

# Highway Engineering By Khanna And Justo

ABOUT THE BOOK: After the First World War the importance of highways was felt and realized. The concept of highway engineering has changed during the last two decades. The thumb rule concept has become a thing of the past. With the increasing importance of highways for the prosperity and integrity of the country and with the increasing cost of construction and maintenance of highways, the trend of construction, planning and designing has also changed. The Central Road Research Institute and P.W.D. research centers all over the country have contributed a lot in the design, planning road user safety, construction and economy etc. The present work is the outcome of author 's long association with the subject as a teacher and as a student. Efforts have been made to present the subject matter in a very lucid and comprehensive manner. The author does not claim any originality but sufficient pains have been taken in compiling the work by consulting important works and Road Research Journals. The subject matter is presented from the introduction so that the book may prove useful to diploma and degree students as well as practising engineers. The book presents acceptable theory and construction practices. Important topics such as bituminous roads, stabilized earth roads, traffic engineering, pavement design and highway planning and economics have been comprehensively dealt. Hill Roads including construction and layout of tunnels have been given special emphasis. Airport engineering, though it is not a part of highway engineering, has also been touched so as to introduce the subject matter. I take this opportunity to express my gratitude to Padamshri R.S. Gahlowt, Chairman and Managing Director (Retd). Hindustan Steel Co. Ltd. for his valuable guidance, help and blessings and my friend and colleague Shri G.S. Birdie, Consulting Engineer for the preparation of a large number of drawings and consultations. Any suggestion for the improvement of the book in the forthcoming editions will be

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thankfully acknowledged and welcomed. For errors or omissions and constructive criticism from the readers and users are welcome.

Allahabad T.D. AHUJA 2011 OUTSTANDING FEATURES:

-Various designs of the Highway Engineering are based on the latest IS Codes. -Several empirical methods of estimating. Evapotranspiration such as modified penman method, hargreaves methods, modified blaney criddle method, etc., are discussed. -Treatment of earthquake forces acting on gravity dams is thoroughly explained. -Detailed discussion regarding the provision of water stops at the contraction joints in gravity dams as per IS Codes is made. -Some aspects of financial analysis of a project are discussed with planning for water resources development. -Number of design problems have been solved in details. -Subject matter is supported by very good diagrams and illustrative examples. -A large number of multiple choice questions with answers are given.

RECOMMENDATIONS: A textbook for all Engineering Branches, Competitive Examination, ICS, and AMIE Examinations In S.I Units For Degree, Diploma and A.I.M.E. (India)

Students and Practicing Civil Engineers ABOUT THE AUTHOR:

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HOUSE Since 1960 Unit of Rajsons Publications Pvt Ltd Regd Office: 4262/3A Ground Floor Ansari Road Daryaganj New Delhi-110002

+91 011 43551185/43551085/43751128/23250212 Retail Office :

1705-A Nai Sarak Delhi-110006 011 23265506 Website:

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This 'Concise Handbook' has been prepared, keeping in view mainly the requirements of practising Civil Engineers, with all the essential of a useful 'Concise Handbook'. such as the latest design

formulae, graphs, diagrams and tables etc., to solve day-to-day work problems. These details have been adopted mostly from the national building code. The book will be equally helpful to civil Engineering students and teachers.

Design of Steel Structures is designed to meet the requirements of

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undergraduate students of civil and structural engineering. This book will also prove useful for postgraduate students and serve as an invaluable reference for practicing engineers unfamiliar with the limit state design of steel structures. The book provides an extensive coverage of the design of steel structures in accordance with the latest code of practice for general construction in steel (IS 800 : 2007). The book is based on the modern limit state approach to design and covers topics such as properties of steel, types of steel structures, important areas of structural steel technology, bolted connections, welded connections, design of trusses, design of plate girders, and design of beam columns. Each chapter features solved examples, review questions, and practice problems as well as ample illustrations to supplement the text.

Design and Practice

Mechanics of Materials

Transportation Engineering and Planning

Planning and Design

This book provides a complete text on highway and traffic engineering for developing countries. It is aimed principally at students and young engineers from the developed world who have responsibility for such work in the third world, but will also be valuable for local highway engineers.

