| Subjects | Total no. of Titles |
|---|---|
| Mechanical Engineering | 23 |
| Applied Mechanics | 28 |
| Fluid Mechanics & Hydraulics | 25 |
| Fluid Mechanics | 37 |
| Marine Engineering | 14 |
| Mechatronics & Robotics | 23 |
| Strength of Materials & Solid Mechanics | 19 |
| Thermodynamics, Heat Transfer & Energy Conversion | 25 |
| Mechanics | 28 |
| Fluid Mechanics & Hydraulics | 25 |
| Fluid Mechanics | 37 |
| Marine Engineering | 14 |
| Mechatronics & Robotics | 23 |
| Strength of Materials & Solid Mechanics | 19 |
| Thermodynamics, Heat Transfer & Energy Conversion | 25 |
| Acoustics & Sound | 11 |
| Dynamics | 13 |
| General | 25 |
| Lagrangian | 6 |
| Oscillations & Waves | 12 |
| Engineering Reference | 49 |
| Total | 481 |

## Mechanical Engineering (23)

| S. No. | Title |
|---|---|
| 1. | Schaum's Outline of Theory and Problems of Machine Design<br>by **A.S. Hall, A.R. Holowenko, H.G. Laughlin - McGraw-Hill** , **1961**<br>This book is designed primarily to supplement standard texts in elementary machine design, based on the belief that numerous solved problems constitute one of the best means for clarifying and fixing in mind basic principles ...<br>(**4807** views) |
| 2. | Isometric Drawing<br>by **Alpha Pierce Jamison - McGraw-Hill** , **1911**<br>To understand what is to follow, the reader must possess a working knowledge of mechanical drawing. Attention is given to the way in which a drawing can be made, rather than to the reasons for doing 'thus and so'. Plain |

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| | and common terms will be used.<br>(**11895** views) |
| **3.** | **OpenSCAD User Manual**<br>**- Wikibooks** , **2013**<br>OpenSCAD is a free software for creating solid 3D CAD objects. Unlike most free software for creating 3D models (such as the well-known Blender), OpenSCAD does not focus on the artistic aspects of 3D modelling, but instead focuses on the CAD aspects.<br>(**9911** views) |
| **4.** | **Mechanical Drawing. Elementary and Advanced**<br>by **John S. Reid - J. Wiley & sons** , **1910**<br>The work includes courses in Advanced Mechanical Drawing consisting of courses in Advanced isometrical Drawing, Architectural Drawing, Sheet Metal Drafting, Machine Details, and Working Drawings made from freehand sketches of small machine parts.<br>(**4802** views) |
| **5.** | **Tribology in Engineering**<br>by **Hasim Pihtili (ed.) - InTech** , **2013**<br>The main goal in preparing this book was to publish contemporary concepts, new discoveries and innovative ideas in the field of surface engineering, predominantly for the technical applications, as well as in the field of production engineering.<br>(**5421** views) |
| **6.** | **Mechanical Drawing Self-Taught**<br>by **Joshua Rose - Henry Carey Baird & Co.** , **1887**<br>The object of this book is to enable the beginner to make simple mechanical drawings without the aid of an instructor, and to create an interest in the subject by giving examples such as the machinist meets with in his every-day workshop practice.<br>(**5216** views) |
| **7.** | **Wave Propagation: Theories and Applications**<br>by **Yi Zheng (ed.) - InTech** , **2013**<br>This book introduces some exciting applications and theories to those who have general interests in waves and wave propagations, and provides insights and references to those who are specialized in the areas presented in the book.<br>(**4740** views) |
| **8.** | **New Generation of Electric Vehicles**<br>by **Zoran Stevic (ed.) - InTech** , **2012**<br>The book presents modern technologies applied in the implementation of electric vehicles. Special attention was paid to energy efficiency of EV's. Also today's trends, mathematical models and computer design elements of future cars are presented.<br>(**9901** views) |

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| **9.** | **Welding Processes**<br>by **Radovan Kovacevic - InTech** , **2012**<br>Despite the wide availability of literature on welding processes, a need exists to update community on advancements in joining techniques of similar and dissimilar materials, in their numerical modeling, as well as in their sensing and control.<br>(**5717** views) |
| **10.** | **Advances on Analysis and Control of Vibrations: Theory and Applications**<br>by **M.Z. de la Hoz, F. Pozo - InTech** , **2012**<br>This book is a compendium of research works on vibration analysis and control. It goes through new methodologies that help us understand and mitigate this phenomenon. The applications include vehicle suspension systems, wind turbines, etc.<br>(**5933** views) |
| **11.** | **Steam-turbine Principles and Practice**<br>by **Terrell Croft - McGraw-Hill** , **1923**<br>Steam-turbine Principles and Practice has been prepared, for the 'practical' man. It has been written to provide the operating engineer, the plant superintendent, or manager with such steam-turbine information as he requires in his everyday work.<br>(**21209** views) |
| **12.** | **Electric Vehicle Conversion**<br>**- Wikibooks** , **2011**<br>An electric vehicle conversion is the modification of an internal combustion engine driven vehicle to battery electric propulsion, creating a battery electric vehicle. The book is a general guide to performing your own conversions.<br>(**7074** views) |
| **13.** | **Tool Engineering; Jigs And Fixtures**<br>by **Albert Atkins Dowd - McGraw-Hill** , **1922**<br>The aim and purpose of this book is to furnish information with respect to the science of tool engineering. An endeavor has been made to simplify the subject matter and to treat it in a manner which can be easily understood by the designer.<br>(**27529** views) |
| **14.** | **Wind Turbines**<br>by **T. Al-Shemmeri - BookBoon** , **2010**<br>This book aims to describe the fundamentals of wind energy and the pertinent parameters that control the amount of energy available from a given wind turbine. The book is complimented by many worked examples of the calculations.<br>(**18343** views) |
| **15.** | **Manufacturing Processes and Materials: Exercises**<br>by **Miltiadis A. Boboulos - BookBoon** , **2010**<br>The book addresses issues essential to modern manufacturing, ranging from |

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| | traditional topics such as casting, forming, machining, and joining, to advanced topics such as nanomaterials. Comprehensive coverage of relevant engineering fundamentals.<br>(**9167** views) |
| **16.** | **Fundamentals of Combustion**<br>by **Joseph M. Powers - University of Notre Dame** , **2010**<br>Thermodynamics and chemical kinetics of combustion reactions, modeling of reacting fluid mechanical systems, subsonic and supersonic combustion, detailed and one-step kinetics, ignition theory, asymptotic and numerical modeling techniques.<br>(**8542** views) |
| **17.** | **CAD-CAM and Rapid Prototyping Application Evaluation**<br>by **Miltiadis A. Boboulos - BookBoon** , **2010**<br>The author describes via review, analysis and case studies the state of art in the selection, application and implementation of CAD-CAM systems. New manufacturing technologies that build parts on a layer-by-layer basis are also analyzed.<br>(**21015** views) |
| **18.** | **Wind Power**<br>by **S. M. Muyeen - InTech** , **2010**<br>The wind energy has the huge potential of becoming a major source of renewable energy for this modern world. Wind power is a clean, emissions-free power generation technology, based on capturing the energy from natural forces.<br>(**23482** views) |
| **19.** | **Mechanical Drawing Problems**<br>by **Edward Berg, Emil Kronquist - The Manual Arts Press** , **1918**<br>This is a collection of progressive problems embodying the fundamental principles and examples of practical mechanical drawing. Topics include procedures in making a drawing, orthographic projection, sectional views, drawing an ellipse and more.<br>(**9758** views) |
| **20.** | **Basic Concepts in Turbomachinery**<br>by **Grant Ingram - BookBoon** , **2009**<br>This free textbook is intended to complement existing literature by providing more detail on some of the very basics aspects of how turbomachinery operates. A series of problems are provided at the end of each chapter with numerical answers.<br>(**35159** views) |
| **21.** | **Mechanical Vibration**<br>by **Janusz Krodkiewski** , **2008**<br>Introduction to the theory of vibrations of mechanical systems. First part, Modelling and Analysis, is devoted to this solution that can be approximated by the linear models. The second part is on experimental investigations.<br>(**12382** views) |

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| **22.** | **The Boundary Element Method in Acoustics**<br>by **Stephen Kirkup - Integrated Sound Software** , **2007**<br>The book is an introduction to the boundary element method (BEM) and its application to acoustic problems. Software implementing the methods is available. Examples of realistic application illustrate the potential of the BEM in acoustic simulation.<br>(**15786** views) |
| **23.** | **Fundamentals of Die Casting Design**<br>by **Genick Bar-Meir** , **2000**<br>This book describes the fundamentals of design of the die casting process and die mold/runner. It will be useful for the die casting engineer as well as managers and anyone else who deals with the die casting operations.<br>(**13925** views) |

**Applied Mechanics** (28)

| S. No. | Title |
|---|---|
| 1. | **Machine Shop Work**<br>by **Frederick W. Turner - American technical society** , **1918**<br>The 'Machine Shop Work' is a comprehensive manual of approved shop methods, including the construction and use of tools and machines, the details of their efficient operation, and a discussion of modern production methods.<br>(**2665** views) |
| 2. | **Fundamentals of Machine Tools**<br>**- U. S. Government Printing Office** , **1996**<br>The purpose of this training circular is to provide a better understanding of power-driven machine tools. One of the objectives is for this publication is to be clear and understandable. Illustrations show the step-by-step process of many operations.<br>(**3786** views) |
| 3. | **Machinery Repairman**<br>by **Wayne T. Drew - Naval Education and Training Program** , **1993**<br>This Training Manual and Nonresident Training Course form a package to teach the theoretical knowledge needed by a Machinery Repairman. This package may be combined with on-the-job training to provide the necessary elements of practical experience.<br>(**3045** views) |
| 4. | **Mechanisms / Machines**<br>by **Larry Teel - Delmar Publishers** , **1972**<br>This material presents the topic of modern machines. It combines the elements of mechanical theory, drafting skills and practical applications. Topics treated: graphical analysis of machines in the areas of velocity and acceleration polygons, etc.<br>(**3763** views) |

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| 5. | **Mechanisms / Drives**<br>by **Richard W. Tinnell - Delmar Publishers** , **1971**<br>An introductory treatment of modern mechanical drives. The topics treated include: various gear drive configurations employing spur, bevel, helical gears, belt drives of several types, chain drives, friction drives, and some selected special topics.<br>(**2353** views) |
| 6. | **Continuum Mechanics: Progress in Fundamentals and Engineering Applications**<br>by **Yong X. Gan - InTech** , **2012**<br>This book summarizes the advances of Continuum Mechanics in several defined areas, with an emphasis on the application aspect: energy materials and systems, materials removal, and mechanical response/deformation of structural components.<br>(**6211** views) |
| 7. | **Mechanics of Engineering**<br>by **Irving Porter Church - John Wiley & Sons** , **1908**<br>Comprising statics and dynamics of solids, the mechanics of the materials of construction or strength and elasticity of beams, columns, shafts, arches, the principles of hydraulics and pneumatics with applications. For the use of technical schools.<br>(**13455** views) |
| 8. | **Applied Mechanics**<br>by **Alfred P. Poorman** , **1917**<br>This textbook on Applied Mechanics is intended for use in the undergraduate courses in Mechanics in engineering schools. The author develops the basic principles of the subject in a way which the average student could easily follow.<br>(**16258** views) |
| 9. | **Applied Mechanics and Strength of Materials**<br>by **A.B. Clemens - International TextBook Company** , **1906**<br>The book is written in the simplest language possible, so as to make it readily understood by all students. Necessary technical expressions are clearly explained when introduced. Practical and accurate information is given in clear and concise form.<br>(**8852** views) |
| 10. | **A Short Course in Elementary Mechanics for Engineers**<br>by **Clifford Newton Mills - D. Van Nostrand Company** , **1916**<br>This course in Elementary Mechanics is arranged for students who have previously studied Trigonometry. The subject matter is divided into three parts, namely, Kinematics, Kinetics, and Statics. Much detailed discussion is omitted.<br>(**15941** views) |
| 11. | **Elementary Dynamics: a textbook for engineers**<br>by **Joseph Whittington Landon - Cambridge University Press** , **1920** |

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| | The book presents the principles of elementary dynamics, and explains the meaning of the physical quantities involved, partly by definition and description, but mainly by worked examples in which formulae have been avoided as far as possible.<br>(**12598** views) |
| 12. | **Mechanics: A Textbook for Engineers**<br>by **James E. Boyd - McGraw-Hill** , **1921**<br>This book is intended to give a working knowledge of the principles of Mechanics and to supply a foundation upon which study of Strength of Materials, Stresses in Structures, Machine Design, and other courses of more technical nature may rest.<br>(**8976** views) |
| 13. | **Analytical Mechanics for Engineers**<br>by **Fred B. Seely - J. Wiley & sons** , **1921**<br>This book presents those principles of mechanics that are believed to be essential for the student of engineering. Throughout the book the aim has been to make the principles of mechanics stand out clearly ; to build them up from common experience.<br>(**14410** views) |
| 14. | **Mechanics for Engineers**<br>by **Arthur Morley - Longmans** , **1905**<br>The aim of this book is to provide a suitable course in the principles of Mechanics for engineering students. More prominence than usual has been given to such parts of the subject as energy, work of forces and torques, power, and graphical statics.<br>(**8785** views) |
| 15. | **Applied Mechanics for Engineers**<br>by **John Duncan - Macmillan and co** , **1913**<br>The author's object in writing this book has been to provide a practical statement of the principles of Mechanics. Principles have been illustrated by numerous fully worked-out examples, and exercises for home or class work have been provided.<br>(**10029** views) |
| 16. | **Mechanics Applied to Engineering**<br>by **John Goodman - Longmans, Green, and Co.** , **1914**<br>This book has been written especially for Engineers and Students who already possess a fair knowledge of Elementary Mathematics and Theoretical Mechanics ; it is intended to assist them to apply their knowledge to practical engineering problems.<br>(**8477** views) |
| 17. | **Applied Gyrodynamics**<br>by **Ervin S. Ferry - John Wiley & Sons** , **1933**<br>A rigorous theoretical and mathematical description of the motion of spinning bodies and practical applications where their gyroscopic properties are used. The book goes into great detail on the theory, design and |

