

## Engineering mathematics: An online reading list from the IET Library



These eBooks and eJournals, available via the [IET Virtual Library](#), have been selected on the topic of engineering mathematics. They cover computational mathematics, physics, and essential reference guides.



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# eBooks

## Computational 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.



[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.



[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.

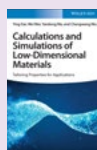


[Battery Management Algorithm for Electric Vehicles, Rui Xiong. \(2020\)](#). This book systematically introduces readers to the core algorithms of battery management system (BMS) for electric vehicles.

## 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.



[Calculations and Simulations of Low-Dimensional Materials : Tailoring Properties for Applications, Ying Dai et al. \(2022\)](#). A comprehensive guide to methods for calculating and simulating the properties of low-dimensional materials.



[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.



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

## 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.



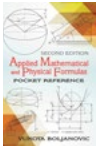
**Electricity Cost Modeling Calculations : Regulations, Technology, and the Role of Renewable Energy, Monica Greer. (2022).** This book delivers an updated view on pricing models, regulation, technology and the role renewable energy is starting to take in electricity.



**Advanced Engineering Mathematics : A Second Course with MatLab, Dean G. Duffy. (2022).** Presents a wide variety of topics needed by today's engineers with questions and answers for self-assessment.



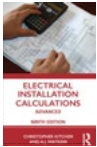
**Mathematical Formulas and Scientific Data : A Quick Reference Guide, C. P. Kothandaraman. (2023).** Designed as a quick reference guide for engineers, mathematicians, scientists, and industry professionals.



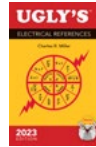
**Applied Mathematical and Physical Formulas, Yukota Boljanovic. (2015).** Covers the fundamentals of arithmetic, algebra, geometry, trigonometry, and analytical geometry, and statistics.



**Mathematics Pocket Book for Engineers and Scientists, John Bird. (2020).** This compendium of essential formulae, definitions, tables and general information provides the mathematical information required by engineers.



**Electrical Installation Calculations : Advanced, Christopher Kitcher. (2022).** The advanced calculations have been set out simply with worked examples, along with additional questions and answers.



**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.)

**Mathematical Problems in Engineering.** (Engineering research carried out using mathematical tools.)

**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.)