics of the Critical Zone

Soils and sediments influence current processes, preserve evidence of past processes, indicate evolutionary phases in landscapes and provide a basis for relative and absolute chronologies. They provide an important key to the integration of short-term process studies and investigation of longer-term landform evolution. This book, first published in 1985, has been arranged to provide wide temporal and spatial coverage, with studies ranging from historic to geologic time scales and micro- to macro-spatial scales. The interdisciplinary nature of the subject is reflected in contributions from soil scientists, engineering geologists, hydrologists and geomorphologists.

Introduction to Process Geomorphology

Featuring hundreds of images, this textbook explores the geological evolution of planets and moons for undergraduate students in planetary science.

Process in Geomorphology

Introduction to Coastal Processes and Geomorphology

This textbook provides a modern, quantitative and process-oriented approach to equip students with the tools to understand geomorphology. Insight into the interpretation of landscapes is developed from basic principles and simple models, and by stepping through the equations that capture the essence of the mechanics and chemistry of landscapes. Boxed worked examples and real-world applications bring the subject to life for students, allowing them to apply the theory to their own experience. The book covers cutting edge topics, including the revolutionary cosmogenic nuclide dating methods and modeling, highlights links to other Earth sciences through up-to-date summaries of current research, and illustrates the importance of geomorphology in understanding environmental changes. Setting up problems as a conservation of mass, ice, soil, or heat, this book arms students with tools to fully explore processes, understand landscapes, and to participate in this rapidly evolving field.

Hydro-Geomorphology

Grounded in current research, this second edition has been thoroughly updated, featuring new topics, global examples and online material. Written for students studying coastal geomorphology, this is the complete guide to the processes at work on our coastlines and the features we see in coastal systems across the world.

Quaternary Geomorphology in India

Geomorphological Mapping: a professional handbook of techniques and applications is a new book targeted at academics and practitioners who use, or wish to utilise, geomorphological mapping within their work. Synthesising for the first time an historical perspective to geomorphological mapping, field based and digital tools and techniques for mapping and an extensive array of case studies from academics and professionals active in the area. Those active in geomorphology, engineering geology, reinsurance, Environmental Impact Assessors, and allied areas, will find the text of immense value. Growth of interest in geomorphological mapping and currently no texts comprehensively cover this topic Extensive case studies that will appeal to professionals, academics and students (with extensive use of diagrams, potentially colour plates) Brings together material on digital mapping (GIS and remote sensing), cartography and data sources with a focus on modern technologies (including GIS, remote sensing and digital terrain analysis) Provides readers with summaries of current advances in methodological/technical aspects Accompanied by electronic resources for digital mapping

Tropical Geomorphology

The new edition of Arid Zone Geomorphology aims to encapsulate the advances that have been made in recent years in the investigation and explanation of landforms and geomorphological processes in drylands. Building on the success of the previous two editions, the Third Edition has been completely

revised and updated to reflect the latest developments in the field. Whilst this latest edition will remain a comprehensive reference to the subject, the book has been restructured to include regional case studies throughout to enhance student understanding and is clearly defined into five distinct sections; Firstly, the book introduces the reader to Large Scale Controls and Variability in Drylands and then moves on to consider Surface Processes and Characteristics; The Work of Water, The Work of the Wind. The book concludes with a section on Living with Dryland Geomorphology that includes a chapter on geomorphological hazards and the human impact on these environments. Once again, recognised world experts in the field have been invited to contribute chapters in order to present a comprehensive and up-to-date overview of current knowledge about the processes shaping the landscape of deserts and arid regions. In order to broaden the appeal of the Third Edition, the book has been reduced in extent by 100 pages and the Regional chapters have been omitted in favour of the inclusion of key regional case studies throughout the book. The Editor is also considering the inclusion of a supplementary website that could include further images, problems and case studies.

Geomorphology

During the past few decades climatic geomorphology has been substantially enlarged in knowledge, thanks to numerous detailed investigations, the application of a large number of techniques, and the acquisition of abundant absolute dates. The challenge of

predicting the effects of the prophesied future global warming on morphogenetic processes and landforms has encouraged geomorphologists to study the Late Pleistocene and Holocene climatic changes from the geomorphological and geological record. The advances achieved in the field of climatic geomorphology during the past years are reflected by the publication of several specific monographs about the different morphoclimatic zones. The aim of this book is to provide an up-to-date general view of this branch of geomorphology. It includes a chapter on applied geomorphology for each morphoclimatic zone providing an approximation of the main environmental problems. Geoscientists, geomorphologists

Geomorphology

Frank Ahnert offers a presentation and explanation of the science of landforms, linking empirical results with theoretical models of landform development.

