

Taylor & Francis

College Textbooks
Engineering



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Autodesk Inventor 2023 Essentials Plus



Daniel T. Banach, Shawna Lockhart

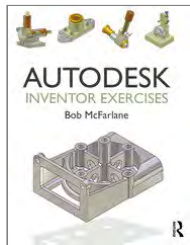
Autodesk Inventor 2023 Essentials Plus provides the foundation for a hands-on course that covers basic and advanced Autodesk Inventor features used to create, edit, document, and print parts and assemblies. You learn about part and assembly modeling through real-world exercises. It covers critical CAD concepts, from basic sketching and modeling through advanced modeling techniques, as it equips you with the skills to master this powerful professional tool.

SDC Publications
August 2022:550
Pb: 978-1-630-57510-6: £65

* For full contents and more information, visit: www.routledge.com/9781630575106

Autodesk Inventor Exercises

for Autodesk® Inventor® and Other Feature-Based Modelling Software



Bob McFarlane

This practical resource provides a series of Inventor® exercises covering several 'topics' including: sketches; part models; assemblies; drawing layouts; presentations; sheet metal design; welding. For users with some familiarity with Autodesk® Inventor, or other similar Feature Based Modelling software such as Solid Works, CATIA, Pro/ENGINEER and Creo Parametric, and who want to become proficient. Exercises are set out in a structured way and are suitable for releases of Inventor from versions 7 to 13.

Routledge
April 2017:434
Hb: 978-1-138-42898-0: £175
Pb: 978-1-138-84918-1: £46.99
eBook: 978-1-315-72580-2

* For full contents and more information, visit: www.routledge.com/9781138849181

2ND EDITION

Engineering Applications of Pneumatics and Hydraulics



Ian C. Turner

Requiring only a very basic knowledge of the physics of fluids, this book provides a sound understanding of fluid power systems and their uses. It takes a strongly practical approach and covers maintenance and trouble-shooting, with a particular emphasis on safety systems and regulations. This second edition completely updates the guidance on safety legislation, codes of practice, technical standards and standardisation organisations, reflecting advances in technology. It is written for students from Levels 3 to 5, and for a wide range of practising engineers: especially plant, operations, and measurement and control engineers.

Routledge
August 2020:184
Hb: 978-0-367-46085-3: £79.99
Pb: 978-0-367-46084-6: £44.99
eBook: 978-1-003-02681-5

* For full contents and more information, visit: www.routledge.com/9780367460846

7TH EDITION

Engineering Science



William Bolton

Engineering Science is a comprehensive textbook for all vocational and pre-degree courses at Level 2 and beginning Level 3. It goes beyond the core science to include applications in the real world and the mechanical and electrical principles needed for the majority of courses. It is well supported by numerous worked examples and problems, with answers. Main changes in this edition are arithmetic, algebraic and graphical methods in engineering (for sections A and B of the BTEC Level 2 unit), and a new chapter introducing the basics of calculus.

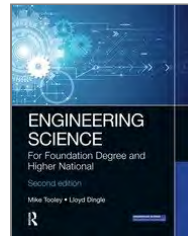
Routledge
November 2020:598
Hb: 978-0-367-55443-9: £105
Pb: 978-0-367-55445-3: £44.99
eBook: 978-1-003-09359-6

* For full contents and more information, visit: www.routledge.com/9780367554453

2ND EDITION

Engineering Science

For Foundation Degree and Higher National



Mike Tooley, Lloyd Dingle

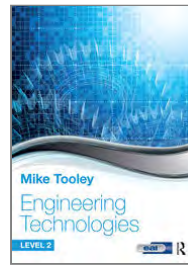
Engineering Science will help you understand the scientific principles involved in engineering. Focusing primarily upon core mechanical and electrical science topics, students enrolled on an Engineering Foundation degree and Higher National Engineering qualification will find this book an invaluable aid to their learning. The second edition features new chapters on 'Materials, Properties, Testing and Failure' and 'AC Network Analysis' complete with 54 totally new drawings.