Computer Aided Highway Engineering is aimed at developing professional knowledge in the field of highway engineering with adequate skills in planning, designing and implementation of the highway project with an exposure of hands on training of computer software in designing the worldwide road infrastructures. It discusses Digital Terrain Model (DTM) using satellite data including highway geometric, pavement and tunnel design, supported by relevant tutorials. Quantity estimation, cost estimation and production of various types of construction drawings are described in detail with theory and tutorials backed by real project data. Recognizes the role of information and

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computer technology in various aspects of highway design. Reviews different tasks for feasibility studies and DPR with software applications. Explores topographic survey, Digital Terrain Model (DTM) and highway geometrics and, pavement and drainage design. Discusses project estimations for various revisions of the engineering work. Includes HEADS Pro along with chapter wise tutorials containing design and field data, tutorial guides and various tutorial videos. This volume is aimed at Professionals in Civil Engineering, Highway Engineering, Transport Planning and Town Planning and Traffic Engineering.

Basic And Applied Soil Mechanics Is Intended For Use As An Up-To-Date Text For The Two-Course Sequence Of Soil Mechanics And Foundation Engineering Offered To Undergraduate Civil Engineering Students. It Provides A Modern Coverage Of The Engineering Properties Of Soils And Makes Extensive Reference To The Indian Standard Codes Of Practice While Discussing Practices In Foundation Engineering. Some Topics Of Special Interest, Like The Schmertmann Procedure For Extrapolation Of Field Compressibility, Determination Of Secondary Compression, Lambes Stress - Path Concept, Pressure Meter Testing And Foundation Practices On Expansive Soils Including Certain Widespread Myths, Find A Place In The Text. The Book Includes Over 160 Fully Solved Examples, Which Are Designed To Illustrate The Application Of The Principles Of Soil Mechanics In Practical Situations. Extensive Use Of Si Units, Side By Side With Other Mixed Units, Makes It Easy For The Students As Well As Professionals Who Are Less Conversant With The Si Units, Gain Familiarity With This System Of International Usage. Inclusion Of About 160 Short-Answer Questions And Over 400 Objective Questions In The Question Bank Makes The Book Useful For Engineering Students As Well As For Those Preparing For Gate, Upsc And

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Other Qualifying Examinations. In Addition To Serving The Needs Of The Civil Engineering Students, The Book Will Serve As A Handy Reference For The Practising Engineers As Well.

Traffic Engineering and Transport Planning

The Handbook of Highway Engineering

Basic Civil Engineering

Recent Advances in Civil Engineering

*Modern highway engineering reflects an integrated view of a road system's entire lifecycle, including any potential environmental impacts, and seeks to develop a sustainable infrastructure through careful planning and active management. This trend is not limited to developed nations, but is recognized across the globe. Edited by renowned authority*

*With reference to India.*

*The main objective kept in mind in writing this book is to familiarize the readers with various types of construction materials their manufacture or production, classification, important physical and chemical properties, their uses advantages, disadvantages, testing etc. The book has been written in a very simple and lucid language, illustrated with neatly drawn diagrams and problems The book is designed keeping in mind syllabus of various universities, AIME, The book will prove equally useful to the*

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*practicing engineers.*

*Principles, Practice and Design of Highway Engineering*

*Building Construction Handbook*

*Traffic Engineering*

*Jute Geotextiles and their Applications in Civil Engineering*

This book presents a first-of-its-kind exposition on the emerging technology of jute fiber geotextiles. The book covers the characteristics of jute fiber and jute yarns, types and functions of jute geotextiles, and the mechanism of control of surficial soil with jute geotextiles. The content also includes applications such as the mechanisms of functioning of jute geotextiles in strengthening road sub-grade and controlling river bank erosion, stabilization of earthen embankments, management of settlement of railway tracks, and consolidation of soft soil by use of pre-fabricated vertical jute drains (PVJD). Geotextile standards, properties and test methods, variants of jute geotextiles, economical and environmental advantages in different applications are covered along with a few case studies. A chapter on soil basics is included to enable clearer understanding of soil mechanisms. The book can be used as a reference work or as primary or supporting text for graduate and professional coursework. It will also prove useful to researchers and practicing engineers looking for a comprehensive treatise on jute geotextiles.