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| | implementation of applications.<br>(**8636** views) |
| 18. | **Applied Mechanics**<br>by **Gaetano Lanza - J. Wiley** , **1905**<br>The work is a treatise on strength and stability, a number of subjects usually included in treatises on applied mechanics are omitted. It is primarily a text-book, the different subjects are presented in the best way for the progress of the class.<br>(**19902** views) |
| 19. | **Mechanics: Problems for Engineering Students**<br>by **Frank Berry Sanborn - J. Wiley & sons** , **1906**<br>The book presents many practical problems together with brief definitions and solutions of typical problems which should help the student to follow this advice: "Learn for yourself, think for yourself, make yourself master of principles".<br>(**14056** views) |
| 20. | **Applied Mechanics for Beginners**<br>by **John Duncan - Macmillan and co** , **1902**<br>In the preparation of this little book, the object has been to provide students of engineering and allied constructive arts with a practical statement of the principles of Mechanics essential to an intelligent interest in their occupations.<br>(**9136** views) |
| 21. | **Kinematics and Kinetics of Machinery**<br>by **John A. Dent, Arthur C. Harper - John Wiley & Sons** , **1921**<br>It is hoped that this volume will fill a need in the curricula of our engineering schools, in that it gives systematic methods of determining velocities, accelerations, and inertia forces which can be applied to practically all mechanisms.<br>(**9672** views) |
| 22. | **Introduction to Statics and Dynamics**<br>by **Rudra Pratap, Andy Ruina - Cornell University** , **2009**<br>This is an engineering statics and dynamics text intended as both an introduction and as a reference. The book emphasizes use of vectors, free-body diagrams, momentum and energy balance and computation. Intuitive approaches are discussed throughout.<br>(**12219** views) |
| 23. | **Roller Coaster Physics**<br>by **Tony Wayne** , **1998**<br>This text discusses some of the principles involved in the design of a roller coaster. It is intended for the middle or high school teacher, and physics students. Many of the concepts can be applied to topics other than roller coasters.<br>(**11839** views) |

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| 24. | **Dynamics of Mechanical Systems**<br>by **Janusz Krodkiewski** , **2008**<br>This text provides the students with the theoretical background of the three dimensional mechanics of rigid body and its applications. This part of mechanics is presented in three parts: Modelling, Analysis and Experimental Investigations.<br>(**11901** views) |
| 25. | **Mechanics of Rigid Body**<br>by **Janusz Krodkiewski** , **2008**<br>The purpose of this text is to provide the students with the theoretical background and engineering applications of the three dimensional mechanics of a rigid body. Covered are three-dimensional kinematics and kinetics of particles and rigid bodies.<br>(**11982** views) |
| 26. | **MIT Guide to Lock Picking**<br>by **Theodore T. Tool** , **1991**<br>The text presents the basics about locks and lock picking, a set of exercises that will help you learn the skills of lock picking, a catalog of the mechanical traits and defects found in locks and the techniques used to recognize and exploit them.<br>(**11903** views) |
| 27. | **Applied Mechanics Dynamics**<br>by **G. W. Housner, D. E. Hudson - California Institute of Technology** , **1980**<br>Textbook for engineering students who wish to prepare for more advanced studies of dynamics. The emphasis is on particle and rigid-body dynamics. The book shows how the classical mechanics methods are applied to the various branches of engineering.<br>(**12495** views) |
| 28. | **Introduction to Continuum Mechanics for Engineers**<br>by **Ray M. Bowen - Springer** , **2007**<br>This textbook is an introduction to the essentials of modern Continuum Mechanics for engineering graduate students. The book is self contained and suitable for self study. It establishes certain classical continuum models within a modern framework.<br>(**13637** views) |

**Fluid Mechanics & Hydraulics** (25)

| S. No. | Title |
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| 1. | **Engineering Fluid Dynamics**<br>by **Bjorn H. Hjertager (Ed.) - MDPI AG** , **2018**<br>The topic of engineering fluid dynamics includes both experimental as well as computational studies. Submissions are from the fields of mechanical, chemical, marine, safety, and energy engineering, both |

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| | original research articles and review articles.<br>(**2011** views) |
| 2. | **Lagrangian Solid Modeling**<br>by **Matthew Marko - viXra** , **2017**<br>The author demonstrates a stable Lagrangian solid modeling method, tracking the interactions of solid mass particles, rather than using a meshed grid. This method avoids the problem of tensile instability seen with Smooth Particle Applied Mechanics.<br>(**2606** views) |
| 3. | **Unified Physics: Fluids**<br>by **Bob R. Hunter, Henry Allen - Delmar Publishers** , **1971**<br>An introductory treatment of basic fluid principles as well as others elected topics. The materials cover these concepts: differential forces, flow rates, opposition to flow, energy storage, time constants, impedance matching and resonance.<br>(**3158** views) |
| 4. | **Lectures on Computational Fluid Dynamics**<br>by **Nikolai Kornev, Irina Cherunova - Bookboon** , **2015**<br>This book is written to introduce the basics of computational fluid dynamics including turbulence modelling. It contains three parts: basic computational fluid dynamics, turbulence modelling and application to some problems of human thermodynamics.<br>(**6709** views) |
| 5. | **Lecture Notes on Gas Dynamics**<br>by **Joseph M. Powers - University of Notre Dame** , **2012**<br>These are a set of class notes for a gas dynamics/viscous flow course taught to juniors in Aerospace Engineering. It is expected that the student has some familiarity with concepts such as material derivatives, control volume analysis, etc.<br>(**5840** views) |
| 6. | **Advances in Modeling of Fluid Dynamics**<br>by **Chaoqun Liu (ed.) - InTech** , **2012**<br>This book contains twelve chapters detailing significant advances and applications in fluid dynamics modeling with focus on biomedical, bioengineering, chemical, civil and environmental engineering, aeronautics, astronautics, and automotive.<br>(**7117** views) |
| 7. | **Engineering Fluid Mechanics**<br>by **T. Al-Shemmeri - BookBoon** , **2012**<br>This book tackles the many laws and principles in a very clear and easy way describing the parameters that control the particular situation. The text is complemented by many worked examples, tutorial problems to help students get further practice.<br>(**16513** views) |

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| 8. | **Hydrostatics and Pneumatics**<br>by **Philip Magnus - Longmans** , **1891**<br>This Class-Book is intended for those who have already acquired some elementary knowledge of Mechanics, and are about to commence the study of Hydrostatics and Pneumatics. The author combines the Experimental with the Deductive method.<br>(**9097** views) |
| 9. | **Advanced Fluid Dynamics**<br>by **Hyoung Woo Oh - InTech** , **2012**<br>This book provides a broad range of topics on fluid dynamics for advanced scientists and professional researchers. The text helps readers develop their own skills to analyze fluid dynamics phenomena encountered in professional engineering.<br>(**5466** views) |
| 10. | **A First Course in Fluid Mechanics for Engineers**<br>by **Buddhi N. Hewakandamby - BookBoon** , **2012**<br>A First Course in Fluid Mechanics covers the basics of the engineering fluid mechanics without delving into deeper more mathematical concepts. Building from the most basic concepts, it covers the topics in fluid statics and dynamics.<br>(**11400** views) |
| 11. | **Applied Aerodynamics**<br>by **Jorge Colman Lerner, Ulfilas Boldes - InTech** , **2012**<br>This Book covers numerous cases of stationary and non stationary aerodynamics; wave generation and propagation; wind energy; flow control techniques and, also, sports aerodynamics. Useful for researchers in several branches of applied aerodynamics.<br>(**7330** views) |
| 12. | **Applied Computational Fluid Dynamics**<br>by **Hyoung Woo Oh - InTech** , **2012**<br>This comprehensive book can be used as a reference text to meet the needs of advanced scientists and research engineers who want to improve their computational fluid dynamics (CFD) skills to solve a variety of fluid flow problems.<br>(**5633** views) |
| 13. | **Hydrodynamics: Natural Water Bodies**<br>by **Harry Edmar Schulz, et al. - InTech** , **2012**<br>This volume presents advanced topics on hydrodynamics: Mathematical Models in Fluid Mechanics; Biological Applications and Biohydrodynamics; Detailed Experimental Analyses of Fluids and Flows; Radiation-, Electro-, Magnetohydrodynamics, etc.<br>(**5901** views) |
| 14. | **Drilling Fluid Engineering**<br>by **Pal Skalle - BookBoon** , **2010**<br>This book presents how to apply fluid mechanics on drilling fluid |

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| | related challenges and explains the related physics involved and the different engineering approaches. The author is a professor of petroleum engineering at NTNU.<br>(**7165** views) |
| 15. | **Computational Fluid Dynamics: Technologies and Applications**<br>by **Igor V. Minin, Oleg V. Minin - InTech** , **2011**<br>This is a state-of-art reference book in the area of computational fluid dynamics for CFD engineers, scientists, applied physicists and post-graduate students. The book also presents new and innovative CFD research and developments.<br>(**11102** views) |
| 16. | **Wind Tunnels**<br>by **Satoru Okamoto - InTech** , **2011**<br>This book collects original research studies on recent applications in wind tunnel tests, exhibiting various investigation directions and providing a bird's eye view on this broad subject area. Addressed to researchers and professional engineers.<br>(**15030** views) |
| 17. | **Intermediate Fluid Mechanics**<br>by **Joseph M. Powers - University of Notre Dame** , **2011**<br>Lecture notes on intermediate fluid mechanics: Derivation of governing equations of mass, momentum, and energy for a viscous, compressible fluid; general survey of vortex dynamics, potential flow, viscous flow, and compressible flow.<br>(**12994** views) |
| 18. | **Hydraulics for Engineers and Engineering Students**<br>by **F. C. Lea - E. Arnold** , **1916**<br>Contents: fluids at rest; floating bodies; fluids in motion; flow of water through orifices and over weirs; flow through pipes; flow in open channels; gauging the flow of water; impact of water on vanes; water wheels and turbines; pumps; etc.<br>(**17320** views) |
| 19. | **Computational Fluid Dynamics**<br>by **Hyoung Woo Oh - InTech** , **2010**<br>This book is intended to serve as a reference text for advanced scientists and research engineers to solve a variety of fluid flow problems using computational fluid dynamics. Chapters are contributed by the practiced experts in the field.<br>(**13189** views) |
| 20. | **Computational Fluid Dynamics**<br>by **Abdulnaser Sayma - BookBoon** , **2009**<br>This book provides the basics of Computational Fluid Dynamics (CFD) appropriate to modern day undergraduate study. The aim is to bridge the gap between books focusing on detailed theoretical analysis and |

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| | commercial software user's guides.<br>(**21250** views) |
| 21. | **Concise Hydraulics**<br>by **Dawei Han - BookBoon** , **2008**<br>Introductory textbook on hydraulics written for undergraduate students in civil and environmental engineering, environmental science and geography. The aim of this book is to provide a concise and comprehensive coverage of hydraulics.<br>(**11827** views) |
| 22. | **Fundamentals of Multiphase Flow**<br>by **Christopher E. Brennen - Cambridge University Press** , **2005**<br>The book for graduate students and researchers at the cutting edge of investigations into the fundamental nature of multiphase flows. It is intended as a reference book for the basic methods used in the treatment of multiphase flows.<br>(**12010** views) |
| 23. | **Fundamentals of Compressible Fluid Mechanics**<br>by **Genick Bar–Meir** , **2008**<br>This book describes the fundamentals of compressible flow phenomena for engineers and others. It can be used as a reference book for people who have some knowledge of the basics of fundamental fluid mechanics, calculus, and physics.<br>(**12225** views) |
| 24. | **Cavitation and Bubble Dynamics**<br>by **Christopher E. Brennen - Oxford University Press** , **1995**<br>A treatment of the fundamental physical processes involved in bubble dynamics and cavitation. It is applicable to topics ranging from valve damage in hydroelectric equipment, ship propellers, and internal combustion engines to the turbines and pumps.<br>(**11638** views) |
| 25. | **Hydrodynamics of Pumps**<br>by **Christopher E. Brennen - Concepts ETI** , **1994**<br>Monograph on the fluid dynamics of liquid turbomachines, particularly pumps. It is focused on problems associated with the flow of liquid through a rotating machine. The potential for cavitation and the high density of liquids lead to these problems.<br>(**11821** views) |

**Fluid Mechanics** (37)

| S. No. | Title |
|---|---|
| 1. | **Lagrangian Solid Modeling**<br>by **Matthew Marko - viXra** , **2017**<br>The author demonstrates a stable Lagrangian solid modeling method, |

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| | tracking the interactions of solid mass particles, rather than using a meshed grid. This method avoids the problem of tensile instability seen with Smooth Particle Applied Mechanics.<br>(**2606** views) |
| 2. | **Introductory Fluid Mechanics**<br>by **Simon J.A. Malham - Heriot-Watt University** , **2011**<br>Contents: Introduction; Fluid flow; Trajectories and streamlines; Conservation of mass; Balance of momentum; Transport theorem; Simple example flows; Kelvin's circulation theorem; Bernoulli's Theorem; Irrotational/potential flow; etc.<br>(**2925** views) |
| 3. | **An Introduction to Theoretical Fluid Dynamics**<br>by **Stephen Childress - New York University** , **2008**<br>This course will deal with a mathematical idealization of common fluids. The main idealization is embodied in the notion of a continuum and our 'fluids' will generally be identified with a certain connected set of points in 1, 2, or 3 dimensions.<br>(**3701** views) |
| 4. | **Some Open Questions in Hydrodynamics**<br>by **Mateusz Dyndal, Laurent Schoeffel - arXiv** , **2014**<br>There are many deep open questions that come with the theory of fluid mechanics. We discuss some of them that we classify in two categories, the long term behavior of solutions of equations of hydrodynamics and the definition of initial conditions.<br>(**3845** views) |
| 5. | **Lecture notes in fluid mechanics: From basics to the millennium problem**<br>by **Laurent Schoeffel - arXiv** , **2014**<br>These lecture notes have been prepared as a first course in fluid mechanics up to the presentation of the millennium problem listed by the Clay Mathematical Institute. Our primary goal is to debunk this beautiful problem as much as possible.<br>(**7413** views) |
| 6. | **An Introduction to the Mechanics of Fluids**<br>by **Edwin H. Barton - Longmans, Green** , **1915**<br>In writing this book, while preserving the usual rigour, the endeavour has been made to impart to it by the character of the illustrations and examples, a modern and practical flavour which will render it more widely useful. The calculus is not used.<br>(**5801** views) |
| 7. | **Fluid Flow at Branching Junctions**<br>by **Taha Sochi - arXiv** , **2013**<br>The flow of fluids at branching junctions plays important roles in most biological flow systems. The present paper highlights some key issues related to the flow of fluids at these junctions with special emphasis on |