Routledge
September 2020:528
Hb: 978-0-367-43273-7: £130
Pb: 978-0-367-43272-0: £46.99
eBook: 978-1-003-00224-6

* For full contents and more information, visit: www.routledge.com/9780367432720

Engineering Technologies

Level 2



Mike Tooley

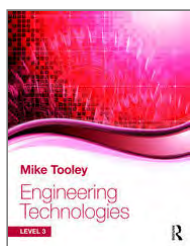
Written specifically for the EAL Level 2 Diploma in Engineering and Technology, this book covers the three mandatory units on this course: Engineering Environment Awareness, Engineering Techniques and Engineering Principles. Within each unit, the Learning Outcomes are covered in detail and the book includes activities and test your knowledge sections to check your understanding. At the end of each chapter is a checklist to make sure you have achieved each objective before you move onto the next section. Online, you can download answers to selected questions found within the book, as well as reference material and resources to support several other EAL units.

Routledge
September 2016:364
Pb: 978-1-138-67447-9: £35.99
eBook: 978-1-315-56129-5

* For full contents and more information, visit: www.routledge.com/9781138674479

Engineering Technologies

Level 3



Mike Tooley

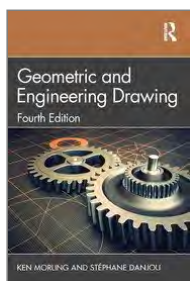
EAL Engineering Level 3 covers each compulsory unit within a dedicated chapter, including maths boxes, case studies, practice exercises and sample assessment sections that encourage readers to explore engineering for themselves whilst helping them to prepare for their exams. A companion website includes extra downloadable chapters for several optional units

Routledge
June 2017:242
Pb: 978-1-138-67492-9: **£31.99**
eBook: 978-1-315-56096-0

* For full contents and more information, visit: www.routledge.com/9781138674929

4TH EDITION

Geometric and Engineering Drawing



Ken Morling, Stéphane Danjou

This introduction to descriptive geometry and contemporary drafting guides the student through the essential principles to create engineering drawings that comply with international standards of technical product specification. This heavily updated new edition now applies to CAD as well as conventional drawing. Extensive new coverage is given to international drafting conventions, methods of spatial visualisation such as multi-view projection, dimensional and geometric tolerancing, and representation of workpiece and machine elements. It is ideal for undergraduates in engineering or product design, as well as students of vocational courses in engineering communication.

Routledge
June 2022:422
Hb: 978-0-367-43127-3: **£105**
Pb: 978-0-367-43123-5: **£44.99**
eBook: 978-1-003-00138-6

* For full contents and more information, visit: www.routledge.com/9780367431235

2ND EDITION

Introduction to Mechanical Engineering

Part 1



Edited by **Michael Clifford**

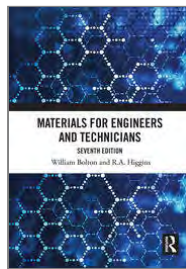
An Introduction to Mechanical Engineering: Part 1, Second Edition, provides a grounding in the core subjects of solid mechanics, materials, fluid mechanics, thermodynamics, electronics, and machine design. Printed in color, this updated bestseller has a full range of learning features, and online resources available for both students and instructors.

CRC Press
December 2022:732
Hb: 978-1-032-36232-8: **£89.99**
Pb: 978-0-367-33316-4: **£54.99**
eBook: 978-0-429-31916-7

* For full contents and more information, visit: www.routledge.com/9780367333164

7TH EDITION

Materials for Engineers and Technicians



William Bolton, R.A. Higgins

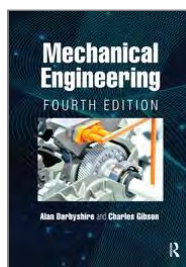
This comprehensive introduction to materials engineering and manufacturing processes for BTEC Level 2 students and beginning level 3 students remains straightforward and readable. The references to specifications for materials and materials testing have been updated to include current European-wide standards. The chapter on selection of materials provides more cases, and the sections on new developments in materials and recycling of materials have been extended. Sustainability and 3D printing are now included, more applications have been indicated, and a number of case studies of materials and associated problems have been added.