Earth Surface Processes, Landforms and Sediment Deposits

Mathematical Morphology in Geomorphology and GISci presents a multitude of mathematical morphological approaches for processing and analyzing digital images in quantitative geomorphology and geographic information science (GISci). Covering many interdisciplinary applications, the book explains how to use mathematical morphology not only to perform

Introduction to Planetary Geomorphology

The prime purpose of this book is to provide undergraduate students with an introductory understanding of process mechanics and how process leads to the genesis of landforms. In addition to historical concerns, today's geomorphologist must relate to problems that face hydrologists, engineers, geologists, pedologists, foresters, and many other types of earth scientists. The bond that unites geomorphology with so many apparently diverse disciplines is the common need to understand the processes operating within the Earth's surficial systems. Thus, although the historical aspect of landscapes remains important, it is absolutely essential for earth scientists to have a basic understanding of surface mechanics.

Environmental Geomorphology

field trips." --Book Jacket.

Arid Zone Geomorphology

Originally published in this form in 1971, the content of this book was originally part of a larger composite volume ‘Water, Earth and Man’ (1969) which provided a synthesis of hydrology, geomorphology and socio-economic geography. This volume brings together the systematic theme of geomorphology while maintaining a link with the original book which emphasised the benefit of the study of water being

considered in the widest sense within the physical and social environments.

Process and Form in Geomorphology

Coastal environments are arguably the most important and intensely used of all areas settled by humans. The coastline changes, not only over the centuries or decades but in a matter of hours and minutes. This rapid development applies both to the form of the coastline and to coastal processes. This new book is an introduction to the environments and and processes that occur along the world's coastline. The coastlines of the world provide 'natural laboratories' for investigating the physical, chemical and biological processes that produce the rich diversity of coastal landforms. Introduction to Coastal Processes and Geomorphology begins by addressing generic concepts, global issues and processes that are common to most coastal environments including the morphodynamic paradigm, Quaternary sea-level fluctuations, tides, waves and sediment transport processes. Later chapters address the morphodynamics of the five main types of coastal environments, namely fluvial-, tide-, and wave-dominated environments, rocky coasts, and coral reefs and islands. The final chapter considers the issue of coastal management, and in particular the management of coastal erosion. This comprehensive and in-depth book is an essential reference handbook for students looking to extend their analytical skills and interest in coastal morphodynamics. Fully illustrated throughout, each chapter contains boxed

sections designed to aid further study by providing either a further analysis or treatment of a particular issue, an interesting application of a principle just discussed in the body of the text, or a virtual field trip.

Aeolian Geomorphology

Rivers are significant geomorphological agents, they show an amazing diversity of form and behaviour and transfer water and sediment from the land surface to the oceans. This book examines how river systems respond to environmental change and why this understanding is needed for successful river management. Highly dynamic in nature, river channels adjust and evolve over timescales that range from hours to tens of thousands of years or more, and are found in a wide range of environments. This book provides a comprehensive overview of recent developments in river channel management, clearly illustrating why an understanding of fluvial geomorphology is vital in channel preservation, environmentally sensitive design and the restoration of degraded river channels. It covers: flow and sediment regimes: flow generation; flow regimes; sediment sources, transfer and yield channel processes: flow characteristics; processes of erosion and sediment transport; interactions between flow and the channel boundary; deposition channel form and behaviour: controls on channel form; channel adjustments; floodplain development; form and behaviour of alluvial and bedrock channels response to change: how channels have responded to past environmental change; impacts of human activity;

reconstructing past changes river management: the fluvial hydrosystem; environmental degradation; environmentally sensitive engineering techniques; river restoration; the role of the fluvial geomorphologist. Fundamentals of Fluvial Geomorphology is an indispensable text for undergraduate students. It provides straightforward explanations for important concepts and mathematical formulae, backed up with conceptual diagrams and appropriate examples from around the world to show what they actually mean and why they are important. A colour plate section also shows spectacular examples of fluvial diversity.