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| | the biological flow networks.<br>(**5863** views) |
| 8. | **Liquid Layers, Capillary Interfaces and Floating Bodies**<br>by **Erich Miersemann - Leipzig University** , **2013**<br>In these notes we study liquid layers, capillary interfaces and floating bodies. Leading term in the associated equilibrium equation for the interface is the mean curvature. In the case of liquid layers no volume constraint or contact angle occur.<br>(**3236** views) |
| 9. | **Complex Fluids: The Physics of Emulsions**<br>by **M. E. Cates - arXiv** , **2012**<br>These lectures start with the mean field theory for a symmetric binary fluid mixture, addressing interfacial tension, the stress tensor, and the equations of motion (Model H). We then consider the phase separation kinetics of such a mixture.<br>(**3532** views) |
| 10. | **The Physics of Ocean Waves**<br>by **Michael Twardos - SurfLibrary.org** , **2004**<br>This text is intended to be a general but comprehensive overview on physical phenomena associated with the marine environment. The author provides his own perspective on this field from his particular experiences and training.<br>(**4140** views) |
| 11. | **Exploring the Biofluiddynamics of Swimming and Flight**<br>by **David Lentink - Wageningen University** , **2008**<br>Many organisms move through water or air in order to survive and reproduce. It is useful to analyze fluid motion as a collection of vortices: vortices interact with the moving organism, interact with each other, and evolve independently in time.<br>(**3773** views) |
| 12. | **Hydrodynamics**<br>by **Horace Lamb - Cambridge University Press** , **1895**<br>Constantly in use since its first publication in 1879, this book is the definitive reference for all fluid dynamicists. Despite the pace of modern research and the advent of high-speed computers, Lamb's work remains a relevant, timeless classic.<br>(**5461** views) |
| 13. | **Microfluidics**<br>by **Philippe Marmottant - Wikibooks** , **2010**<br>Microfluidics is the science of fluid flows at the microscopic scale. This book will deal with the basic physical principles involved in microfluidics. We hope it will provide a background knowledge to consult more specialized books or article.<br>(**3777** views) |

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| 14. | **Statistical Mechanics of Two-dimensional and Geophysical Flows**<br>by **Freddy Bouchet, Antoine Venaille - arXiv , 2011**<br>The theoretical study of the self-organization of two-dimensional and geophysical turbulent flows is addressed based on statistical mechanics methods. This review is a self-contained presentation of classical and recent works on this subject.<br>(**4851** views) |
| 15. | **Computational Fluid Dynamics: Technologies and Applications**<br>by **Igor V. Minin, Oleg V. Minin - InTech , 2011**<br>This is a state-of-art reference book in the area of computational fluid dynamics for CFD engineers, scientists, applied physicists and post-graduate students. The book also presents new and innovative CFD research and developments.<br>(**11102** views) |
| 16. | **Using Multiscale Norms to Quantify Mixing and Transport**<br>by **Jean-Luc Thiffeault - arXiv , 2011**<br>Mixing is relevant to many areas of science and engineering, including the pharmaceutical and food industries, oceanography, atmospheric sciences, etc. In all these situations one goal is to improve the degree of homogenisation of a substance.<br>(**6651** views) |
| 17. | **Intermediate Fluid Mechanics**<br>by **Joseph M. Powers - University of Notre Dame , 2011**<br>Lecture notes on intermediate fluid mechanics: Derivation of governing equations of mass, momentum, and energy for a viscous, compressible fluid; general survey of vortex dynamics, potential flow, viscous flow, and compressible flow.<br>(**12994** views) |
| 18. | **Turbulence for (and by) amateurs**<br>by **Denis Bernard - arXiv , 2000**<br>Series of lectures on statistical turbulence written for amateurs but not experts. Elementary aspects and problems of turbulence in two and three dimensional Navier-Stokes equation are introduced. A few properties of scalar turbulence are described.<br>(**5858** views) |
| 19. | **Surface Waves**<br>by **John V. Wehausen, Edmund V. Laitone - Springer , 1960**<br>Since its first publication this article has been an inspirational resource for students and researchers in the various fields of science and engineering. This may be attributed to its encyclopedic scope and to the scholarly efforts of the authors.<br>(**8269** views) |
| 20. | **Solution of the Cauchy problem for the Navier - Stokes and Euler equations**<br>by **A. Tsionskiy, M. Tsionskiy - arXiv , 2010** |

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| | Solutions of the Navier-Stokes and Euler equations with initial conditions (Cauchy problem) for two and three dimensions are obtained in the convergence series form by the iterative method using the Fourier and Laplace transforms in this paper.<br>(**7504** views) |
| 21. | **Applied Aerodynamics**<br>by **Leonard Bairstow - Longmans, Green** , **1920**<br>The work aims at the extraction of principles of flight from, and the illustration of the use of, detailed information on aeronautics now available from many sources. The subject of aerodynamics is almost wholly based on experiment.<br>(**14827** views) |
| 22. | **Introduction to Statistical Theory of Fluid Turbulence**<br>by **Mahendra K. Verma - arXiv** , **2005**<br>Fluid and plasma flows exhibit complex random behaviour, called turbulence. This text is a brief introduction to the statistical theory of fluid turbulence, with emphasis on field-theoretic treatment of renormalized viscosity and energy fluxes.<br>(**8372** views) |
| 23. | **The Theory of Rotating Fluids**<br>by **Harvey Philip Greenspan - Breukelen Press** , **1990**<br>The author's intention was to provide a foundation for the support and promotion of research in rotating fluids. The text concentrates on those topics which the author considers fundamental, of central importance to most the areas of application.<br>(**9079** views) |
| 24. | **Computational Fluid Dynamics**<br>by **Hyoung Woo Oh - InTech** , **2010**<br>This book is intended to serve as a reference text for advanced scientists and research engineers to solve a variety of fluid flow problems using computational fluid dynamics. Chapters are contributed by the practiced experts in the field.<br>(**13189** views) |
| 25. | **Water Waves: The Mathematical Theory With Applications**<br>by **J. J. Stoker - Interscience Publishers** , **1957**<br>Offers an integrated account of the mathematical hypothesis of wave motion in liquids with a free surface, subjected to gravitational and other forces. Uses both potential and linear wave equation theories, together with applications.<br>(**9409** views) |
| 26. | **A Practical Introduction to Numerical Hydrodynamics**<br>by **Garrelt Mellema - Leiden University** , **2003**<br>An introduction to the field of numerical hydrodynamics. It will give you some insight in what is involved in such calculations. Numerical hydrodynamics is used in many parts of astrophysics. The applications |

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| | we consider in this exercise are stellar.<br>(**10595** views) |
| 27. | **Solution Methods In Computational Fluid Dynamics**<br>by **T. H. Pulliam - NASA** , **2005**<br>Implicit finite difference schemes for solving two dimensional and three dimensional Euler and Navier-Stokes equations will be addressed. The methods are demonstrated in fully vectorized codes for a CRAY type architecture.<br>(**8986** views) |
| 28. | **The Secret of Sailing**<br>by **Johan Hoffman, Johan Jansson, Claes Johnson** , **2009**<br>This book presents a mathematical theory of sailing based on a combination of analysis and computation. This new theory is fundamentally different from that envisioned in the classical theories for lift in inviscid flow and for drag in viscous flow.<br>(**9468** views) |
| 29. | **Atmospheric Convection**<br>by **David J. Raymond - New Mexico Tech** , **2009**<br>A graduate course in the physics of atmospheric convection: Governing equations of fluid dynamics; Convection and turbulence; Thermodynamics of moist convection; Simple models of convection; Microphysics of convection; Convection and the environment.<br>(**10675** views) |
| 30. | **The Secret of Flight**<br>by **Johan Hoffman, Johan Jansson, Claes Johnson** , **2008**<br>A theory of subsonic flight based on a combination of analysis and computation. We uncover a mechanism for the generation of substantial lift at the expense of small drag of a wing, which is fundamentally different from the classical theories.<br>(**22646** views) |
| 31. | **Computational Turbulent Incompressible Flow**<br>by **Johan Hoffman, Claes Johnson - Springer** , **2007**<br>In this book we address mathematical modeling of turbulent fluid flow, and its many mysteries that have haunted scientist over the centuries. We approach these mysteries using a synthesis of computational and analytical mathematics.<br>(**9205** views) |
| 32. | **Computational Fluid Dynamics**<br>by **Abdulnaser Sayma - BookBoon** , **2009**<br>This book provides the basics of Computational Fluid Dynamics (CFD) appropriate to modern day undergraduate study. The aim is to bridge the gap between books focusing on detailed theoretical analysis and commercial software user's guides.<br>(**21250** views) |

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| 33. | **Why the Boundary of a Round Drop Becomes a Curve of Order Four**<br>by **A. N. Varchenko, P. I. Etingof - American Mathematical Society , 1992**<br>This book concerns the problem of evolution of a round oil spot surrounded by water when oil is extracted from a well inside the spot. It turns out that the boundary of the spot remains an algebraic curve of degree four in the course of evolution.<br>(**12419** views) |
| 34. | **Fundamentals of Multiphase Flow**<br>by **Christopher E. Brennen - Cambridge University Press , 2005**<br>The book for graduate students and researchers at the cutting edge of investigations into the fundamental nature of multiphase flows. It is intended as a reference book for the basic methods used in the treatment of multiphase flows.<br>(**12010** views) |
| 35. | **Fundamentals of Compressible Fluid Mechanics**<br>by **Genick Bar–Meir , 2008**<br>This book describes the fundamentals of compressible flow phenomena for engineers and others. It can be used as a reference book for people who have some knowledge of the basics of fundamental fluid mechanics, calculus, and physics.<br>(**12225** views) |
| 36. | **Basics of Fluid Mechanics**<br>by **Genick Bar-Meir , 2008**<br>Introductory textbook for the fluid mechanics in undergraduate classes for engineering/science students. It can be used as a reference book for people who have at least some basics knowledge of science areas such as calculus, physics, etc.<br>(**25009** views) |
| 37. | **Topics in dynamics I: Flows**<br>by **Edward Nelson - Princeton University Press , 1969**<br>Lecture notes for a course on differential equations covering differential calculus, Picard's method, local structure of vector fields, sums and Lie products, self-adjoint operators on Hilbert space, commutative multiplicity theory, and more.<br>(**14951** views) |

**Marine Engineering** (14)

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| 1. | **Marine Hydrodynamics**<br>by **J. N. Newman - The MIT Press , 2018**<br>This classic textbook fills the need for a single volume on the applications of hydrodynamics to marine problems. The book is solidly based on fundamentals, but it also guides the student to an |

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| | understanding of engineering applications ...<br>(**1320** views) |
| 2. | **Marine Propulsion Simulation: Methods and Results**<br>by **Michele Martelli - De Gruyter Open** , **2015**<br>This book presents the main steps for the development of a multi-physic simulation platform, able to represent the motions of a twin screw ship in six degrees of freedom, taking into account the whole propulsion system and automation effects.<br>(**1823** views) |
| 3. | **Tsunami Science and Engineering**<br>by **Valentin Heller (ed.) - MDPI AG** , **2016**<br>Despite a significant increase in research activities after the 2004 Indian Ocean Tsunami, there certainly can be -- and needs to be -- more research with the aim to reduce the destruction caused by tsunamis to us and our environment.<br>(**2320** views) |
| 4. | **Actual Ships Stability Problems and The Influence on Safety of Navigation**<br>by **Cristian Andrei** , **2016**<br>The book is approaching the problems of ships stability loss through the study of operational aspects as well as dynamic ship behaviour in severe conditions offering a picture of some stability failure modes that are not covered by any regulations.<br>(**2323** views) |
| 5. | **Boat-Building and Boating**<br>by **Daniel Carter Beard - Charles Scribner's Sons** , **1931**<br>This book is intended for beginners in the art of boat-building. It begins with the primitive crafts composed of slabs or logs and works up to scows, house-boats, skiffs, canoes and simple forms of sailing craft, a motor-boat, and there it stops.<br>(**5787** views) |
| 6. | **Nautical Charts**<br>by **G. R. Putnam - J. Wiley** , **1908**<br>A considerable portion of the human race is interested directly or indirectly, whether as mariners or passengers or shippers, in navigation upon the sea. This book covers the general subject of nautical charts, their origin, construction, and use.<br>(**5678** views) |
| 7. | **Lectures on Ship Manoeuvrability**<br>by **Nikolai Kornev - Bookboon** , **2013**<br>This book contains fourteen lectures which include main principles of ship manoeuvrability. Experimental, theoretical and numerical methods used in the ship theory are presented in a clear and simple form. Each chapter is supplied with exercises.<br>(**5838** views) |

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| 8. | **Wooden Ship-Building**<br>by **Charles Desmond - Rudder Pub. Co** , **1919**<br>The object of this book is to place at the disposal of builders of wood ships some much needed information about construction and equipment. Each principal part of a vessel's construction is explained, the book can be used for reference purposes.<br>(**4262** views) |
| 9. | **Offshore Hydromechanics**<br>by **J.M.J. Journée, W.W. Massie - Delft University of Technology** , **2001**<br>This text book is an attempt to provide a comprehensive treatment of hydromechanics for offshore engineers. The treatment of the selected topics includes both the background theory and its applications to realistic problems.<br>(**5499** views) |
| 10. | **Introduction in Ship Hydromechanics**<br>by **J.M.J. Journée and Jakob Pinkster - Delft University of Technology** , **2002**<br>This preliminary text book provides a short introduction in ship hydromechanics for second year maritime engineering students. Topics have been selected for inclusion based upon their applicability in modern maritime engineering practice.<br>(**6348** views) |
| 11. | **Text-Book of Theorectical Naval Architecture**<br>by **Edward Lewis Attwood - Longmans, Green, and co.** , **1917**<br>This book has been prepared in order to provide students and draughtsmen engaged in Shipbuilders' and Naval Architects drawing offices with a text-book which should explain the calculations which continually have to be performed.<br>(**6276** views) |
| 12. | **Shipbuilding from its beginnings**<br>by **Emile van Konijnenburg** , **1913**<br>May this book add its mite to a knowledge of the gradual evolution of shipbuilding; may it also cause to disappear this ridiculous way in which ancient ships used to be represented and, most of all, may it awaken the love for the building of ships.<br>(**5556** views) |
| 13. | **Modeling of Sonar Transducers and Arrays**<br>by **George Benthien, Stephen Hobbs** , **2005**<br>Tutorial describing the mathematical tools used in the modeling of Sonar transducers and arrays. Topics include The Acoustic Wave Equation, Acoustic Array Interactions, The Helmholtz and Kirchhoff Integral Equations, Infinite Element Methods, etc.<br>(**5859** views) |