Routledge
October 2020:460
Hb: 978-0-367-53549-0: **£150**
Pb: 978-0-367-53550-6: **£39.99**
eBook: 978-1-003-08244-6

* For full contents and more information, visit: www.routledge.com/9780367535506

4TH EDITION

Mechanical Engineering



Alan Darbyshire, Charles Gibson

This established textbook is revised in line with the technical qualifications of new engineering apprenticeship standards at Level 3. Four new chapters cover dynamic engineering systems, fluid systems and additive manufacturing. Mathematical theory is backed up with numerous worked examples and student activities, with quizzes throughout the text and end-of-unit questions for revision and course work. It covers eight units of the BTEC L3 Advanced Manufacturing Engineering Development Technical Knowledge qualification, as well as content in the BTEC National Engineering Syllabus and BTEC L3 Aerospace and Aviation Engineering specialist qualifications.

Routledge
July 2022:518
Hb: 978-1-032-18854-6: **£82.99**
Pb: 978-1-032-18853-9: **£44.99**
eBook: 978-1-003-25657-1

* For full contents and more information, visit: www.routledge.com/9781032188539

4TH EDITION

Mechanical Engineering Principles



John Bird, Carl Ross

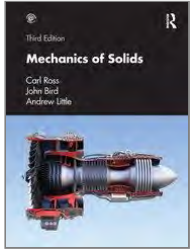
A student-friendly introduction to core mechanical engineering topics, focusing on examples and applications. The book contains 400 fully worked problems, 700 further problems with answers, and 300 multiple-choice questions. Two new chapters are included, covering the basic principles of matrix algebra and the matrix displacement method. The latter will also include guidance on software that can be used via Smartphones, iPads or laptops. The new edition is up to date with the latest BTEC National specifications and can also be used on undergraduate courses in mechanical, civil, structural, aeronautical and marine engineering, and naval architecture.

Routledge
September 2019:388
Hb: 978-0-367-25326-4: **£170**
Pb: 978-0-367-25324-0: **£42.99**
eBook: 978-0-429-28720-6

* For full contents and more information, visit: www.routledge.com/9780367253240

3RD EDITION

Mechanics of Solids



Carl Ross, John Bird, Andrew Little

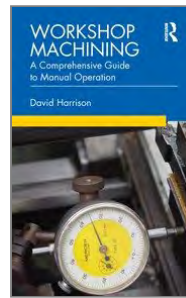
This introduction to the behaviour of solid materials under loading, focuses on statics and stress analysis. As the primary recommended mechanics of solids text of the Council of Engineering Institutions for undergraduates, it covers practical stress and strain scenarios including simple stress and strain, torsion, bending, elastic failure and buckling, with examples such as thin-walled structures, beams, struts and composite structures. New chapters cover matrix algebra, fracture mechanics, and additional material considerations including creep and fatigue. The companion website offers solutions, and multiple-choice tests; and resources for adopting course instructors.

Routledge
November 2021:518
Hb: 978-0-367-65141-1: **£145**
Pb: 978-0-367-65140-4: **£56.99**
eBook: 978-1-003-12802-1

* For full contents and more information, visit: www.routledge.com/9780367651404

Workshop Machining

A Comprehensive Guide to Manual Operation



David Harrison

Workshop Machining is a comprehensive textbook that explains the fundamental principles of manually operating machinery to form shapes in a variety of materials. It bridges the gap between traditional toolmaking skills and programming and operation of CNC machines in a production environment. Everything is covered from the basic machine controls to advanced cutting operations using a wide range of tooling and work holding devices. Theory and practice are shown via mixture of diagrams, text and illustrated worked examples, as well as through exercises.