Geomorphology

Originally published in 1984. This major text covers the whole discipline of geomorphology, presenting a clear and comprehensive overview of the field, drawing on the full range of modern research. Landforms and their formative processes are treated on a broad spectrum of spatial scales, and examples are drawn from the major geological, climatic and biotic environments. The book is divided conveniently into some 170 clearly defined sections to allow readers to make the most efficient use of those parts of the text relevant to their particular needs. After introducing the basic concepts such as systems analysis, morphologic and cascading systems, the historical-evolutionary approach and process-response geomorphology, the book moves on to the geological background to geomorphology and then the extensive third part deals with the geomorphic

processes and responding landforms. Part four examines climatic geomorphology and the appendix touches on applied geomorphology, especially fluvial processes.

Geomorphology and Soils

This extensively revised, restructured, and updated edition continues to present an engaging and comprehensive introduction to the subject, exploring the world's landforms from a broad systems perspective. It covers the basics of Earth surface forms and processes, while reflecting on the latest developments in the field. Fundamentals of Geomorphology begins with a consideration of the nature of geomorphology, process and form, history, and geomorphic systems, and moves on to discuss: structure: structural landforms associated with plate tectonics and those associated with volcanoes, impact craters, and folds, faults, and joints process and form: landforms resulting from, or influenced by, the exogenic agencies of weathering, running water, flowing ice and meltwater, ground ice and frost, the wind, and the sea; landforms developed on limestone; and landscape evolution, a discussion of ancient landforms, including palaeosurfaces, stagnant landscape features, and evolutionary aspects of landscape change. This third edition has been fully updated to include a clearer initial explanation of the nature of geomorphology, of land surface process and form, and of land-surface change over different timescales. The text has been restructured to incorporate information on geomorphic materials and

processes at more suitable points in the book. Finally, historical geomorphology has been integrated throughout the text to reflect the importance of history in all aspects of geomorphology. Fundamentals of Geomorphology provides a stimulating and innovative perspective on the key topics and debates within the field of geomorphology. Written in an accessible and lively manner, it includes guides to further reading, chapter summaries, and an extensive glossary of key terms. The book is also illustrated throughout with over 200 informative diagrams and attractive photographs, all in colour.

Fundamentals of Fluvial Geomorphology

Introduction to Process Geomorphology provides an integrative approach to the process dynamics and the origin of landforms by the contemporary processes involved in their evolution. The author highlights the physical and chemical laws governing the activity of the earth-surface processes in specific environmental stress conditions, puts forward com

Geomorphological Mapping

"Given the sheer scale of the topic under consideration here, Professor Gregory does well to condense it into bite-size pieces for the reader. I recommend this text to all undergraduate students of physical geography and earth sciences, particularly to those in their first and second years This book is a comprehensive and (crucially) inexpensive text that will provide students with a useful source on

geomorphology." - Lynda York, The Geographical Journal "I would highly recommend this to anyone doing geology or geography at university as a 'go to' book for geomorphology and landform." - Sara Falcone, Teaching Earth Science "An excellent source of information for anyone who needs a well-informed, easy to use reference volume to introduce them to the fascinating complexities of the earth's land surface, past, present and future." - Angela Gurnell, Queen Mary, University of London This introductory text details the land surface of the earth in a readable style covering the major issues, key themes and sensitivities of the environments/landscape. Emphasising the major ideas and their development, each chapter includes case studies and details of influential scientists (not necessarily geomorphologists) who have contributed to the progress of understanding. Providing a very clear explanation of the understanding achieved and of the debates that have arisen, the book is comprised of 12 chapters in four sections: Visualising the land surface explains and explores the composition of the land surface and outlines how it has been studied. Dynamics of the land surface considers the dynamics affecting the earth's land surface including its influences, processes and the changes that have occurred. Environments of the land surface looks to understand the land surface in major world regions highlighting differences between the areas. Management of the land surface is an examination of the current and future prospects of the management of the earth's land surface. With pedagogical features including further reading, questions for discussion and a glossary, this original, lively text is authored by one

of the leading experts in the field and will be core reading for first and second year undergraduates on all physical geography courses.