★ABOUT THE BOOK: The need and urgency of Hill Roads cannot be minimized in considerations of: (i) National Strategic and Security considerations which require adequate roads for Military, Army use. (ii) Rich forest minerals and oil wealth exist in the hilly terrain, which require exploitation in an

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organized and planned manner. ★RECOMMENDATIONS: A textbook for all Engineering Branches, Competitive Examination, ICS, and AMIE Examinations In S.I Units For Degree, Diploma and A.I.M.E. (India) Students and Practicing Civil Engineers ★ABOUT THE AUTHOR: R.S. Gahilowt (Padam Shree) Consultant Ex. Chairman and Managing Director, Hindustan Steel Works Construction Ltd. Ex. Director, Steel Authority of India. Ex. Superintending Engineer, U.P. P.W.D. Allahabad and V.P. Gupta Executive Engineer. U.P. P.W.D. Hamirpur (U.P.) ★BOOK DETAILS ISBN: 978-81-89401-45-0 Pages: 409 + 16 Paperback Edition: 2nd, Year-2013 Size: L-24.2 B-15.8 H-2.6 ★For more Offers visit our Website: [www.standardbookhouse.com](http://www.standardbookhouse.com)

Comprehensive book focusing solely on highway transportation. Contains treatment of highway administration and planning, evaluation, driver needs, geometric design, the nature of traffic flow and control, pavement design, and an extensive description of how highways are constructed and maintained. \* Offers the very latest AASHTO codes and guidelines for highway design, construction, and beautification. \* Dr. Wright is widely recognized as an expert in highway safety.

Civil Engineering Construction Materials

Concise Handbook of Civil Engineering

Treatise on Hill Roads

Steel Structures

For B.E./B.Tech. & M.E/ M.Tech. Students of Civil Engineering. Also for Practising Engineering and Designers

India's Transport System has several deficiencies such as inadequate capacity, poor safety record, emission

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of pollutants and outmoded technology. But as the economy is poised for a big growth in the coming years transportation engineers will have to come up with innovative ideas. The book addresses these issues and it is hoped that the engineering students studying transportation engineering will have a clear idea of the problems involved and how they transportation engineering will have a clear idea of the problems involved and how they can be overcome in their professional career.

This book on Highway Engineering shall be useful for B.E./B.Tech & M.E/ M.Tech students of Civil Engineering. It shall also be useful for practicing Engineering and designers.

Civil Engineering Materials  
(including Expressways and Airport Engineering)  
Principles and Practice of Highway Engineering  
Computer-Aided Highway Engineering

This unique book presents comprehensive and in-depth coverage of traffic engineering. KEY TOPICS It discusses all modern topics in traffic engineering, including design, construction, operation, maintenance, and system. For anyone involved in traffic studies, engineering, analysis, and control and operations.

The book provides primary information about civil engineering to both a civil and non-civil engineering audience in areas such as construction management, estate management, and building. Basic civil engineering topics like surveying, building materials, construction technology and management, concrete technology, steel structures, soil mechanics and foundations, water resources, transportation and environment engineering are explained in detail. Codal provisions of US, UK and India are included to cater to a global audience. Insights into techniques like modern



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surveying equipment and technologies, sustainable construction materials, and modern construction materials are also included. Key features:

- Provides a concise presentation of theory and practice for all technical in civil engineering.
- Contains detailed theory with lucid illustrations.
- Focuses on the management aspects of a civil engineer's job.
- Addresses contemporary issues such as permitting, globalization, sustainability, and emerging technologies.
- Includes codal provisions of US, UK and India.

The book is aimed at professionals and senior undergraduate students in civil engineering, non-specialist civil engineering audience

This detailed introduction to transportation engineering is designed to serve as a comprehensive text for undergraduate as well as first-year master's students in civil engineering. In order to keep the treatment focused, the emphasis is on roadways (highways) based transportation systems, from the perspective of Indian conditions.

Proceedings of the 2nd International Conference on Sustainable Construction Technologies and Advancements in Civil Engineering (ScTACE 2021)

Challenges of Occupational Safety and Health

Transportation Engineering

Interdisciplinary introduction to transportation engineering serving as a comprehensive text as well as a frequently cited reference for a course in transportation engineering in the Civil Engineering Department.

The book presents the select proceedings of the 2nd International Conference on Sustainable Construction Technologies and Advancements in Civil Engineering

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(ScTACE 2021). This book discusses the latest developments and contributions towards sustainable construction technologies and advances in civil engineering. Various topics covered in this book are construction technologies, geotechnical engineering, transportation and traffic engineering, structural engineering, environmental engineering, remote sensing and GIS, geo-environmental engineering, water resources engineering and earthquake engineering. This book will be useful for students, researchers and professionals working in the area of civil engineering.