Routledge
December 2021:474
Hb: 978-0-367-27840-3: **£115**
Pb: 978-0-367-27839-7: **£44.99**
eBook: 978-0-429-29819-6

* For full contents and more information, visit: www.routledge.com/9780367278397

6TH EDITION

Science and Mathematics for Engineering



John Bird

Science and Mathematics for Engineering is an introductory textbook that assumes no prior background in engineering. This 6th edition covers the fundamental scientific knowledge that all trainee engineers must acquire in order to pass their examinations and has been brought fully in line with the compulsory science and mathematics units in the new engineering course specifications. A new chapter covers ways of generating electricity – the present and the future, an important topic in the subject going forward. This book includes over 580 worked examples, 1300 further problems and 425 multiple choice questions and is supported by a companion website.

Routledge
October 2019:576
Hb: 978-0-367-20475-4: **£94.99**
Pb: 978-0-367-20474-7: **£48.99**
eBook: 978-0-429-26170-1

* For full contents and more information, visit: www.routledge.com/9780367204747

T Level Engineering

Technology, Manufacture and Maintenance



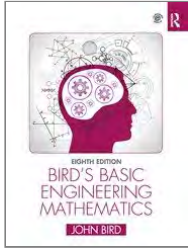
Andrew Livesey

This text covers the core content for the new T Level qualifications, as well as most other Level 3 qualifications in engineering manufacturing and maintenance. It starts with the design process, progresses through the science and mathematics of engineering processes, and lastly examines the management of engineering organisations. It is ideal for students and instructors on T Level courses, as well as a handy reference book for the practising engineer.

Routledge
May 2023:260
Hb: 978-1-032-25751-8: **£74.99**
Pb: 978-1-032-25750-1: **£32.99**
eBook: 978-1-003-28483-3

* For full contents and more information, visit: www.routledge.com/9781032257501

8TH EDITION

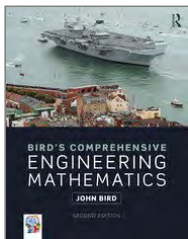
Bird's Basic Engineering Mathematics**John Bird**

Basic Engineering Mathematics has helped thousands of students to succeed in their exams. Mathematical theories are explained in a straightforward manner, supported by over 500 practical engineering examples and applications to ensure that readers can relate theory to practice. The extensive and thorough topic coverage makes this a superb text for introductory level engineering courses. Its companion website provides resources for both students and lecturers, including lists of essential formulae, multiple choice tests, and full solutions for all 1,700 further questions; and illustrations and answers to revision tests for adopting course instructors.

Routledge
March 2021:480
Hb: 978-0-367-64370-6: £105
Pb: 978-0-367-64367-6: £35.99
eBook: 978-1-003-12421-4

* For full contents and more information, visit: www.routledge.com/9780367643676

2ND EDITION

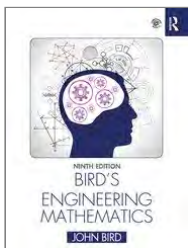
Bird's Comprehensive Engineering Mathematics**John Bird**

This comprehensive textbook covers the key mathematical principles for real-life engineering problems. Along with its companion website it provides simple explanations, supported by 1600 worked problems and over 3200 further problems contained within 384 exercises throughout the text. With 34 Revision tests together with 9 Multiple-choice tests -- and detailed solutions to 3200 further problems.

Routledge
June 2018:1226
Hb: 978-0-815-37815-0: £145
Pb: 978-0-815-37814-3: £51.99
eBook: 978-1-351-23287-6

* For full contents and more information, visit: www.routledge.com/9780815378143

9TH EDITION

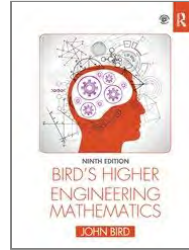
Bird's Engineering Mathematics**John Bird**

Engineering Mathematics has helped thousands of students to succeed in their exams, using worked examples and interactive problems. Mathematics is explained in a straightforward manner, supported by over 550 practical engineering examples and applications which relate theory to practice. This is a great text for a range of Level 2 and 3 engineering courses, and for A level revision. Its companion website provides resources for both students and lecturers, including lists of essential formulae and multiple-choice tests and full solutions for all 1900 further questions; and illustrations and answers to revision tests for adopting course instructors.