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| 14. | **Shipbuilding for Beginners**<br>by **Andrew Williams Carmichael** , **1918**<br>This booklet is issued for use by workmen engaged in building ships. Written in simple language and illustrated with clear diagrams, it will serve both as a guide to the activities of a modern American shipyard and a stimulus to patriotic service.<br>(**8715** views) |

**Mechatronics & Robotics** (23)

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| 1. | **Electromechanisms: Fabrication**<br>by **K. Paul - Delmar Publishers** , **1973**<br>The book is intended to provide a meaningful experience in fabrication techniques for students of modern technology. The text is presented in an action oriented format combining features normally found in a textbook with those of a laboratory manual.<br>(**3402** views) |
| 2. | **Optomechatronics**<br>by **Alexander W. Koch (ed.) - MDPI AG** , **2014**<br>The field of optomechatronics provides synergistic effects of optics, mechanics and electronics for efficient sensor development. Optical sensors for measurements, equipped with signal processing means have a wide range of applications ...<br>(**2316** views) |
| 3. | **Electromechanisms: Transducers**<br>by **Richard L. Allen, Bob R. Hunter - Delmar Publishers** , **1972**<br>This book is intended to provide meaningful experience in basic transducers for students of modern technology. The topics included: basic principles of measurement as well as pressure, temperature, level, rate, photoelectric, and sound transducers.<br>(**2953** views) |
| 4. | **Electromechanisms: Devices**<br>by **L. Paul Robertson, Bob R. Hunter, Richard L. Allan - Delmar Publishers** , **1971**<br>The book presents motors, generators, relays, solenoids and other selected topics in a simple and direct manner. The materials are presented in an action-oriented format combining the features found in a textbook with those of a laboratory manual.<br>(**2158** views) |
| 5. | **Electromechanisms: Motor Controls**<br>by **D.A. Anderson - Delmar Publishers** , **1971**<br>Intended to provide meaningful experience in electronic motor control for students of modern technology. The topics included are basic principles of motor control, SCR controls for various types of motors, and an |

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| | introduction to digital controls.<br>(**3090** views) |
| 6. | **Mechanisms / Linkages**<br>by **L.P. Robertson, et al. - Delmar Publishers** , **1972**<br>This material is an introductory treatment of modern Mechanical Linkages, combining the elements of mechanical theory with those of practicality. The topics treated include various levers and four-bar configurations and some selected special topics.<br>(**3344** views) |
| 7. | **Computer Architecture and Interfacing to Mechatronic Systems**<br>by **Dario J. Toncich - Chrystobel Engineering** , **1994**<br>The purpose of this book is to address the links that need to be bridged between modern electronic and mechanical equipment. We look at the issue of what a mechanical or manufacturing engineer needs to know in order to design mechatronic systems.<br>(**6755** views) |
| 8. | **Robotics**<br>**- Wikibooks** , **2012**<br>Robotics brings together several very different engineering areas and skills: mechanics, electronics, programming... This book tries to cover the key areas of robotics as a hobby. When possible examples from industrial robots will be addressed too.<br>(**4684** views) |
| 9. | **Robot Arms**<br>by **Satoru Goto - InTech** , **2011**<br>Applications of robot arms are not limited to the industrial factory but expanded to living space or outer space. The robot arm is an integrated technology, and its technological elements are actuators, sensors, mechanism, control and system, etc.<br>(**7152** views) |
| 10. | **Automation and Robotics**<br>by **Miltiadis A. Boboulos - BookBoon** , **2010**<br>In this book for the optimization of assembly conveyor lines we are dealing with series part production featured by a medium complexity degree and a medium number of individual components and assembly technique alternatives.<br>(**8234** views) |
| 11. | **Mechatronic Systems: Simulation Modeling and Control**<br>by **Annalisa Milella Donato Di Paola, Grazia Cicirelli - InTech** , **2010**<br>This book provides an excellent survey of recent work in modelling and control of electromechanical components, and mechatronic machines and vehicles. The book collects and presents contributions from many researchers worldwide.<br>(**13807** views) |

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| 12. | **Mechatronic Systems Applications**<br>by **A. M. D. Di Paola, G. Cicirelli - InTech** , **2010**<br>Mechatronics is the synergistic blend of mechanics, electronics, and computer science. This book is concerned with applications of mechatronic systems in various fields, like robotics, medical and assistive technology, human-machine interaction, etc.<br>(**13832** views) |
| 13. | **Climbing and Walking Robots**<br>by **Behnam Miripour - InTech** , **2010**<br>Topics: Technologies and Applications for Climbing Robots Locomotion and Adhesion; Mechanical Synthesis for Fast Operation in Climbing and Walking Robots; Stair Climbing Robots and High-Grip Crawler; Locomotion Analysis of Hexapod Robot; etc.<br>(**8307** views) |
| 14. | **Advances in Robot Manipulators**<br>by **Ernest Hall - InTech** , **2010**<br>The purpose of this volume is to inspire the continual invention of robot manipulators. The concept of eclecticism for the design, simulation and implementation of a real time controller for an intelligent, vision guided robots is now being explored.<br>(**8305** views) |
| 15. | **Robot Manipulators: New Achievements**<br>by **Aleksandar Lazinica, Hiroyuki Kawai - InTech** , **2010**<br>Contents: Robotic Machining from Programming to Process Control; Fuzzy Optimal Control for Robot Manipulators; A Concept for Isles of Automation; Concurrent Engineering of Robot Manipulators; 3D Imaging System for Tele-Manipulation; and more.<br>(**7449** views) |
| 16. | **Advances in Haptics**<br>by **Mehrdad Hosseini Zadeh - InTech** , **2010**<br>Haptic technology enables computer users to manipulate remote objects in virtual environments or tele-operation systems. In this book authors from around the world present the results of their research on various issues in the field of haptics.<br>(**7479** views) |
| 17. | **Industrial Robotics: Theory, Modelling and Control**<br>by **Sam Cubero - Pro Literatur Verlag** , **2006**<br>This book covers a wide range of topics relating to advanced industrial robotics, sensors and automation technologies. Included are topics such as networking, properties of manipulators, forward and inverse robot arm kinematics, etc.<br>(**11027** views) |
| 18. | **Climbing and Walking Robots: Towards New Applications**<br>by **Houxiang Zhang - InTech** , **2007**<br>An overview of the latest wide-range achievements in climbing and |

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| | walking robotic technology for researchers, scientists, and engineers throughout the world. Different aspects are presented from the scientific and from the technical point of view.<br>(**8412** views) |
| 19. | **Robot Manipulators**<br>by **Marco Ceccarelli - InTech** , **2008**<br>Each chapter addresses a specific area of modeling, design, and application of robots but with an eye to give an integrated view of what make a robot a unique modern system for many different uses and future potential applications.<br>(**9867** views) |
| 20. | **Parallel Manipulators, Towards New Applications**<br>by **Huapeng Wu - InTech** , **2008**<br>This volume opens a view of current parallel robot research and applications: remote handling, machine tools, medical robots, simulators, micro-robots, and humanoid robots. There are contributions by authors from around the world.<br>(**9820** views) |
| 21. | **Parallel Manipulators, New Developments**<br>by **Jee-Hwan Ryu - InTech** , **2008**<br>The book provides an overview of the state-of-art, presents new ideas, original results and practical experiences in parallel manipulators. The book introduces advanced analysis methods and cutting edge control technologies for parallel manipulators.<br>(**8077** views) |
| 22. | **Humanoid Robots: Human-like Machines**<br>by **Matthias Hackel - InTech** , **2007**<br>This book is divided in four parts: Hardware Development: Components and Systems, Biped Motion: Walking, Running and Self-orientation, Sensing the Environment: Acquisition, Data Processing and Control and Mind Organization: Learning and Interaction.<br>(**10221** views) |
| 23. | **Cutting Edge Robotics**<br>by **V. Kordic, A. Lazinica, M. Merdan - InTech** , **2005**<br>This book is the result of contributions from many researchers worldwide. It presents a collection of wide range research results of robotics scientific community. Various aspects of current research in robotics area are explored and discussed.<br>(**12962** views) |

**Strength of Materials & Solid Mechanics** (19)

| S. No. | Title |
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| 1. | **Mechanisms: Materials**<br>by **Robert F. Brun, John C. Sheihing - Delmar Publishers** , **1973**<br>This text is an introductory treatment of Modern Materials, combining the elements of mechanical theory with those of material and its behavior. The experiments are presented in an action-oriented format combininga textbook with a laboratory manual.<br>(**3303** views) |
| 2. | **Introduction to Continuum Mechanics**<br>by **David J. Raymond - New Mexico Tech** , **1999**<br>The textbook develops the subject of continuum mechanics from the point of view of an applied physicist with interests in geophysics and astrophysics. The basic subjects covered are central to the full spectrum of applications of continuum mechanics.<br>(**6392** views) |
| 3. | **Continuum Mechanics**<br>by **Bob McGinty - ContinuumMechanics.org** , **2014**<br>This text presents the principles of finite deformation continuum mechanics with many example applications to metals and incompressible viscoelastic materials (rubber). It can serve as lecture notes for a graduate level course in continuum mechanics.<br>(**3436** views) |
| 4. | **Mechanical Properties of Materials**<br>by **David Roylance - MIT** , **2008**<br>Uniaxial Mechanical Response; Thermodynamics of Mechanical Response; Fiber-reinforced polymer-matrix composite materials; General Concepts of Stress and Strain; Yield and Plastic Flow; Fracture (Fracture Mechanics - the Energy-Balance Approach).<br>(**4152** views) |
| 5. | **Engineering Mechanics of Solids**<br>by **Louis L. Bucciarelli Jr. - McGraw-Hill** , **1994**<br>This is a book about the Mechanics of Solids, Statics, the Strength of Materials, and Elasticity Theory. Along the way you will learn about stress, strain, the behavior of trusses, beams, of shafts that carry torsion, even columns that may buckle.<br>(**3512** views) |
| 6. | **Applied Strength of Materials for Engineering Technology**<br>by **Barry Dupen - Purdue University** , **2012**<br>Contents: Introduction; Stress and Strain; Poisson's Ratio and Thermal Expansion; Pressure Vessels and Stress Concentrations; Bolted and Welded Joints; Torsion in Round Shafts; Stresses in Beams; Beam Deflection; Beam Design; Combined Stresses; etc.<br>(**4160** views) |
| 7. | **Solid Mechanics Lecture Notes**<br>by **Piaras Kelly - The University of Auckland** , **2013**<br>Lecture notes on solid mechanics for engineering students. Part I:An |

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| | Introduction to Solid Mechanics Part II:Engineering Solid Mechanics Part III:Foundations of Continuum Solid Mechanics Part IV: Material Models in Continuum Solid Mechanics.<br>(**11502** views) |
| 8. | **Mechanical Metallurgy**<br>by **George Ellwood Dieter - McGraw-Hill** , **1961**<br>In writing 'Mechanical Metallurgy' an attempt has been made to cover, in some measure, the great diversity of interests. The objective has been to include the entire scope of mechanical metallurgy in one fairly comprehensive volume.<br>(**5386** views) |
| 9. | **Applied Mechanics of Solids**<br>by **Allan F. Bower - CRC Press** , **2011**<br>This text summarizes the physical laws, mathematical methods, and computer algorithms that are used to predict the response of materials and structures to mechanical or thermal loading. It is intended for advanced undergraduate or graduate students.<br>(**4253** views) |
| 10. | **Mechanics of Solids and Fracture**<br>by **Ho Sung Kim - Bookboon** , **2013**<br>Contents: Stress And Strain; Linear Elastic Stress-Strain Relations; Circular Plates; Fundamentals For Theory Of Elasticity; Linear Elastic Stress Field In Cracked Bodies; Plastic Deformation Around A Crack Tip; Crack Growth...<br>(**7619** views) |
| 11. | **Introduction to Mechanics of Materials**<br>by **Roland Jančo; Branislav Hučko - Bookboon** , **2013**<br>This book is a pilot course in the Mechanics of Materials (Elasticity and Strength) offered to students throughout the bachelor study. The objective of this course is to develop the ability to analyse a given problem in a simple and logical manner.<br>(**8558** views) |
| 12. | **Applied Fracture Mechanics**<br>by **Alexander Belov (ed.) - InTech** , **2012**<br>The book presents application of fracture mechanics methods to materials science, medicine, and engineering. Topics include safety of nuclear reactor components, fatigue effects in pipelines, environmental effects on fracture, and more.<br>(**4847** views) |
| 13. | **Solid Mechanics**<br>by **James R. Rice - Harvard University** , **2010**<br>The application of the principles of mechanics to bulk matter is divided into the mechanics of fluids and the mechanics of solids. Solid mechanics is concerned with the stressing, deformation and failure of solid materials |

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| | and structures.<br>(**5409** views) |
| 14. | **Theory of Waves in Materials**<br>by **Jeremiah Rushchitsky - BookBoon** , **2011**<br>The book unites the basic theoretical facts of solid mechanics - mechanics of materials and mechanics of wave processes. It links three important facts: physical properties of materials, mathematical models and the propagation of waves.<br>(**5507** views) |
| 15. | **Applied Mechanics and Strength of Materials**<br>by **A.B. Clemens - International TextBook Company** , **1906**<br>The book is written in the simplest language possible, so as to make it readily understood by all students. Necessary technical expressions are clearly explained when introduced. Practical and accurate information is given in clear and concise form.<br>(**8853** views) |
| 16. | **Elementary Applied Mechanics**<br>by **A. W. Thomson, T. Alexander - MacMillan** , **1916**<br>The work forms an elementary consecutive treatise on the subject of Internal Stress and Strain. The whole is illustrated by a systematic and graduated set of Examples. At every point graphical methods are combined with the analytical.<br>(**20549** views) |
| 17. | **Applied Mechanics**<br>by **Gaetano Lanza - J. Wiley** , **1905**<br>The work is a treatise on strength and stability, a number of subjects usually included in treatises on applied mechanics are omitted. It is primarily a text-book, the different subjects are presented in the best way for the progress of the class.<br>(**19903** views) |
| 18. | **Mechanics of Materials**<br>by **Madhukar Vable - Michigan Technological University** , **2009**<br>With strong practical examples and real-life engineering problems, the book promises to provide the skills and principles that students need to organize, integrate, and make sense of the flood of information in the world of modern engineering.<br>(**12332** views) |
| 19. | **The Analysis of Stress and Deformation**<br>by **G. W. Housner, T. Vreeland Jr. - California Institute of Technology** , **1965**<br>The book for a course in the mechanics of deformable bodies for advanced undergraduate or first-year graduate students. It goes more deeply into the fundamentals and gives less emphasis to the design aspects of the subject.<br>(**13957** views) |