Introduction to Fluvial Processes

Urban Geomorphology: Landforms and Processes in Cities addresses the human impacts on landscapes through occupation (urbanization) and development as a contribution to anthropogenic geomorphology or "anthropogeomorphology." This includes a focus on land clearance, conservation issues, pollution, decay and erosion, urban climate, and anthropogenic climate change. These topics, as well as others, are considered to shed more light on the human transformation of natural landscapes and the environmental impacts and geomorphological hazards that environmental change can encompass. Its multidisciplinary approach is appropriate for audiences from a range of disciplines and professions, from geologists, conservationists, and land-use planners to architects and developers. Urban Geomorphology not only transcends disciplines, but also covers varied spatial-temporal frameworks and presents a diverse set of approaches and solutions to human impacts and geomorphological hazards within urban landscapes. Features a cross-disciplinary perspective, highlighting the importance of the geosciences to environmental science, engineering, and public policy Focuses on the built environment as the location of concentrated human impacts and change Provides an international scope, including case studies from urban areas around the world

Climatic Geomorphology

A unique, advanced textbook combining sedimentology and geomorphology in a comprehensive and integrated way.

Introduction to Coastal Processes and Geomorphology

Process and Form in Geomorphology marks a turning point in geomorphological research. Stoddart has brought together a team of the leading international experts to offer important new studies into the processes, theory and history of landforms, and to present a framework for taking research forward into the new millenium. Illustrated throughout, Process and Form in Geomorphology takes up the challenges of the research agenda set by Richard Chorley and offers fresh insights into his unique contribution.

Introduction to Geomorphology

Anthropogenic geomorphology studies society's impact on the geographical environment, and especially on the Earth's surface. This volume provides guidance to students discussing the basic topics of anthropogenic geomorphology. The chapters cover both its system, and its connections with other sciences, as well as the way the subject can contribute to tackling today's practical problems. The book represents all fields of geomorphology, giving an introduction to the diversity of the discipline through examples taken from a range of contexts and periods,

and focusing on examples from Europe. It is no accident that anthropogenic geomorphology has been gaining ground within geomorphology itself. Its results advance not only the theoretical development of the science but can be applied directly to social and economic issues. Worldwide, anthropogenic geomorphology is an integral and expanding part of earth sciences curricula in higher education, making this a timely and relevant text.

Geomorphological Fieldwork

This book originated from a proposal by one author (J. R. H.) who was subsequently joined by a second (E. D.) and then by a third (K. J. G.). It has taken longer to produce than we expected because of the complications imposed by the distances which the authors have succeeded in putting between themselves during the past three years. The basic objective was to produce a short book which would introduce geomorphological processes to students in the first or second year of their higher education courses. We believed that there was a need for such a book reviewing a range of geomorphological processes which would offer a prelude to the symphonies which are available in books devoted to specific processes and their effects, many of which are sign posted in the lists of further reading at the end of each chapter. We are aware that the range of suitable preludes is wide, but we have endeavoured to compose one which expresses at least some of the recent achieve-ments in the study of geomorphological processes. Emphasis is placed on

the nature of processes and upon their controls but the effects of processes in creating landforms are not reviewed in any detail. In addition to the selected references at the end of each chapter, we have collected a bibliography of works cited at the end of the book but this is not intended to be as exhaustive as the references collated in more advanced works.

Process Geomorphology

This book provides a detailed coverage of the landforms of Planet Earth and the processes that shaped them. The study of these morphologies, some of which formed during past geological periods under environmental conditions very different from those of today, makes it possible to reconstruct the evolution of relief and to infer environmental changes that have involved geological media, the climate, or human activity. A major advance of Geomorphology in recent decades is the development of techniques that make it possible to quantify morphogenetic processes and rates at which forms change under different environmental conditions. The development of Geochronology, or absolute dating methods, is helping us correct the limitations of relative dating that have prevailed in Geomorphology for many years. The ability to assign numerical ages to both landforms and deposits opens up multiple possibilities for reconstructing the evolution of relief, making correlations, calculating rates, and estimating recurrence periods. A theme of major concern facing people today is the possible warming of the planet due to the release of greenhouse gases into the

environment. Investigations conducted by the scientific community show that this temperature increase is at least partially anthropogenic. Given this more-than-probable cause and effect relationship, the most sensible and prudent path is to design and apply mitigation measures to alleviate this heating that can negatively affect both the natural environment and human society. The information that Geomorphology can provide on the recent past (Historical Geomorphology) may be very useful in making predictions on the activity of these potentially dangerous processes in the future and on the possible effects of environmental changes. The aim of this book is to provide a general vision of the multiple aspects of Geomorphology and to provide a methodological foundation to approach the study of various branches of geomorphology. To this end, the book contains a basic bibliography that can be used for future research. In addition, applied aspects of Geomorphology are covered at the end of each chapter to provide knowledge of the activities of geomorphologists in the professional world.

