

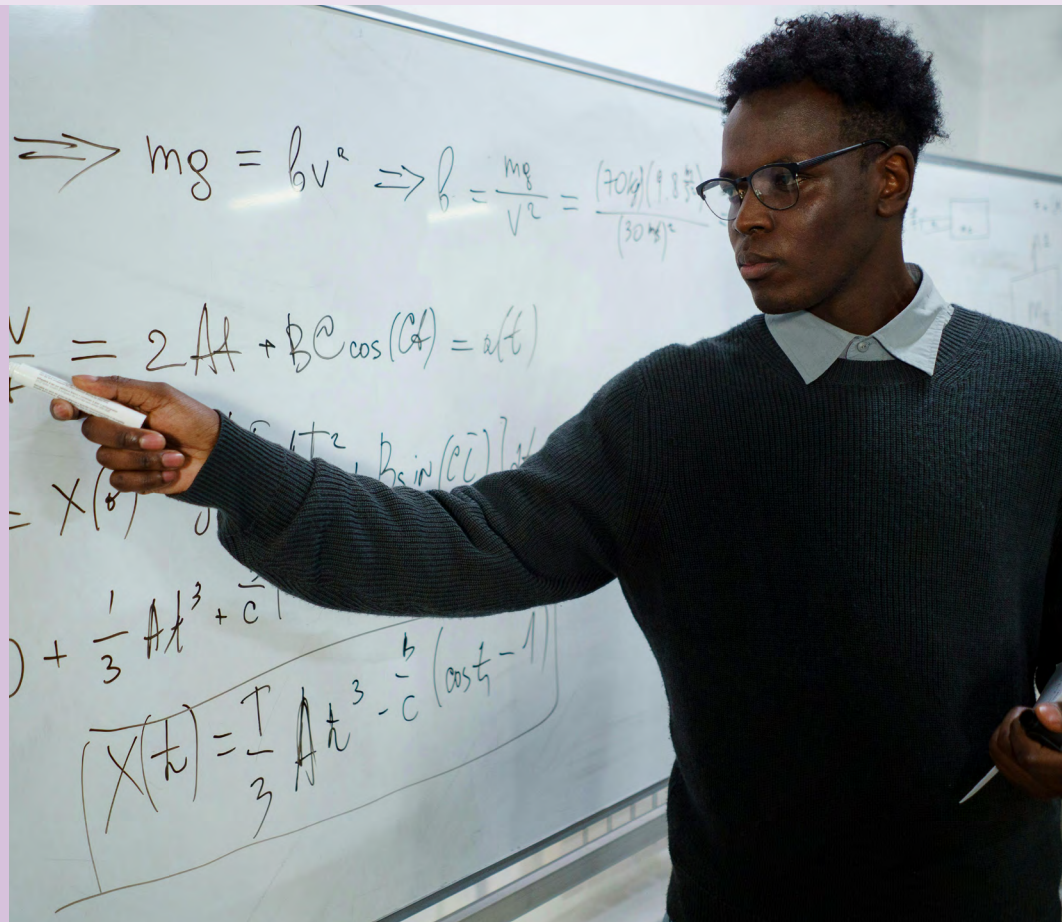
April 2025

Engineering mathematics:

An online reading list from the IET Library



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Contents

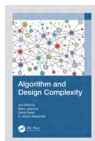
eBooks

- [Mathematics](#)
- [Physics](#)
- [Quantum](#)
- [Reference guides](#)

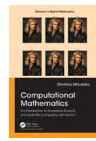
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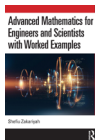
Mathematics



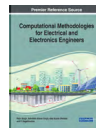
Algorithm and Design Complexity, Anli Sherine et al. (2023). Includes computational procedures and topics including divide-and-conquer, dynamic programming, and backtracking.



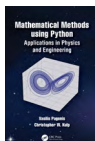
Computational Mathematics : An Introduction to Numerical Analysis and Scientific Computing with Python, Dimitrios Mitsotakis. (2023). This textbook is a comprehensive introduction to computational mathematics and scientific computing.