**Thermodynamics, Heat Transfer & Energy Conversion** (25)

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| 1. | **Selected Problems of Contemporary Thermomechanics**<br>by **Jerzy Winczek (ed.) - InTech** , **2018**<br>Thermomechanics is a discipline which investigates the behavior of bodies under the action forces and heat input. Thermomechanical phenomena commonly occur in the human environment, from the action of solar radiation to the technological processes.<br>(**1672** views) |
| 2. | **Heat Exchangers: Design, Experiment and Simulation**<br>by **S M Sohel Murshed, Manuel Matos Lopes (eds) - InTech** , **2017**<br>Presenting contributions from renowned experts in the field, this book covers research and development in fundamental areas of heat exchangers, which include: design and theoretical development, experiments, numerical modeling and simulations.<br>(**2660** views) |
| 3. | **Fundamentals of Refrigeration Thermodynamics**<br>by **Daniel Micallef - Bookboon** , **2014**<br>This book should serve first degree engineering students with an introduction to refrigeration systems. Topics include refrigeration thermodynamics, refrigeration systems and modeling. Little to no previous knowledge of thermodynamics is assumed.<br>(**3208** views) |
| 4. | **Thermokinetics**<br>by **V. A. Etkin - viXra** , **2010**<br>The book calls attention to a method of describing and investigating various physicochemical processes in their inseparable link with the heat form of energy. This book is intended for researches, engineers and university students.<br>(**5816** views) |
| 5. | **Software Solutions to Problems on Heat Transfer**<br>by **M. Thirumaleshwar - Bookboon** , **2013**<br>This book contains solutions to problems in the area of Heat Transfer. Problems are solved using four popular software, viz. 'Mathcad', 'Engineering Equation Solver (EES)', 'Finite Element Heat Transfer (FEHT)' and MS EXCEL-2007.<br>(**6670** views) |
| 6. | **Engineering Thermodynamics**<br>by **Charles Edward Lucke - McGraw-Hill** , **1912**<br>Calculations about heat and work, both of them in connection with changes in the condition of all sorts of substances that may give or take heat, and perform or receive work while changing condition, constitute the subject matter of this book.<br>(**4636** views) |

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| 7. | **Elements of Engineering Thermodynamics**<br>by **James Ambrose Moyer - J. Wiley** , **1920**<br>This book brings out the fundamental principles of Engineering Thermodynamics, and is intended for use in technical colleges where it is possible to give special courses on the subjects of steam turbines, internal combustion engines, etc.<br>(**6297** views) |
| 8. | **Thermal Power Plants: Advanced Applications**<br>by **Mohammad Rasul (ed.) - InTech** , **2013**<br>The book covers plant performance, energy efficiency, combustion, heat transfer, renewable power generation and environmental aspects of combustion residues. This book addresses issues related to both coal fired and steam power plants.<br>(**5261** views) |
| 9. | **Refrigeration: Theory And Applications**<br>by **James K. Carson - Bookboon** , **2013**<br>This book covers the basic thermodynamic and heat transfer considerations of the vapour compression cycle followed by the major applications of refrigeration. The text is intended for use as an elective undergraduate paper for engineering students.<br>(**4623** views) |
| 10. | **The Development and Application of Microwave Heating**<br>by **Wenbin Cao (ed.) - InTech** , **2012**<br>Microwave heating has found many applications ranging from the microwave ovens in kitchen to heat food, to materials processing in the various fields. Microwave heating demonstrates significant advantages over conventional methods.<br>(**5091** views) |
| 11. | **Heat Transfer Phenomena and Applications**<br>by **Salim N. Kazi (ed.) - InTech** , **2012**<br>Heat transfer calculations in different aspects of engineering applications are essential to aid engineering design of heat exchanging equipment. Minimizing of computational time is a challenging task faced by researchers and users.<br>(**7356** views) |
| 12. | **Heat Treatment: Conventional and Novel Applications**<br>by **Frank Czerwinski (ed.) - InTech** , **2012**<br>This book offers a review of recent global developments in an application of thermal and thermochemical processing to modify the microstructure and properties of a range of engineering materials. A mixture of conventional and novel applications.<br>(**5668** views) |
| 13. | **Heat Transfer**<br>by **Benjamin Gebhart - McGraw-Hill** , **1961**<br>This book is a description of the more important physical processes, |

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| | theories, and methods of analysis loosely grouped in the field referred to as 'heat transfer.' The textbook will serve the general reader and the practicing engineer as well.<br>(**6474** views) |
| 14. | **Heat Exchangers: Basics Design Applications**<br>by **Jovan Mitrovic - InTech** , **2012**<br>The book focuses on the efficient use and conversion energy in changing environment. Beside the basics of thermodynamic, the book addresses several important issues, such as conceptions, design, operations, fouling and cleaning of heat exchangers.<br>(**11028** views) |
| 15. | **Heat Transfer: Engineering Applications**<br>by **Vyacheslav S. Vikhrenko - InTech** , **2011**<br>This book deals with combined action of heat transfer and concomitant processes, heat effects due to laser, ion and plasma-solid interaction, curing reaction kinetics in manufacturing process, heat conduction in metallic porous media, etc.<br>(**6426** views) |
| 16. | **Heat Conduction: Basic Research**<br>by **Vyacheslav S. Vikhrenko - InTech** , **2011**<br>The book covers inverse heat conduction problems, non-linear and non-classic heat conduction equations, coupled thermal and electromagnetic or mechanical effects and numerical methods for solving heat conduction equations as well.<br>(**6409** views) |
| 17. | **Convection and Conduction Heat Transfer**<br>by **Amimul Ahsan - InTech** , **2011**<br>The convection and conduction heat transfer, thermal conductivity, and phase transformations are significant issues in design of industrial processes and devices. This book covers mainly heat convection, heat conduction, and heat transfer analysis.<br>(**10819** views) |
| 18. | **Lecture Notes on Intermediate Thermodynamics**<br>by **Joseph M. Powers - University of Notre Dame** , **2010**<br>These are lecture notes on Intermediate Thermodynamics for juniors or seniors majoring in aerospace or mechanical engineering. The objective of the course is to survey both practical and theoretical problems in classical thermodynamics.<br>(**10940** views) |
| 19. | **Lecture Notes on Thermodynamics**<br>by **Joseph M. Powers - University of Notre Dame** , **2010**<br>Basic concepts of thermodynamics. Topics covered: Properties of a pure substance; Work and heat; First law of thermodynamics; Second law of thermodynamics; Power and refrigeration systems; Theoretical |

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| | foundations of classical thermodynamics.<br>(**9032** views) |
| 20. | **Energy Conversion**<br>by **Kenneth Weston - PWS** , **1992**<br>This text deals with energy conversion topics that should be well understood by all mechanical engineers. It is intended for use in an introductory course in energy conversion, to follow first courses in thermodynamics and fluid mechanics.<br>(**9558** views) |
| 21. | **Heat for Engineers**<br>by **Charles Robert Darling - Spon & Chamberlain** , **1912**<br>The author has endeavoured to explain thoroughly the principles underlying the matters dealt with. The connection between heat and work has been kept prominent throughout, and the use of the various formulae given has been illustrated by examples.<br>(**8534** views) |
| 22. | **Applied Thermodynamics for Engineers**<br>by **William D. Ennis - D. Van Nostrand Company** , **1915**<br>This book takes a middle ground between those textbooks which replace all theory by empiricism and that other class of treatises which are too apt to ignore the engineering significance of their vocabulary of differential equations.<br>(**8880** views) |
| 23. | **Heat Transfer: Exercises**<br>by **Chris Long, Naser Sayma - BookBoon** , **2010**<br>This work book contains examples and full solutions to go with the text of our e-book 'Heat Transfer'. The subject matter corresponds to the five chapters: Introduction to Heat Transfer, Conduction, Convection, Heat Exchangers and Radiation.<br>(**8965** views) |
| 24. | **Heat Transfer**<br>by **Chris Long, Naser Sayma - BookBoon** , **2009**<br>This book explains the basic modes of heat transfer: conduction, convection and radiation. Fundamental mathematical models representing the heat transfer modes are introduced and application engineering problems are discussed.<br>(**11410** views) |
| 25. | **A Heat Transfer Textbook**<br>by **John H. Lienhard IV, John H. Lienhard V - Phlogiston Press** , **2017**<br>This textbook is an introduction to heat and mass transfer for engineering students. The subjects covered include heat conduction, forced and natural convection, thermal radiation, boiling, condensation, heat exchangers, and mass transfer.<br>(**59372** views) |

**Mechanics** (28)

| S. No. | Title |
|---|---|
| 1. | **Variational Principles in Classical Mechanics**<br>by **Douglas Cline - River Campus Libraries** , **2017**<br>This book introduces variational principles, and illustrates the intellectual beauty, the remarkable power, and the broad scope, of applying variational principles to classical mechanics. Applications presented cover a wide variety of topics ...<br>(**1977** views) |
| 2. | **Continuum Mechanics**<br>by **Zdenek Martinec - Charles University in Prague** , **2011**<br>This text is suitable for a two-semester course on Continuum Mechanics. It is based on notes from undergraduate courses. The material is intended for use by undergraduate students of physics with a year or more of college calculus behind them.<br>(**2880** views) |
| 3. | **Applications of the Calculus to Mechanics**<br>by **E.R. Hedrick, O.D. Kellogg - Ginn and company** , **1909**<br>It has been the practice at the University of Missouri to follow the course in sophomore calculus with several weeks in applications to mechanics, a subject rich in the kind of material desired. This book is a formulation of the work there attempted.<br>(**3012** views) |
| 4. | **Classical Mechanics**<br>**- Wikibooks** , **2012**<br>Classical mechanics is the study of the motion of bodies based upon Isaac Newton's famous laws of mechanics. The reader should be comfortable with basic physics concepts. Familiarity with geometry, algebra, and calculus is a must.<br>(**13050** views) |
| 5. | **Continuum Mechanics: Progress in Fundamentals and Engineering Applications**<br>by **Yong X. Gan - InTech** , **2012**<br>This book summarizes the advances of Continuum Mechanics in several defined areas, with an emphasis on the application aspect: energy materials and systems, materials removal, and mechanical response/deformation of structural components.<br>(**6211** views) |
| 6. | **Lecture Notes and Exercises on Statics**<br>by **Abdulwahab Amrani** , **2010**<br>Course objectives: To understand and use the general ideas of force vectors and equilibrium; To understand and use structural analysis and internal force and friction; To understand the ideas of center of gravity, |

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| | centroids and moments of inertia.<br>(**6508** views) |
| **7.** | **Advanced Mechanics**<br>by **Eric Poisson - University of Guelph** , **2008**<br>These lecture notes are suitable for a one-semester course at the third-year undergraduate level. The table of contents: Newtonian mechanics; Lagrangian mechanics; Hamiltonian mechanics; Term project: Motion around a black hole.<br>(**10612** views) |
| **8.** | **A Short Introduction to Theoretical Mechanics**<br>by **A. Nony Mous - Archive.org** , **2007**<br>Contents: Generalized Coordinate Systems; Differential Equations; One Dimensional Motion; Motion of a Particle in Two and Three Dimensions; Accelerated Frames of Reference; Systems of Interacting Particles; The Special Theory of Relativity; etc.<br>(**10240** views) |
| **9.** | **Theoretical Kinematics**<br>by **Oene Bottema, Bernard Roth - Dover Publications** , **1990**<br>An important reference for any researcher in kinematics, it covers many important results for analysis and design of mechanisms. The authors used the adjective theoretical in the title in order to distinguish the subject from applied kinematics.<br>(**11505** views) |
| **10.** | **Elementary Applied Mechanics**<br>by **A. W. Thomson, T. Alexander - MacMillan** , **1916**<br>The work forms an elementary consecutive treatise on the subject of Internal Stress and Strain. The whole is illustrated by a systematic and graduated set of Examples. At every point graphical methods are combined with the analytical.<br>(**20549** views) |
| **11.** | **Introduction to Mechanics and Symmetry**<br>by **Jerrold E. Marsden, Tudor S. Ratiu - Springer** , **1998**<br>This volume contains much of the basic theory of mechanics and should prove to be a useful foundation for further, as well as more specialized topics. As the name of the book implies, a consistent theme running through the book is that of symmetry.<br>(**11336** views) |
| **12.** | **Mechanics and Hydrostatics for Beginners**<br>by **S. L. Loney - Cambridge University Press** , **1922**<br>This little book is of a strictly elementary character, and is intended for the use of students whose knowledge of Geometry and Algebra is not presumed to extend beyond the first two Books of Euclid and the solution of simple Quadratic Equations.<br>(**8877** views) |