Routledge
March 2021:758
Hb: 978-0-367-64379-9: £105
Pb: 978-0-367-64378-2: £44.99
eBook: 978-1-003-12423-8

* For full contents and more information, visit: www.routledge.com/9780367643782

9TH EDITION

Bird's Higher Engineering Mathematics**John Bird**

Higher Engineering Mathematics has helped thousands of students to succeed in their exams by developing problem-solving skills. It is supported by over 600 practical engineering examples and applications which relate theory to practice. The extensive and thorough topic coverage makes this a solid text for undergraduate and upper-level vocational courses. Its companion website provides resources for both students and lecturers, including lists of essential formulae, and full solutions to all 2,000 further questions contained in the 277 practice exercises; and illustrations and answers to revision tests for adopting course instructors.

Routledge
March 2021:934
Hb: 978-0-367-64375-1: £105
Pb: 978-0-367-64373-7: £46.99
eBook: 978-1-003-12422-1

* For full contents and more information, visit: www.routledge.com/9780367643737

5TH EDITION

Mathematics Pocket Book for Engineers and Scientists**John Bird***Series: Routledge Pocket Books*

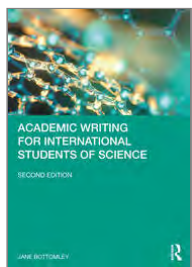
John Bird's compendium of essential formulae, definitions, tables and general information serves engineering students, technicians, scientists and professionals in engineering practice -- from algebra, geometry and trigonometry to logic circuits, differential equations and probability. It is supported by clear and succinct explanations, and illustrated with over 300 line drawings and 500 worked examples. It works as a reference for engineering students, technicians, scientists and professionals and as a revision guide for BTEC Nationals, Higher Nationals and NVQs.

Routledge
October 2019:570
Hb: 978-0-367-26653-0: £130
Pb: 978-0-367-26652-3: £46.99
eBook: 978-0-429-29440-2

* For full contents and more information, visit: www.routledge.com/9780367266523

2ND EDITION

Academic Writing for International Students of Science



Jane Bottomley

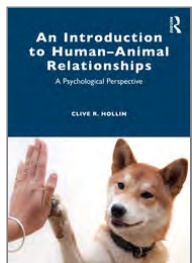
This second edition is an accessible companion designed to help science and technology students develop the knowledge, skills and strategies needed to produce clear and coherent academic writing in their university assignments. Using authentic texts to explore the nature of scientific writing, the book covers key areas such as scientific style, effective sentence and paragraph structure, and coherence in texts and arguments. Throughout the book, a range of tasks offers the opportunity to put theory into practice. This is an invaluable tool for the busy science or technology student looking to improve their writing and reach their full academic potential.

Routledge
October 2021:220
Hb: 978-0-367-63271-7: **£130**
Pb: 978-0-367-63272-4: **£27.99**
eBook: 978-1-003-11857-2

* For full contents and more information, visit: www.routledge.com/9780367632724

An Introduction to Human–Animal Relationships

A Psychological Perspective



Clive R. Hollin

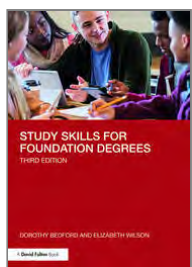
An Introduction to Human-Animal Relationships is a comprehensive introduction to the field of human-animal interaction from a psychological perspective across a wide range of themes. This key text brings an important perspective to the field of human-animal studies and will be useful to students and scholars in the fields of psychology, sociology, animal welfare, anthrozoology, veterinary science, and zoology.