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Airport Engineering

Principles of Highway Engineering and Traffic Analysis

Traffic and Highway Engineering

Highway Engineering

***Ideal for students on all construction courses Topics presented concisely in plain language and with clear drawings Updated to include revisions to Building and Construction regulations The Building Construction Handbook is THE authoritative reference for all***

***construction students and professionals. Its detailed drawings clearly illustrate the construction of building elements, and have been an invaluable guide for builders since 1988. The principles and processes of construction are explained with the concepts of design included where appropriate. Extensive coverage of building construction***

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***practice, techniques, and regulations representing both traditional procedures and modern developments are included to provide the most comprehensive and easy to understand guide to building construction. This new edition has been updated to reflect recent changes to the building regulations, as well as new material on the latest technologies used in domestic construction. Building Construction Handbook is the essential, easy-to-use resource for undergraduate and vocational students on a wide range of courses including NVQ and BTEC National, through to Higher National Certificate and Diploma, to Foundation and three-year Degree level. It is also a useful practical reference for building designers, contractors and others engaged in the construction industry.***

***Introduction \* History of Development of Roads \* Highway Planning \* Highway Economics and Finance \* Road Alignment and Survey \* Highway Geometrics \* Highway Drainage \* Hill Roads \* Traffic Engineering \* Road Arboriculture \* Highway Machinery \* Highway Sub-Garde Soils \* Stone Aggregates \* Aggregate Blending Procedures \* Bituminous Materials \* Bituminous Paving Mixes and Mix Design \* Constructiing the Raod Formations \* Design of Flexible Pavements \* Design of Cement Concrete Roads \* Low Cost Roads \* Stablized Roads \* Construction of (WBM) Roads \* Bituminous Roads \* Cement Concrete Roads \* Layout of Urban Roads, Pavings and Ribbon Development \* Highway Failures and Maintence.***

***Highly regarded for its clarity and depth of coverage, the bestselling Principles of Highway Engineering and Traffic Analysis provides a comprehensive introduction to the highway-related problems civil engineers encounter every day. Emphasizing practical applications and up-to-date methods, this book prepares students for real-world***

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***practice while building the essential knowledge base required of a transportation professional. In-depth coverage of highway engineering and traffic analysis, road vehicle performance, traffic flow and highway capacity, pavement design, travel demand, traffic forecasting, and other essential topics equips students with the understanding they need to analyze and solve the problems facing America's highway system. This new Seventh Edition features a new e-book format that allows for enhanced pedagogy, with instant access to solutions for selected problems. Coverage focuses exclusively on highway transportation to reflect the dominance of U.S. highway travel and the resulting employment opportunities, while the depth and scope of coverage is designed to prepare students for success on standardized civil engineering exams.***

***Highway and Traffic Engineering in Developing Countries  
A Guide to Sanchi***

***Principles and Practices of Highway Engineering  
PRINCIPLES OF TRANSPORTATION ENGINEERING***

***1. Collection of more than 162 Essays covering various topics 2. Focuses on developing the art of writing essays 3. Guide is divided into 2 Parts 4. First Part focuses on how to write an effective, interesting essays with techniques 5. Second Part contains all the Latest and Updated topics from all fields of life 6 All topics have been penned in a clear and easy language 7. Important Quotations are provided to better essay writing Writing an essay is a perfect art blend of intellect and creativity that***

***needs discipline of mind, analytical power, and good vocabulary to express thoughts in an appropriate context. To craft a purposeful essay, one must have thorough knowledge of topics, expressions, grammatical accuracy and coherence of thoughts all together. With the revised edition of "151 Essays" readers are certainly helped in enhancing capabilities to present subject matter in a concise and organized manner. The essays in this book have been classified under different categories, giving views on every genre. Latest topics have also been covered with accurate facts and data wherever required. Use of simple and standard language has been kept in mind so that students with different caliber are benefited. A separate section has been made for 'Important Quotations' so that students can use them in writing essay when they require. This book is highly useful for all kinds of examination from academic to government competition. TOC Contemporary Issues, Social Issues, Political Issues, Economic Issues, Science and Technology, Environmental Issues, Education, Health and Sports, Renowned Personalities, Preverbal and Idiomatic, Miscellaneous Issues, Important Quotations 'Transport Planning and Traffic Engineering' is a comprehensive textbook on***

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***the relevant principles and practice. It includes sections on transport policy and planning, traffic surveys and accident investigation, road design for capacity and safety, and traffic management. Clearly written and illustrated, the book is ideal reading for students of t***

***For Civil Engineering Students of All Indian Universities and Practicing Engineers***

***Thrust : Safety in Transportation***

**TRANSPORTATION ENGINEERING**

***Practical Civil Engineering***

***Soil Mechanics and Foundations***