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| **13.** | **Elementary Mechanics from a Mathematician's Viewpoint**<br>by **Michael Spivak - University of Georgia** , **2004**<br>Contents: The Hardest Part of Mechanics (The Fundamentals); How Newton Analyzed Planetary Motion; Systems of Particles; Conservation Laws; Rigid Bodies; Constraints; Holonomic and Non-Holonomic Constraints; Statically Indeterminate Structures.<br>(**8767** views) |
| **14.** | **Modern Introductory Mechanics**<br>by **Walter Wilcox - Bookboon** , **1999**<br>This is a two semester introductory classical mechanics text. The coverage of material includes some unusual topics in variational techniques and deterministic chaos. The treatment of relativity is more complete than usual.<br>(**9843** views) |
| **15.** | **Notes on Analytical Mechanics**<br>by **Ingemar Bengtsson - Stockholms universitet, Fysikum** , **2017**<br>These are lecture notes for an undergraduate course in analytical mechanics. From the table of contents: Lagrangian mechanics; The central force two-body problem; Rotation and rigid bodies; The Hamiltonian formulation; Integrable and chaotic motion.<br>(**9512** views) |
| **16.** | **Classical Mechanics**<br>by **Joel A. Shapiro - Rutgers** , **2009**<br>A textbook for an advanced course in classical mechanics covering: Particle Kinematics; Lagrange's and Hamilton's Equations; Two Body Central Forces; Rigid Body Motion; Small Oscillations; Hamilton's Equations; Perturbation Theory; Field Theory.<br>(**13225** views) |
| **17.** | **Mechanics and Special Relativity**<br>by **Howard Georgi - Harvard College** , **2005**<br>For students with good preparation in physics and mathematics at the level of the advanced placement curriculum. Topics include an introduction to Lagrangian mechanics, Noether's theorem, special relativity, collisions and scattering, etc.<br>(**11395** views) |
| **18.** | **Lecture Notes on Classical Mechanics**<br>by **Sunil Golwala - California Institute of Technology** , **2007**<br>These notes cover classical mechanics and special relativity. You will learn new techniques that will allow you to attack a wider set of problems than you saw in the introductory sequences as well as provide you a deeper understanding of physics.<br>(**9572** views) |
| **19.** | **Theoretical Mechanics**<br>by **Paul Lammert** , **2009**<br>We will study some famous and amusing problems. We will recast |

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| | Newton's mechanics in languages (Lagrangian and Hamiltonian) which are not only practical for many problems but allow the methods of mechanics to be extended into every corner of physics.<br>(**9682** views) |
| **20.** | **Classical Mechanics**<br>by **Robert L. Dewar - The Australian National University** , **2001**<br>We develop a more abstract viewpoint in which one thinks of the dynamics of a system described by a number of generalized coordinates, but in which the dynamics can be encapsulated in a single scalar function: the Lagrangian or the Hamiltonian.<br>(**9846** views |
| **21.** | **Introduction to Statics and Dynamics**<br>by **Rudra Pratap, Andy Ruina - Cornell University** , **2009**<br>This is an engineering statics and dynamics text intended as both an introduction and as a reference. The book emphasizes use of vectors, free-body diagrams, momentum and energy balance and computation. Intuitive approaches are discussed throughout.<br>(**12219** views) |
| **22.** | **Lectures on Classical Mechanics**<br>by **John C. Baez - University of California** , **2005**<br>These are course notes for a mathematics graduate course on classical mechanics. The author started with the Lagrangian approach, with a heavy emphasis on action principles, and derived the Hamiltonian approach from that.<br>(**13358** views) |
| **23.** | **Roller Coaster Physics**<br>by **Tony Wayne** , **1998**<br>This text discusses some of the principles involved in the design of a roller coaster. It is intended for the middle or high school teacher, and physics students. Many of the concepts can be applied to topics other than roller coasters.<br>(**11840** views) |
| **24.** | **Mechanics of Rigid Body**<br>by **Janusz Krodkiewski** , **2008**<br>The purpose of this text is to provide the students with the theoretical background and engineering applications of the three dimensional mechanics of a rigid body. Covered are three-dimensional kinematics and kinetics of particles and rigid bodies.<br>(**11982** views) |
| **25** | **Foundations of Mechanics, Second Edition**<br>by **Ralph Abraham, Jerrold E. Marsden - Addison-Wesley** , **1987**<br>The advanced book on mechanics for mathematicians, physicists, and engineers interested in geometrical methods in mechanics. The basic results in manifold theory are included, as well as some key facts from |

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| | point set topology and Lie group theory.<br>(**11860** views) |
| **26.** | **Amateur Physics for the Amateur Pool Player**<br>by **Ron Shepard - Argonne National Laboratory** , **1997**<br>Notes for the pool player who enjoys playing the game, and who enjoys understanding how things work using the language of physics. The tone of the presentation directed toward the amateur who enjoys both physics and pool playing.<br>(**12428** views) |
| **27.** | **Structure and Interpretation of Classical Mechanics**<br>by **Gerald Jay Sussman, Jack Wisdom - The MIT Press** , **2001**<br>The book emphasizes the development of general tools to support the analysis of nonlinear Hamiltonian systems. Explorations of transitions to chaos, nonlinear resonances, and resonance overlap to help the student to develop tools for understanding.<br>(**10311** views) |
| **28.** | **Introduction to Continuum Mechanics for Engineers**<br>by **Ray M. Bowen - Springer** , **2007**<br>This textbook is an introduction to the essentials of modern Continuum Mechanics for engineering graduate students. The book is self contained and suitable for self study. It establishes certain classical continuum models within a modern framework.<br>(**13637** views) |

**Acoustics & Sound** (11)

| S. No. | Title |
|---|---|
| 1. | **Acoustics**<br>**- Wikibooks** , **2012**<br>Acoustics is the science that studies sound, its production, transmission, and effects. This book describes the fundamentals of acoustics and some of the major applications which are dependent upon the nature of the sound that is to be produced.<br>(**9216** views) |
| 2. | **The Dynamical Theory of Sound**<br>by **Horace Lamb - E. Arnold** , **1910**<br>The present treatise is devoted mainly to the dynamical aspect of sound. It is accordingly to a great extent mathematical, but the author tried to restrict himself to methods and processes which shall be as simple and direct as is possible.<br>(**6255** views) |
| 3. | **Acoustics And Architecture**<br>by **Paul E. Sabine - McGraw-Hill** , **1932**<br>Contents: Nature and properties of sound; Sustained sound in an |

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| | inclosure; Reverberation theoretical and experimental; Measurement of absorption coefficients; Sound absorption coefficients of materials; Reverberation and the acoustics of rooms; etc.<br>(**18256** views) |
| 4 | **The Physics of Music and Musical Instruments**<br>by **David Lapp - Tufts University** , **2003**<br>The book covers the physics of waves, sound, music, and musical instruments at a high school physics level. A resource for those teaching or learning waves and sound from the middle school through college, at the mathematical or conceptual level.<br>(**11367** views) |
| 5. | **The Physical Basis Of Music**<br>by **E. T. Jaynes - Washington University** , **1996**<br>The main purpose of this book is to explain certain physical considerations useful not only to a beginner learning how to play a musical instrument, but also to an accomplished musician trying to gain full technical mastery of an instrument.<br>(**11430** views) |
| 6. | **The Boundary Element Method in Acoustics**<br>by **Stephen Kirkup - Integrated Sound Software** , **2007**<br>The book is an introduction to the boundary element method (BEM) and its application to acoustic problems. Software implementing the methods is available. Examples of realistic application illustrate the potential of the BEM in acoustic simulation.<br>(**15786** views) |
| 7. | **Engineering Acoustics**<br>**- Wikibooks** , **2006**<br>Engineering acoustics is the study of the generation and manipulation of sound waves, from an engineering perspective. The book describes some of the fundamental principles of acoustics, it requires knowledge of calculus and differential equations.<br>(**12538** views) |
| 8. | **The Theory of Sound, Volume One**<br>by **J. W. S. Rayleigh - MacMillan** , **1894**<br>One of the first books in the field of acoustics, written in a very logical manner, many topics are the research results of Lord Rayleigh himself. Any acoustician who wants to understand physical principles should start with Rayleighs work.<br>(**13820** views) |
| 9. | **Introduction To Sound Processing**<br>by **Davide Rocchesso - Davide Rocchesso** , **2003**<br>This is an introductory book on sound processing. By reading this book, you may expect to acquire some knowledge on the mathematical, algorithmic, and computational tools important in order to become |

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| | proficient sound designer or manipulator.<br>(**13354** views) |
| 10. | **The Sounding Object**<br>by **Davide Rocchesso, Federico Fontana - Mondo Estremo Publishing , 2003**<br>The authors are striving to develop principles that may open the way to get appropriate informative sounds out of future artifacts. They present novel research in perception, physics, numeral analysis, computer science, and human-machine interaction.<br>(**11518** views) |
| 11. | **Vibrations and Waves**<br>by **Benjamin Crowell - lightandmatter.com , 2008**<br>This is a text on vibrations and waves for an introductory college physics class. The treatment is algebra-based, with optional sections of calculus applications. This book is part of the Light and Matter series of introductory physics textbooks.<br>(**15370** views) |

**Dynamics** (13)

| S. No. | Title |
|---|---|
| 1. | **Classical Mechanics and Dynamical Systems**<br>by **Martin Scholtz - Charles University , 2012**<br>Contents: Classical mechanics; Lagrange equations; Hamilton's equations; Variational principle; Hamilton-Jacobi equation; Electromagnetic field; Discrete dynamical systems and fractals; Dynamical systems; Bifurcations; Commands in Mathematica.<br>(**1692** views) |
| 2. | **Classical Dynamics**<br>by **David Tong - University of Cambridge , 2005**<br>We shall describe the advances that took place after Newton when the laws of motion were reformulated using more powerful techniques and ideas developed by some of the giants of mathematical physics: Euler, Lagrange, Hamilton and Jacobi.<br>(**7765** views) |
| 3. | **Dynamics and Relativity**<br>by **David Tong - University of Cambridge , 2012**<br>This is an introductory course on Newtonian mechanics and special relativity given to first year undergraduates. Topics: Forces; Dimensional Analysis; Systems of Particles; Central Forces; Rigid Bodies; Non-Inertial Frames; Special Relativity.<br>(**5763** views) |
| 4. | **Elementary Dynamics: a textbook for engineers**<br>by **Joseph Whittington Landon - Cambridge University Press ,** |

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| | **1920**<br>The book presents the principles of elementary dynamics, and explains the meaning of the physical quantities involved, partly by definition and description, but mainly by worked examples in which formulae have been avoided as far as possible.<br>(**12598** views) |
| 5. | **Applied Gyrodynamics**<br>by **Ervin S. Ferry - John Wiley & Sons** , **1933**<br>A rigorous theoretical and mathematical description of the motion of spinning bodies and practical applications where their gyroscopic properties are used. The book goes into great detail on the theory, design and implementation of applications.<br>(**8636** views) |
| 6. | **Dynamics for Beginners**<br>by **John Bascombe Lock - MacMillan** , **1890**<br>This work explains the elementary principles of Dynamics, illustrating them by numerous easy numerical examples in a manner suitable for use in Schools with boys of ordinary mathematical attainments. This is the third edition of the book.<br>(**7809** views) |
| 7. | **Introduction to Statics and Dynamics**<br>by **Rudra Pratap, Andy Ruina - Cornell University** , **2009**<br>This is an engineering statics and dynamics text intended as both an introduction and as a reference. The book emphasizes use of vectors, free-body diagrams, momentum and energy balance and computation. Intuitive approaches are discussed throughout.<br>(**12219** views) |
| 8. | **The Key to Newton's Dynamics**<br>by **J. Bruce Brackenridge - University of California Press** , **1996**<br>The book clearly explains the surprisingly simple analytical structure that underlies the determination of the force necessary to maintain ideal planetary motion. The author sets the problem in historical and conceptual perspective.<br>(**9952** views) |
| 9. | **Dynamics of Mechanical Systems**<br>by **Janusz Krodkiewski** , **2008**<br>This text provides the students with the theoretical background of the three dimensional mechanics of rigid body and its applications. This part of mechanics is presented in three parts: Modelling, Analysis and Experimental Investigations.<br>(**11902** views) |
| 10. | **Applied Mechanics Dynamics**<br>by **G. W. Housner, D. E. Hudson - California Institute of Technology** , **1980**<br>Textbook for engineering students who wish to prepare for more |

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| | advanced studies of dynamics. The emphasis is on particle and rigid-body dynamics. The book shows how the classical mechanics methods are applied to the various branches of engineering.<br>(**12495** views) |
| 11. | **Newtonian Dynamics**<br>by **Richard Fitzpatrick - Lulu.com** , **2011**<br>Set of lecture notes for an upper-division classical dynamics course: oscillations, Keplerian orbits, two-body scattering, rotation of rigid bodies in three dimensions, Lagrangian mechanics, Hamiltonian mechanics, and coupled oscillations.<br>(**12741** views) |
| 12. | **A Treatise on the Analytical Dynamics of Particles and Rigid Bodies**<br>by **E. T. Whittaker - Cambridge University Press** , **1917**<br>Analytical dynamics studies the motions of material bodies due to the mutual interactions with the aid of mathematical analysis. Here is a famous book on mathematical mechanics, a comprehensive account of the classical results of analytical dynamics.<br>(**13568** views) |
| 13. | **Topics in dynamics I: Flows**<br>by **Edward Nelson - Princeton University Press** , **1969**<br>Lecture notes for a course on differential equations covering differential calculus, Picard's method, local structure of vector fields, sums and Lie products, self-adjoint operators on Hilbert space, commutative multiplicity theory, and more.<br>(**14951** views) |

**General** (25)

| S. No. | Title |
|---|---|
| 1. | **Mechanics and Relativity**<br>by **Timon Idema - TU Delft Open** , **2018**<br>The reader is taken on a tour through time and space. Starting from the basic axioms formulated by Newton and Einstein, the theory of motion at both the everyday and the highly relativistic level is developed without the need of prior knowledge.<br>(**546** views) |
| 2. | **Introduction to Analytical Mechanics**<br>by **Alexander Ziwet - Macmillan** , **1912**<br>The present volume is intended as a brief introduction to mechanics for junior and senior students in colleges and universities. No knowledge of differential equations is presupposed, the treatment of the occurring equations being fully explained.<br>(**1991** views) |

