IET — The Institution of Engineering and Technology

Engineering mathematics:

An online reading list from the IET Library

These eBooks and eJournals, available via the **IET Library,** have been selected on the topic of engineering mathematics. They cover computational mathematics, physics, and essential reference guides.

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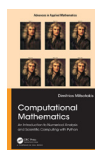
Contents

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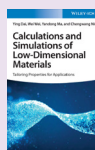
Calculations and Simulations of Low-Dimensional Materials : Tailoring Properties for Applications, Ying Dai et al. (2022). A comprehensive guide to methods for calculating and simulating the properties of low-dimensional materials.

**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
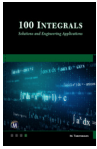
100 Integrals : Solutions and Engineering Applications, Mehrzad Tabatabaian. (2023). Contains a collection of integrals, some more challenging than others, with their worked-out solutions as indefinite integrals.
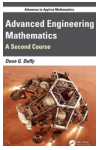
Advanced Engineering Mathematics : A Second Course with MatLab, Dean G. Duffy. (2022). Presents a wide variety of topics needed by today's engineers with questions and answers for self-assessment.
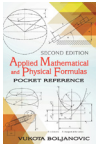
Applied Mathematical and Physical Formulas, Vukota Boljanovic. (2015). Covers the fundamentals of arithmetic, algebra, geometry, trigonometry, and analytical geometry, and statistics.

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

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.

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.

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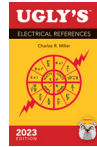
Ugly's Electrical References, Charles R. Miller. (2023). The standard on-the-job reference tool of choice for electrical industry professionals, offering the most pertinent, up-to-date information used by electricians.

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.)