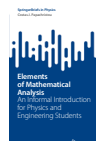
Advanced Mathematics for Engineers and Scientists with Worked Examples, Shefiu Zakariyah. (2025). Covers core to advanced topics in mathematics required for science and engineering disciplines and provides a comprehensive presentation of mathematical concepts to engineers and scientists.



Computational Methodologies for Electrical and Electronics Engineers, Rajiv Singh et al. (2021). Features research on a wide range of topics such as artificial neural networks, smart grids, and soft computing.



Mathematical Methods Using Python : Applications in Physics and Engineering, Vasilis Pagonis and Christopher Wayne Kulp. (2024). This advanced undergraduate textbook presents a new approach to teaching mathematical methods for scientists and engineers.



Elements of Mathematical Analysis : An Informal Introduction for Physics and Engineering Students, Costas J. Papachristou. (2024). This book provides a comprehensive yet informal introduction to differentiating and integrating real functions with one variable.

Physics



AI for Physics, Volker Knecht. (2023). Written in accessible language this book provides an overview of the wide and varied applications of AI across the spectrum of physical sciences.



Mechanics Of Functional Materials, Jiashi Yang. (2023). Presents a systematic treatment of the three-dimensional theories for these coupled phenomena and the corresponding onedimensional models for extension, torsion and bending.



Building Physics - Heat, Air and Moisture : Fundamentals, Engineering Methods, Material Properties and Exercises, Hugo S. L. Hens. (2024). This book deals with heat, air and moisture transport in building parts or assemblies and whole buildings with emphasis on the building engineering applications.

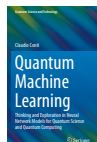
Quantum



Quantum Computing Algorithms : Discover How a Little Math Goes a Long Way, Barry Burd. (2023). Explore essential quantum computing algorithms and master concepts intuitively with minimal math expertise required.



Introduction to Quantum Algorithms, Johannes A. Buchmann. (2024). This book offers a mathematically precise exploration of quantum algorithms, accessible to those with a basic mathematical university education, while also catering to more experienced readers.



Quantum Machine Learning : Thinking and Exploration in Neural Network Models for Quantum Science and Quantum Computing, Claudio Conti. (2024). This book is essential reading for researchers who want to develop both the requisite physics and coding knowledge to understand the interplay of quantum mechanics and machine learning.



Foundations of Quantum Programming, Mingsheng Ying. (2024). This book discusses how programming methodologies and technologies developed for current computers can be extended for quantum computers and effectively exploit the unique power of quantum computing.

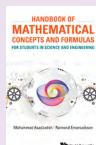
Reference guides



100 Integrals : Solutions and Engineering Applications, Mehrzad Tabatabaian. (2023). Contains a collection of integrals, some more challenging than others, with their worked-out solutions as indefinite integrals.



Mathematical Formulas and Scientific Data : A Quick Reference Guide, C. P. Kothandaraman. (2023). Designed as a quick reference guide for engineers, mathematicians, scientists, and industry professionals.



Handbook Of Mathematical Concepts and Formulas for Students in Science and Engineering, Mohammad Asadzadeh and Reimond Emanuelsson. (2024). This book is a comprehensive collection of the main mathematical concepts, including definitions, theorems, tables, and formulas, that students will encounter in their studies.



Ugly's Electrical References, Charles R. Miller. (2023). The standard on-the-job reference tool of choice for electrical industry professionals, offering the most pertinent, up-to-date information used by electricians.

eJournals

Mathematical Programming. (Looks at theoretical, computational and applicational aspects of mathematical programming.)

Mathematics of Control, Signals and Systems (MCSS). (Covers areas of mathematical system theory, control theory and signal processing.)

Foundations of Computational Mathematics. (Promotes understanding of the connection between mathematics and computation.)

Studies in applied mathematics. (Explores the interplay between mathematics and the applied disciplines.)

Journal of Applied Mathematics. (Publishes research papers and review articles in all areas of applied, computational, and industrial mathematics.)