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| 3. | **The Integrals of Mechanics**<br>by **Oliver Clarence Lester - Ginn and company** , **1909**<br>The matter presented is intended to form the introduction to a work on Theoretical Mechanics. The book is intended as a drill book, and the unusual elaboration of the topics, should enable the student to overcome most of his difficulties himself.<br>(**1563** views) |
| 4. | **Elements of Theoretical Mechanics**<br>by **Alexander Ziwet - The Macmillan Company** , **1904**<br>The book may serve to stimulate the study of theoretical mechanics in engineering schools. It is intended to furnish a sufficient basis, on the one hand for the more advanced study of the science, on the other for the study of its applications.<br>(**2385** views) |
| 5. | **Classical Mechanics: a Critical Introduction**<br>by **Michael Cohen - University of Pennsylvania** , **2012**<br>This is an introduction to Classical Mechanics, which many students may find useful as a supplementary resource. Cohen emphasizes basic concepts, such as force and permissible frames of reference, which frequently are dealt with hastily.<br>(**4129** views) |
| 6. | **Classical Mechanics**<br>by **Jeremy Heyl - The University of British Columbia** , **2007**<br>Contents: Linear Motion; Energy and Angular Momentum; The Principle of Least Action; Central Forces; Rotating Frames; Conservative Systems; Many-Particle Systems; Rigid Bodies; Continuum Mechanics; Small Oscillations and Perturbed Motion; etc.<br>(**4021** views) |
| 7. | **Mechanics**<br>by **Stefan Banach - Polish Mathematical Society** , **1951**<br>Contents: Theory Of Vectors; Kinematics Of A Point; Dynamics Of A Material Point; Geometry Of Masses; Systems Of Material Points; Statics Of A Rigid Body; Kinematics Of A Rigid Body; Dynamics Of A Rigid Body; Principle Of Virtual Work; etc.<br>(**5845** views) |
| 8. | **Lecture Notes on Classical Mechanics**<br>by **Daniel Arovas - University of California, San Diego** , **2013**<br>The level of these notes is appropriate for an advanced undergraduate or a first year graduate course in classical mechanics. I have included many worked examples within the notes, as well as in the final chapter, which contains solutions...<br>(**5404** views) |
| 8. | **Test Problems in Mechanics and Special Relativity**<br>by **Z.K. Silagadze - arXiv** , **2010**<br>These test problems were used by the author as weekly control works |

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| | for the first year physics students at Novosibirsk State University in 2005. Solutions of the problems are also given. Written in Russian and English language.<br>(**5388** views) |
| 9. | **Classical Mechanics**<br>by **J. B. Tatum - University of Victoria** , **2013**<br>Contents: Centres of Mass; Moment of Inertia; Systems of Particles; Rigid Body Rotation; Collisions; Motion in a Resisting Medium; Projectiles; Impulsive Forces; Conservative Forces; Rocket Motion; Simple and Damped Oscillatory Motion; etc.<br>(**4174** views) |
| 10. | **Theoretical Mechanics**<br>by **P.F. Smith, W.R. Longley - Ginn & Co.** , **1910**<br>The study of Mechanics as presented in this volume is founded upon a course in mathematics extending through the Calculus. It is assumed, moreover, that the student has already become familiar with the fundamental ideas of force, energy, and work.<br>(**4125** views) |
| 11. | **Funky Mechanics Concepts**<br>by **Eric L. Michelsen - UCSD** , **2013**<br>The purpose is to develop an accurate physical, conceptual, geometric, and pictorial understanding of important mechanics topics, from basic principles through Lagrangian and Hamiltonian mechanics, including rotation, oscillations, and more.<br>(**3866** views) |
| 12. | **Motion and Mass: First Steps into Physics**<br>by **Roy McWeeny - Learning Development Institute** , **2011**<br>From these simple ideas about mass and motion, and a few experiments that anyone can do, we can lay the foundations of Physics: they are expressed mathematically in the 'laws of motion', which form the starting point for the Physical Sciences.<br>(**5144** views) |
| 13. | **General Mechanics**<br>**- Wikibooks** , **2011**<br>General mechanics introductory text for physics and engineering students with a background in calculus. Contents: Newton's Laws: First principles; Rotational Dynamics; Newton's Laws: A second look; Harmonic Oscillators; etc.<br>(**5439** views) |
| 14. | **A Short Course in Elementary Mechanics for Engineers**<br>by **Clifford Newton Mills - D. Van Nostrand Company** , **1916**<br>This course in Elementary Mechanics is arranged for students who have previously studied Trigonometry. The subject matter is divided into three parts, namely, Kinematics, Kinetics, and Statics. Much |

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| | detailed discussion is omitted.<br>(**15941** views) |
| 15. | **Mechanics: A Textbook for Engineers**<br>by **James E. Boyd - McGraw-Hill** , **1921**<br>This book is intended to give a working knowledge of the principles of Mechanics and to supply a foundation upon which study of Strength of Materials, Stresses in Structures, Machine Design, and other courses of more technical nature may rest.<br>(**8976** views) |
| 16. | **Analytical Mechanics for Engineers**<br>by **Fred B. Seely - J. Wiley & sons** , **1921**<br>This book presents those principles of mechanics that are believed to be essential for the student of engineering. Throughout the book the aim has been to make the principles of mechanics stand out clearly ; to build them up from common experience.<br>(**14410** views) |
| 17. | **Mechanics for Engineers**<br>by **Arthur Morley - Longmans** , **1905**<br>The aim of this book is to provide a suitable course in the principles of Mechanics for engineering students. More prominence than usual has been given to such parts of the subject as energy, work of forces and torques, power, and graphical statics.<br>(**8785** views) |
| 18. | **Applied Mechanics for Engineers**<br>by **John Duncan - Macmillan and co** , **1913**<br>The author's object in writing this book has been to provide a practical statement of the principles of Mechanics. Principles have been illustrated by numerous fully worked-out examples, and exercises for home or class work have been provided.<br>(**10029** views) |
| 19. | **Mechanics: Problems for Engineering Students**<br>by **Frank Berry Sanborn - J. Wiley & sons** , **1906**<br>The book presents many practical problems together with brief definitions and solutions of typical problems which should help the student to follow this advice: "Learn for yourself, think for yourself, make yourself master of principles".<br>(**14056** views) |
| 20. | **Newton's Principia : the mathematical principles of natural philosophy**<br>by **Isaac Newton - Daniel Adee** , **1846**<br>This book is a complete volume of Newton's mathematical principles relating to natural philosophy and his system of the world. Newton, one of the most brilliant scientists and thinkers of all time, presents his theories, formulas and thoughts.<br>(**8754** views) |

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| 21. | **Mechanics for Beginners**<br>by **Isaac Todhunter - Macmillan and co** , **1887**<br>The work forms an elementary treatise on demonstrative mechanics. The author provides an introduction to the study of applied as well as of theoretical Mechanics. Great care was taken to assume the smallest possible knowledge of pure mathematics.<br>(**6843** views) |
| 22. | **Mechanics**<br>by **William Fogg Osgood - The MacMillan Company** , **1937**<br>The book is adapted to the needs of a first course in Mechanics, given for sophomores, and culminating in a thorough study of the dynamics of a rigid body. Hamilton's Equations and their solution by means of Jacobi's Equation are also included.<br>(**8551** views) |
| 23. | **Classical Mechanics: An introductory course**<br>by **Richard Fitzpatrick - Lulu.com** , **2007**<br>A set of lecture notes for an lower-division classical mechanics course. Covered are one- and three-dimensional motion, Newton's laws, energy and momentum conservation, rotational motion, statics, planetary motion, oscillations, and wave motion.<br>(**14254** views) |
| 24. | **Mechanics**<br>by **Benjamin Crowell - LightAndMatter.com** , **2017**<br>This is a calculus-based book meant for the first semester of the type of freshman survey course taken by engineering and physical science majors. A little relativity is interspersed with the Newtonian mechanics, in optional sections.<br>(**11924** views) |

**Lagrangian** (6)

| S. No. | Title |
|---|---|
| 1. | **Lagrangian Mechanics**<br>by **Huseyin Canbolat - InTech** , **2017**<br>Lagrangian mechanics is widely used in several areas of research and technology. It is simply a reformulation of the classical mechanics by the mathematician Joseph-Louis Lagrange in 1788. Since then, this approach has been applied to various fields.<br>(**1871** views) |
| 2. | **Lagrangian and Hamiltonian Geometries: Applications to Analytical Mechanics**<br>by **Radu Miron - arXiv** , **2011**<br>The aim is to provide a compendium of Lagrangian and Hamiltonian geometries and to introduce and investigate new analytical Mechanics: Finslerian, Lagrangian and Hamiltonian. The fundamental equations |

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| | are derived from the variational calculus ...<br>(**2350** views) |
| 3. | **An Introduction to Lagrangian and Hamiltonian Mechanics**<br>by **Simon J.A. Malham - Heriot-Watt University** , **2016**<br>These notes are intended as an elementary introduction into the ideas and the basic prescription of Lagrangian and Hamiltonian mechanics. The only physical principles we require the reader to know are Newton's three laws ...<br>(**2928** views) |
| 4. | **An Introduction to Lagrangian Mechanics**<br>by **Alain J. Brizard - Saint Michael's College, Colchester** , **2007**<br>These lecture notes provide a self-consistent introduction to Classical Mechanics. They are normally used for an intermediate course in Classical Mechanics by inserting a more general and rigorous introduction to Lagrangian and Hamiltonian methods.<br>(**4111** views) |
| 5. | **Lecture notes on Mather's theory for Lagrangian systems**<br>by **Alfonso Sorrentino - arXiv** , **2010**<br>In these lecture notes we shall try to to provide a brief, but comprehensive introduction to Mather's theory for Lagrangian systems and its subsequent developments by Ricardo Mane and Albert Fathi. We shall consider only the autonomous case.<br>(**7451** views) |
| 6. | **Lagrangian Mechanics, Dynamics, and Control**<br>by **Andrew D. Lewis - Queen's University** , **2004**<br>These notes deal primarily with the subject of Lagrangian mechanics. The control theory we discuss here is quite elementary, it will serve to give a flavour of the subject so that people can see if the area is one which they'd like to pursue.<br>(**9159** views) |

**Oscillations & Waves** (12)

| S. No. | Title |
|---|---|
| **1.** | **Elementary Physics II: Oscillations, Waves**<br>by **Satindar Bhagat - Bookboon** , **2014**<br>We begin by discussing waves in matter - sound being a special case. To understand the nature of light we begin by introducing Electric and Magnetic fields and build the relationships which develop into the Maxwell's Electromagnetic Field Equations.<br>(**3427** views) |
| **2.** | **The Physics of Ocean Waves**<br>by **Michael Twardos - SurfLibrary.org** , **2004**<br>This text is intended to be a general but comprehensive overview on |

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| | physical phenomena associated with the marine environment. The author provides his own perspective on this field from his particular experiences and training.<br>(**4140** views) |
| **3.** | **Oscillations, Waves, and Interactions**<br>by **Thomas Kurz, Ulrich Parlitz, Udo Kaatze - Universitätsverlag Göttingen** , **2007**<br>The subjects covered vary from speech and hearing research to flow control and active control systems, from bubble oscillations to cavitation structures, from ordering phenomena in liquids and solids to complex dynamics of chaotic nonlinear systems.<br>(**6405** views) |
| **4.** | **Lectures on Wave Propagation**<br>by **G.B. Whitham - Tata Institute of Fundamental Research** , **1979**<br>The first three chapters provide basic background on the theory of characteristics and shock waves. The main content is an entirely new presentation. It is on water waves, with special emphasis on old and new results for waves on a sloping beach.<br>(**5360** views) |
| **5.** | **Waves**<br>**- Wikibooks** , **2012**<br>The wave is a physical phenomenon that is found in a variety of contexts. The purpose of this text is to describe the kinematics of waves, i.e., to provide tools for describing the form and motion of all waves irrespective of their mechanisms.<br>(**6393** views) |
| **6.** | **Surface Waves**<br>by **John V. Wehausen, Edmund V. Laitone - Springer** , **1960**<br>Since its first publication this article has been an inspirational resource for students and researchers in the various fields of science and engineering. This may be attributed to its encyclopedic scope and to the scholarly efforts of the authors.<br>(**8269** views) |
| **7.** | **The Physics of Waves**<br>by **Howard Georgi - Prentice Hall** , **2007**<br>The first complete introduction to waves and wave phenomena by a renowned theorist. Covers damping, forced oscillations and resonance; normal modes; symmetries; traveling waves; signals and Fourier analysis; polarization; diffraction.<br>(**8315** views) |
| **8.** | **Waves**<br>by **C. A. Coulson - Oliver And Boyd** , **1941**<br>The object of this book is to consider from an elementary standpoint as many different types of wave motion as possible. In almost every case the fundamental problem is the same, since it consists in solving the |

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| | standard equation of wave motion.<br>(**8634** views) |
| **9.** | **Wave Propagation in Materials for Modern Applications**<br>by **Andrey Petrin - InTech** , **2010**<br>The advances in nanotechnology give rise new types of materials with unique properties. This book is devoted to the modern methods in electrodynamics and acoustics, developed to describe wave propagation in these modern materials and nanodevices.<br>(**9609** views) |
| **10.** | **Water Waves: The Mathematical Theory With Applications**<br>by **J. J. Stoker - Interscience Publishers** , **1957**<br>Offers an integrated account of the mathematical hypothesis of wave motion in liquids with a free surface, subjected to gravitational and other forces. Uses both potential and linear wave equation theories, together with applications.<br>(**9410** views) |
| **11.** | **Mechanical Vibration**<br>by **Janusz Krodkiewski** , **2008**<br>Introduction to the theory of vibrations of mechanical systems. First part, Modelling and Analysis, is devoted to this solution that can be approximated by the linear models. The second part is on experimental investigations.<br>(**12382** views) |
| **12.** | **Vibrations and Waves**<br>by **Benjamin Crowell - lightandmatter.com** , **2008**<br>This is a text on vibrations and waves for an introductory college physics class. The treatment is algebra-based, with optional sections of calculus applications. This book is part of the Light and Matter series of introductory physics textbooks.<br>(**15370** views) |

## Engineering Reference (49)

| S. No. | Title |
|---|---|
| **1.** | **Past and Present Energy Societies**<br>by **Nina Möllers, Karin Zachmann - De Gruyter Open** , **2014**<br>Focussing on a range of energy types, this volume analyzes the social, cultural and political concepts of energy and their implementation and materialization within technical systems, applications, media representations and consumer practice.<br>(**1572** views) |
| **2.** | **Introduction to Linear, Time-Invariant, Dynamic Systems for Students of Engineering**<br>by **William Hallauer - Virginia Tech** , **2016** |