Remote Sensing of Geomorphology

This edited book presents a novel collection of field-based empirical studies on the Quaternary geomorphology of the Lower Ganga Basin. The book covers a wide range of topics discussing various geomorphological facets of the Lower Ganga and its subsidiary rivers focussing on laterites, palaeoenvironment and palaeogeomorphology, palaeo-coastal landforms, neo-tectonism, tidal-fluvial

dynamics, extra-channel geomorphology and channel-pattern adjustment among others. Various methodologies were applied ranging from historical records and religious texts to state-of-the-art remote sensing and GIS techniques. The book appeals to all scientists and post-graduate students of geomorphology and related areas who want to acquire detailed knowledge of the geology and geomorphology of the Lower Ganga Basin or are in search of new methodologies for studying the feedback mechanisms between forms and processes.

Coastal Geomorphology

Introducing Geomorphology

Coastal Geomorphology, Second Edition is a comprehensive and systematic introduction to this subject and demonstrates the dynamic nature of coastal landforms, providing a background for analytical planning and management strategies in coastal areas that are subject to continuing changes. This introductory textbook has been completely revised and updated, and is accompanied by a website which provides additional illustrations, global examples, case-studies and more detailed and advanced information on topics referenced in the book, together with explanations of terminology, annotated references and research material.

Urban Geomorphology

A revised introduction to aeolian geomorphology written by noted experts in the field The new, revised and updated edition of Aeolian Geomorphology offers a concise and highly accessible introduction to the subject. The text covers the topics of deserts and coastlines, as well as periglacial and planetary landforms. The authors review the range of aeolian characteristics that include soil erosion and its consequences, continental scale dust storms, sand dunes and loess. Aeolian Geomorphology explores the importance of aeolian processes in the past, and the application of knowledge about aeolian geomorphology in environmental management. The new edition includes contributions from eighteen experts from four continents. All the chapters demonstrate huge advances in observation, measurement and mathematical modelling. For example, the chapter on sand seas shows the impact of greatly enhanced and accessible remote sensing and the chapter on active dunes clearly demonstrates the impact of improvements in field techniques. Other examples reveal the power of greatly improved laboratory techniques. This important text: Offers a comprehensive review of aeolian geomorphology Contains contributions from an international panel of eighteen experts in the field Includes the results of the most recent research on the topic Filled with illustrative examples that demonstrate the advances in laboratory approaches Written for students and professionals in the field, Aeolian Geomorphology provides a comprehensive introduction to the topic in twelve new chapters with contributions from noted experts in the field.

Anthropogenic Geomorphology

River Processes deals primarily with flow and sediment dynamics in alluvial channels. It emphasises water flows (basic principles and characterisation), fluvial sediment, processes of erosion and sediment transport, bedforms that result from flow-bed sediment interactions in sand and gravel, flow and sedimentary processes in curved, braided and confluent channels, as well as aquatic habits. River Processes provides a comprehensive synthesis of current knowledge about physical processes in alluvial channels, with an emphasis on the recent work on flow-bed-sediment transport interactions. It is intended primarily for undergraduate students interested in fluvial studies as part of physical geography, earth sciences, environmental sciences and ecology courses. The textbook is fully illustrated throughout with line drawings and photographs.

Geomorphological Processes

Knowledge has no limits and everyone has the opportunity to gain it and expand the view and horizon of understanding. Nothing in this world remains permanent, everything changes. Hence the field of morphology of the Earth (geomorphology) provides a basis for exploring, understanding and comprehending the forms and processes that occur in our surrounding. This book presents some of the ideas and understanding about geomorphology: 1) Learn about the effect of deforestation and then reforestation on river channel morphology. 2)

Understand the composite mathematical modelling for continuous simulations of hydro-geomorphological processes. 3) Know about the process-response models for estimation of cliff erosion and its quantitative predictions. 4) Grow your knowledge about various geomorphometric tools that are available in freely available GIS software.