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Practical Electronics Calculations and FormulaeRobot Builder's CookbookDCC Projects & Applications, Volume 3Short Circuits1001 Solved Engineering Fundamentals ProblemsApplied EnergyCaravan & Motorhome ElectricsDick Smith's Fun Way Into ElectronicsElectronic Devices And CircuitsRadio Communication HandbookTechnical Manual on Respiration Chamber DesignsArduino For DummiesPractical Electronic Fault-Finding and Troubleshooting30 Arduino Projects for the Evil Genius, Second EditionElectronics Pocket BookStill WalkingWireless Sensor NetworksEngineers Black BookSenior PhysicsThis Book Isn't SafeThe Geek AtlasTheremin:OscilloscopesSolar that Really Works!Python Programming and GUIs for Electronic EngineersMake: More Electronics308 CircuitsThe Black Art of Video Game Console DesignProgramming Arduino Getting Started with SketchesMan and His SymbolsDesign and Engineering of Microreactor and Smart-Scaled Flow ProcessesEnergy Scavenging for Wireless Sensor Networks555 Timer And Its ApplicationsThe Inventor of StereoCapillary Electrophoresis and Microchip Capillary ElectrophoresisRetronicsPerformance Electronics for CarsAudio Power Amplifier DesignPractical ArduinoRobot Builder's Sourcebook

Practical Electronics Calculations and Formulae

It isn't enough to be able to design. It isn't even enough to be able to debug. To be a real fault finder, you must be able to get a feel for what is going on in the circuit you are examining. In this book Robin Pain explains the basic techniques needed to be fault finder. Simple circuit examples are used to illustrate principles and concepts fundamental to the process of fault finding. This is not a book of theory. It is a book of practical tips, hints, and rules of thumb, all of which will equip the reader to tackle any job, whether it is fixing a TV, improving the sound from a hi-fi, or locating the fault in a piece of process equipment. You may be an engineer or technician in search of information and guidance, a college student, a hobbyist building a project from a magazine, or simply a keen self-taught amateur who is interested in electronic fault finding but finds books on the subject too mathematical or specialised. But you have one thing lacking, no fault-finding strategy. Seasoned professional designers have that peculiar knowledge of their own work and specialised knowledge of its components to allow them to analyse and remove faults quickly on the spot (design errors take a little longer!). Fault finders can never have this depth of specialisation; commercial pressures demand a minimum-knowledge-to-do-the-job approach. Practical Electronic Fault Finding and Troubleshooting describes the fundamental principles of analog and digital fault finding (although of course there is no such thing as a `digital fault' - all faults are by nature analog). This book is written entirely for a fault finder using only the basic fault-finding equipment: a digital multimeter and an oscilloscope. The treatment is non-mathematical (apart from Ohm's Law) and all jargon is strictly avoided. Robin Pain was originally trained to service colour TV, and has worked as an industrial fault finder for manufacturers of mobile radio, audio equipment, microcomputers and medical equipment. He has lectured at home and abroad on microcomputer fault finding.

Robot Builder's Cookbook

The aim of this reference is to bridge the gap between complicated technical theory, which sometimes seems to have little relevance to practical work and cat and dry method which may bring success in design but have the experimenter unfulfilled.

DCC Projects & Applications, Volume 3

Short Circuits

1001 Solved Engineering Fundamentals Problems

This do-it-yourself guide shows you how to program and build projects with the Arduino Uno and Leonardo boards and the Arduino 1.0 development environment. It gets you started right away with the simplified C programming you need to know and demonstrateshow to take advantage of the latest Arduino capabilities. You'll learn how to attach an Arduino board to your computer, program it, and connect electronics to it to create your own devices. A bonus chapter uses the special USB keyboard/mouse-impersonation feature exclusive to the Arduino Leonardo--

Applied Energy

Caravan & Motorhome Electrics

Colin Furze, five-time Guinness World Record Holder and YouTube's undisputed king of crazy inventions, instructs fans and curious young inventors on how to build ten brand new wacky inventions at home with an affordable tool kit. Colin Furze's bonkers and brilliant inventions such as a homemade hoverbike, DIY Wolverine Claws, an alarm clock ejector bed, and Hoover shoes have earned him 4.5 million YouTube subscribers and more than 450 million video views. Now Colin is on a mission to inspire a new generation of budding inventors with This Book Isn't Safe! This Book Isn't Safe contains instructions on how to make ten brand new inventions with a basic at-home toolkit, alongside behind-the-scenes stories about some of Colin's greatest inventions and top secret tips and tricks straight from his invention bunker (aka a shed in his backyard in Stamford Lincolnshire).

Dick Smith's Fun Way Into Electronics

&a>breaks new ground in game development by bridging the alien worlds of hardware and software together for the first time! The Black Art of Video Game Console Design is written for the programmer and/or hobbyist interested in software game development, but also wants to understand the hardware games are implemented on. This book assumes no prior knowledge of Electrical Engineering or Computer Architecture, but takes you on a breathtaking journey from atomic semiconductor theory to the design and construction of basic video game consoles that you can build and write your own games for! Included in the book is the entire design of numerous embedded game systems including the XGameStation systems and much more. The Black Art of Video Game Console Design with 800+ pages covers everything you need to know to design your own game console including: • Basic atomic physics and semiconductor theory primer. • Introduction to circuit analysis; current, voltage, and resistance. • Analog design using discrete components. • Digital electronics and Boolean algebra. • Physical hardware construction and prototyping techniques. • Combinational logic and advanced integrated circuit building blocks. • Finite state machine design. • Computer architecture and design. • Understanding and using microprocessors and microcontrollers. • Developing software for embedded systems. • Designing video (NTSC/VGA), audio, and input device systems. • Interfacing and communications. • The complete design and discussion of numerous game systems including the XGameStations! Register your book at informit.com/register and download the following additional resources (previously on bundled CD): • PCB and circuit simulation tools. • All necessary data sheets. • Demos and source code. • Complete designs to numerous embedded systems including the XGameStations.