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| | This is a formal college engineering textbook, complete with homework problems. It will be understandable for students of engineering system dynamics, a valuable teaching resource for course instructors, and a useful reference for self-study.<br>(**2084** views) |
| **3.** | **Engineering Societies and Undergraduate Engineering Education**<br>**- National Academy of Engineering , 2017**<br>Engineering societies work largely independently on undergraduate education. To explore the potential for enhancing societies role, National Academy of Engineering held a workshop on the engagement of engineering societies in undergraduate education.<br>(**1569** views) |
| **4.** | **High School Engineering**<br>**- Wikibooks , 2010**<br>This textbook introduces engineering techniques and practices to high school students. The goals of this book are to help students gain an appreciation for engineering and its role throughout human history, and understand what engineers do.<br>(**2075** views) |
| **5.** | **Geothermal Energy: Delivering on the Global Potential**<br>by **Paul L. Younger (ed.) - MDPI AG , 2015**<br>After decades of being largely the preserve of countries in volcanic regions, the use of geothermal energy is now expanding worldwide. This reflects its excellent low-carbon credentials and its ability to offer baseload and dispatchable output.<br>(**2233** views) |
| **6.** | **The Art of Insight in Science and Engineering: Mastering Complexity**<br>by **Sanjoy Mahajan - The MIT Press , 2014**<br>Sanjoy Mahajan shows us that the way to master complexity is through insight rather than precision. He first teaches the tools for organizing complexity, then distinguishes two paths for discarding complexity: with and without loss of information.<br>(**4454** views) |
| **7.** | **Concise Reliability for Engineers**<br>by **Jaroslav Mencik (ed.) - InTech , 2016**<br>Our life is strongly influenced by the reliability of the things we use, as well as of processes and services. Methods for reliability assessment and optimization are thus very important. This book explains the fundamental concepts and tools.<br>(**3056** views) |
| **8.** | **Teaching Engineering**<br>by **Phillip C. Wankat, Frank S. Oreovicz - Purdue University , 2007**<br>This book covers all aspects of teaching engineering and other technical subjects. It presents both practical matters and educational theories. It is |

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| | organized to start with practical teaching applications and then leads to educational theories.<br>(**2838** views) |
| **9.** | **Blueprint Reading and Sketching**<br>by **D. S. Gunderson (ed.) - Maritime.org** , **1994**<br>Upon completing this training course, you should understand the basics of blueprint reading including projections and views, technical sketching, and the use of blueprints in the construction of machines, piping, electrical and electronic systems ...<br>(**2451** views) |
| **10.** | **Entertainment Engineering**<br>by **John W. Wesner - ETC Press** , **2013**<br>We look at the entertainment industry in general, with a focus on delighting the customers. We ask what is unique about the domain Entertainment, we look at the broad scope of Entertainment, and ask the reader about their entertainment preferences.<br>(**3193** views) |
| **11.** | **Beginner's Guide to Engineering Drawing**<br>by **E. R. Latifee** , **2008**<br>This is a book for beginners in engineering drawing in any engineering. Contents: Review of Geometry; Classical Viewing; Dimensioning, Line Types and Other Views; Development of solids and Others; Lessons in AutoCAD; Sample Questions and Exercises.<br>(**2982** views) |
| **12.** | **Modeling Reactive Systems with Statecharts**<br>by **D. Harel, M. Politi - McGraw-Hill** , **1998**<br>The book provides a detailed description of a set of languages for modelling reactive systems, which underlies the STATEMATE toolset. The approach is dominated by the language of Statecharts, used to describe behavior, combined Activity-charts ...<br>(**2602** views) |
| **13.** | **Extension Engineering**<br>by **Yang Chunyan, Cai Wen - Science Press** , **2012**<br>The book systematically elaborates the theoretical foundation, methodology and fields of application of extension engineering and presents application cases. The characteristics of the book lie in its combination of theory with practice.<br>(**3306** views) |
| **14.** | **Storage Stability of Fuels**<br>by **Krzysztof Biernat (ed.) - InTech** , **2015**<br>This book presents an analysis of the results of studies of motor fuels ageing, conducted in laboratory and model conditions, in terms of building a system operating on-line, allowing continuous assessment of the operational usability of fuels.<br>(**3695** views) |

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| **15.** | **Engineering Reliability: New Techniques and Applications**<br>by **B. S. Dhillon, Chanan Singh - John Wiley & Sons** , **1981**<br>The scope of reliability engineering is extremely wide, encompassing many areas of engineering technology. Reliability engineering helps ensure the success of space missions, maintain the national security, provide reliable transportation, and so on.<br>(**3179** views) |
| **16.** | **The WRTI Book of Practical Inventing**<br>by **Alan Finn - Bookboon** , **2014**<br>This book is intended to be a guide to all those inventors, actual or would-be, those who have yet to take their first real steps toward making their new product dreams come true. WRTI is an inventors club based at Southampton Solent University.<br>(**3141** views) |
| **17.** | **Boundary Element Methods for Engineers**<br>by **Roger Fenner - Bookboon** , **2014**<br>The book offers a deliberately simple introduction to boundary element methods applicable to a wide range of engineering problems. The mathematics are kept as simple as reasonably possible. Several boundary element computer programs are presented.<br>(**3961** views) |
| **18.** | **Optimization Methods for Engineering Design**<br>by **A.R. Parkinson, R.J. Balling, J.D. Hedengren - Brigham Young University** , **2013**<br>In this text we discuss a computer-based approach to design optimization, to search for the best design according to criteria that we specify. Further, we employ sophisticated algorithms that enable the computer to efficiently search for the optimum.<br>(**3683** views) |
| **19.** | **Fundamental Engineering Optimization Methods**<br>by **Kamran Iqbal - Bookboon** , **2013**<br>This book is addressed to engineering students and practicing engineers. It covers the fundamentals of commonly used optimization methods in engineering design. These include graphical optimization, linear and nonlinear programming, etc.<br>(**5997** views) |
| **20.** | **Profit Signals: How Evidence Based Decisions Power Six Sigma Breakthroughs**<br>by **M. Daniel Sloan, Russell A. Boyles - Evidence-Based Decisions, Inc.** , **2003**<br>A pioneering Six Sigma work written by two internationally recognized Master Black Belts. The authors present a unique view on how executives, managers and Six Sigma practitioners can use evidence to make better, more profitable decisions.<br>(**5663** views) |

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| **21.** | **Engineering Tables**<br>**- Wikibooks** , **2012**<br>This is a shared appendix with tables for use in book on engineering, math and science. Topics: Integral Transforms; Mathematical Tables; Statistical Tables; Mechanical Engineering; Electrical and Electronic Engineering; Computer Engineering.<br>(**5508** views) |
| **22.** | **Introduction to Computational Engineering**<br>by **Steven J Cox - Rice University** , **2012**<br>We strive to speak the Matlab language free of syntactic error, to confidently translate English simulation and/or design questions, to identify the proper numerical method for the job, and to represent the solution in a visually striking way.<br>(**5844** views) |
| **23.** | **Engineering a Safer World: Systems Thinking Applied to Safety**<br>by **Nancy G. Leveson - The MIT Press** , **2012**<br>Revisiting and updating ideas pioneered by 1950s aerospace engineers, and testing her new model extensively on real-world examples, Leveson has created a new approach to safety that is more effective and easier to use than current techniques.<br>(**9041** views) |
| **24.** | **MATLAB for Engineers: Applications in Control, Electrical Engineering, IT and Robotics**<br>by **Karel Perutka - InTech** , **2011**<br>The book presents several approaches in the key areas of practice for which the MATLAB software package was used. It will be of great interest to control and electrical engineers and students in the fields of research the book covers.<br>(**7441** views) |
| **25.** | **Mathematical Methods**<br>by **Mihir Sen, Joseph M. Powers - University of Notre Dame** , **2010**<br>Multidimensional calculus, linear analysis, linear operators, vector algebra, ordinary differential equations. Directed at first year graduate students in engineering and undergraduates who wish to become better prepared for graduate studies.<br>(**18175** views) |
| **26.** | **Engineering Statistics and Quality Control**<br>by **Irving W. Burr - McGraw-Hill** , **1953**<br>The present book is the outgrowth of a course in statistics for engineers which has been given at Purdue University. The book is written primarily as a text book for junior, senior, and graduate students of engineering and physical science.<br>(**8798** views) |
| **27.** | **The Calculus for Engineers**<br>by **John Perry - E. Arnold** , **1897** |

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| | This book describes what has for many years been the most important part of the regular college course in the Calculus for Mechanical and Electrical Engineering students. The students knew only the most elementary mathematics.<br>(**8815** views) |
| **28.** | **Higher Mathematics for Engineers and Physicists**<br>by **Ivan S. Sokolnikoff - McGraw Hill** , **1941**<br>The chief purpose of the book is to help to bridge the gap which separates many engineers from mathematics by giving them a bird's-eye view of those mathematical topics which are indispensable in the study of the physical sciences.<br>(**20011** views) |
| **29.** | **Handbook of Mathematics for Engineers**<br>by **E. V. Huntington, L. A. Fischer - McGraw Hill** , **1918**<br>The Handbook contains, in compact form, accurate statements of those facts and formulas of mathematics which are likely to be useful to the worker in applied mathematics. It is thought to be more comprehensive than any other similar work in English.<br>(**19821** views) |
| **30.** | **Arithmetic for Engineers**<br>by **Charles B. Clapham - Chapman & Hall** , **1925**<br>This book is an endeavour to treat the elementary portions of Practical Mathematics in a thorough and practical manner and with a sufficient amount of engineering application, suitable for elementary students of technical schools and for home study.<br>(**13394** views) |
| **31.** | **Mathematics for Engineers**<br>by **William Neville Rose - Chapman** , **1922**<br>These two volumes form a most comprehensive and practical treatise on the subject. They show the direct bearing of all principles to engineering practice, and will prove a valuable reference work embracing all the mathematics needed by engineers.<br>(**11429** views) |
| **32.** | **Geology for Engineers**<br>by **Robert Fox Sorsbie - Griffin** , **1911**<br>A knowledge of geology is of the first importance to the practical engineer. The author compiled the requisite information in a clear and concise manner in one volume, in the hope that it may serve as a handy book of reference.<br>(**17952** views) |
| **33.** | **Practical Astronomy for Engineers**<br>by **Frederick Hanley Seares - Stephens** , **1909**<br>The main purpose of the volume is an exposition of the principal methods of determining latitude, azimuth, and time. Generally speaking, the limit |

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| | of precision is that corresponding to the engineer's transit or the sextant.<br>(**12090** views) |
| **34.** | **Functional and Structured Tensor Analysis for Engineers**<br>by **R. M. Brannon - The University of Utah** , **2003**<br>A step-by-step introduction to tensor analysis that assumes you know nothing but basic calculus. Considerable emphasis is placed on a notation style that works well for applications in materials modeling, but other notation styles are also reviewed.<br>(**9044** views) |
| **35.** | **Mathematics For Engineering Students**<br>by **Samuel Keller - D. Van Nostrand Company** , **1908**<br>Much that is ordinarily included in treatises on Analytics and Calculus, has been omitted from this book, not because it was regarded as worthless, but because it was considered quite unnecessary for the student of engineering.<br>(**9934** views) |
| **36.** | **Science For Coalmining Students**<br>by **H. Morton, D. S. Morton - The Technical Press** , **1952**<br>The book, which is interesting, instructive and wide in scope, is the result of many years of experience in teaching science to mining students on the part of one of the authors and several years' practical experience underground by the other.<br>(**6358** views) |
| **37.** | **Shape Interrogation for Computer Aided Design and Manufacturing**<br>by **Nicholas M. Patrikalakis, Takashi Maekawa - Springer** , **2009**<br>Shape interrogation is the process of extraction of information from a geometric model. It is a fundamental component of CAD/CAM systems. The authors focus on shape interrogation of geometric models bounded by free-form surfaces.<br>(**9602** views) |
| **38.** | **The Data Analysis BriefBook**<br>by **Rudolf K. Bock, Werner Krischer - Springer** , **2010**<br>A condensed handbook, or an extended glossary, written in encyclopedic format, covering subjects in statistics, computing, analysis, and related fields. It intends to be both introduction and reference for data analysts, scientists and engineers.<br>(**9586** views) |
| **39.** | **Engineering Statistics Handbook**<br>**- NIST/SEMATECH** , **2003**<br>The goal of this handbook is to help scientists and engineers incorporate statistical methods in their work as efficiently as possible. Many parts of the book feature case studies or examples with computations from the free downloadable software.<br>(**13085** views) |

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| **40.** | **An Exploration of Random Processes for Engineers**<br>by **Bruce Hajek - University of Illinois at Urbana-Champaign** , **2009**<br>These notes were written for a graduate course on random processes. Students are assumed to have had a previous course in probability, some familiarity with real analysis and linear algebra, and some familiarity with complex analysis.<br>(**9789** views) |
| **41.** | **An Introduction to Solving Engineering Problems with Matlab**<br>by **Darryl Morrell - CK-12 Foundation** , **2009**<br>Matlab is a language used by several computational packages known as m-file environments. This text introduces freshman engineering students to problem solving using an m-file environment. Most of the information applies to any environment.<br>(**11230** views) |
| **42.** | **Physics Formulary**<br>by **Johan Wevers** , **2008**<br>This 108 pages document contains a lot of equations in physics. It is written at advanced undergraduate/postgraduate level. It is intended to be a short reference for anyone who works with physics and often needs to look up equations.<br>(**21882** views) |
| **43.** | **Mathematics Formulary**<br>by **Johan Wevers** , **2008**<br>A 66 pages mathematics formulary that is intended for physicists and engineers: Basics; Probability and statistics; Calculus; Differential equations; Linear algebra; Complex function theory; Tensor calculus; Numerical mathematics.<br>(**10452** views) |
| **44.** | **Handbook of Mathematical Functions**<br>by **M. Abramowitz, I. A. Stegun - GPO** , **1964**<br>Students and professionals in the fields of mathematics, physics, engineering, and economics will find this reference work invaluable. A classic resource for special functions, standard trig, and exponential logarithmic definitions and extensions.<br>(**26039** views) |
| **45.** | **Notes on Diffy Qs: Differential Equations for Engineers**<br>by **Jiří Lebl - Lulu.com** , **2017**<br>One semester introductory course on differential equations aimed at engineers. The book covers first order ODEs, higher order linear ODEs, systems of ODEs, Fourier series and PDEs, eigenvalue problems, and the Laplace transform.<br>(**34392** views) |
| **46.** | **Fundamental Numerical Methods and Data Analysis**<br>by **George W. Collins, II - NASA ADS** , **2003**<br>'Fundamental Numerical Methods and Data Analysis' can serve as the |

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| | basis for a wide range of courses that discuss numerical methods used in science. The author provides examples of the more difficult algorithms integrated into the text.<br>(**11258** views) |
| **47.** | **Mathematical Methods of Engineering Analysis**<br>by **Erhan Cinlar, Robert J. Vanderbei** , **2000**<br>This text covers general notions regarding sets, functions, sequences, and series; metric spaces, convergence, continuity, approximations; functions on metric spaces; differential and integral equations; convex analysis; measure and integration.<br>(**11819** views) |
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