Routledge
May 2021:208
Hb: 978-0-367-27757-4: **£130**
Pb: 978-0-367-27759-8: **£34.99**
eBook: 978-0-429-29773-1

* For full contents and more information, visit: www.routledge.com/9780367277598

3RD EDITION

Study Skills for Foundation Degrees



Dorothy Bedford, Elizabeth Wilson

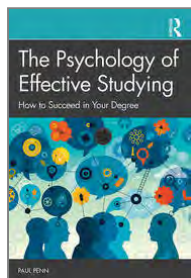
Study Skills for Foundation Degrees offers a step-by-step guide to the skills needed to successfully complete a Foundation Degree. Filled with activities and useful tips, it will help students to move from nervous novice to confident expert and provide them with the necessary tools to accomplish this. This third edition has been fully updated and features new chapters on e-learning, dissertations as well as expanded sections on ethics, feedback and referencing. Each chapter includes practical guidance as well as student perspectives that will help students through their course of study.

Routledge
December 2019:200
Hb: 978-0-367-33134-4: **£130**
Pb: 978-0-367-33135-1: **£16.99**
eBook: 978-0-429-31810-8

* For full contents and more information, visit: www.routledge.com/9780367331351

The Psychology of Effective Studying

How to Succeed in Your Degree



Paul Penn

This book provides a vital guide for students to key study skills that are instrumental in success at university. It uses a combination of research from cognitive psychology, humour and practical examples to convey where students often go fundamentally wrong in their studying practices and provides clear and concise advice on how they can improve. The book covers time management, academic integrity, writing essays, team work, and other key required skills for academic study. Written in a humorous and irreverent tone, and including illustrations and examples from popular culture, this is the ideal alternative and accessible study skills resource for any student at undergraduate level.

Routledge
August 2019:244
Hb: 978-1-138-57090-0: **£115**
Pb: 978-1-138-57092-4: **£19.99**
eBook: 978-0-203-70311-3

* For full contents and more information, visit: www.routledge.com/9781138570924

2ND EDITION

The Researcher's Toolkit

The Complete Guide to Practitioner Research



David Wilkinson, Dennis Dokter

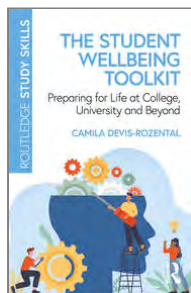
Designed for those undertaking research for the first time, the second edition of The Researcher's Toolkit is a practical and accessible guide for all those partaking in small-scale research. Jargon-free and assuming no prior knowledge, it covers the entire research process, from defining a research topic or question through to its completion. This book is a must-read guide for students and budding researchers as well as educators seeking to explain academic research and writing to their pupils. It will benefit anyone looking to complete a research project whether inside academia or beyond.

Routledge
May 2023:178
Hb: 978-1-032-01809-6: **£120**
Pb: 978-1-032-01810-2: **£24.99**
eBook: 978-1-003-18015-9

* For full contents and more information, visit: www.routledge.com/9781032018102

The Student Wellbeing Toolkit

Preparing for Life at College, University and Beyond



Camila Devis-Rozental

Series: *Routledge Study Skills*

The Student Wellbeing Toolkit puts wellbeing at the centre of your journey into university and beyond. By encouraging self-efficacy and a focus on the things you can control, it provides clear guidance to enhance wellbeing and opportunities for self-reflection that help develop self-awareness and prosocial skills for life. Drawing on research evidenced theories around positive psychology, theories of learning, motivation, and self-development, the book explores what, how, and why these areas are key to our wellbeing and the rationale for taking them into account to enable you to flourish and thrive at university.

Routledge
June 2023:286
Hb: 978-1-032-32965-9: **£130**
Pb: 978-1-032-32966-6: **£16.99**
eBook: 978-1-003-31754-8

* For full contents and more information, visit: www.routledge.com/9781032329666

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