Electronic Devices And Circuits

Shares step-by-step experiments that teach how to add computational power to projects, including light bars, timers, decoders, phototransistors, op-amps, and various sensors.

Radio Communication Handbook

* A much-needed clearinghouse for information on amateur and educational robotics, containing over 2,500 listings of robot suppliers, including mail order and local area businesses * Contains resources for both common and hard-to-find parts and supplies * Features dozens of "sidebars" to clarify essential robotics technologies * Provides original articles on various robot-building topics

Technical Manual on Respiration Chamber Designs

Here's a wide-ranging collection of practice problems typical of the FE exam in every respect. All exam topics are covered and SI units are used. These multiple-choice questions are conveniently arranged by subject--so you can work through just the areas where you need practice, or all 1001 problems. A full, step-by-step solution is provided for each problem. _____ Since 1975 more than 2 million people preparing for their engineering, surveying, architecture, LEED®, interior design, and landscape architecture exams have entrusted their exam prep to PPI. For more information, visit us at www.ppi2pass.com.

Arduino For Dummies

Practical Electronic Fault-Finding and Troubleshooting

Digital Command Control (DCC) has greatly increased in popularity in recent years. Yet, most modelers need help navigating this tricky technology. DCC Projects & Applications, Volume 3 provides step-by-step instructions and how-to tips to show modelers how to set up, maintain, and operate DCC systems. This includes everything from layout wiring to decoder installation to light and sound effects. It also features information on the latest software, technology and upgraded manufacturer items.

30 Arduino Projects for the Evil Genius, Second Edition

Written in clear, concise language and designed for an introductory applied energy course, Applied Energy: An Introduction discusses energy applications in small-medium enterprises, solar energy, hydro and wind energy, nuclear energy, hybrid energy, and energy sustainability issues. Focusing on renewable energy technologies, energy conversion, and conservation and the energy industry, the author lists the key aspects of applied energy and related studies, taking a question-based approach to the material that is useful for both undergraduate students and postgraduates who want a broad overview of energy conversion. The author carefully designed the text to motivate students and give them the foundation they need to place the concepts presented into a real-world context. He begins with an introduction to the basics and the definitions used throughout the book. From there, he covers the energy industry and energy applications; energy sources, supply, and demand; and energy management, policy, plans, and analysis. Building on this, the author elucidates various energy saving technologies and energy storage methods, explores the pros and cons of fossil fuels and alternative energy sources, and examines the various types of applications of alternative energies. The book concludes with chapters on hybrid energy technology, hybrid energy schemes, other energy conversion methods, and applied energy issues. The book takes advantage of practical and application-based learning, presenting the information in various forms such as essential notes

followed by practical projects, assignments, and objective and practical questions. In each chapter, a small section introduces some elements of applied energy design and innovation, linking knowledge with applied energy design and practice. The comprehensive coverage gives students the skills not only to master the concepts in the course, but also apply them to future work in this area.

Electronics Pocket Book

This book is a printed edition of the Special Issue "Design and Engineering of Microreactor and Smart-Scaled Flow Processes" that was published in Processes

Still Walking

Explores Jung's psychological concepts regarding the nature, function and importance of man's symbols as they appear on both the conscious and subconscious level

Wireless Sensor Networks

For people looking to use solar power as the main source of power in motor homes,fifth wheelers, caravans or cabins this handy book demonstrates how to set up a successful solar power system to power fridges, TVs, lights, and more.

Engineers Black Book

The history of science is all around us, if you know where to look. With this unique traveler's guide, you'll learn about 128 destinations around the world where discoveries in science, mathematics, or technology occurred or is happening now. Travel to Munich to see the world's largest science museum, watch Foucault's pendulum swinging in Paris, ponder a descendant of Newton's apple tree at Trinity College, Cambridge, and more. Each site in The Geek Atlas focuses on discoveries or inventions, and includes information about the people and the science behind them. Full of interesting photos and illustrations, the book is organized geographically by country (by state within the U.S.), complete with latitudes and longitudes for GPS devices. Destinations include: Bletchley Park in the UK, where the Enigma code was broken The Alan Turing Memorial in Manchester, England The Horn Antenna in New Jersey, where the Big Bang theory was confirmed The National Cryptologic Museum in Fort Meade, Maryland The Trinity Test Site in New Mexico, where the first atomic bomb was exploded The Joint Genome Institute in Walnut Creek, California You won't find tedious, third-rate museums, or a tacky plaque stuck to a wall stating that "Professor X slept here." Every site in this book has real scientific, mathematical, or

technological interest -- places guaranteed to make every geek's heart pound a little faster. Plan a trip with The Geek Atlas and make your own discoveries along the way.

Senior Physics

"As a senior Macquarie Bank executive, Bill Moss AM built a global business in real estate finance, development and funds management that stretched across five continents, creating thousands of jobs and making billions of dollars for the Bank's investors, shareholders and staff. But up until a few years before deciding to retire from the &‘Millionaire Factory', Moss fought every step of the way to conceal a grim personal secret from his colleagues, business associates and friends &— and most of all from himself. When he was 27, Moss was told by doctors he had a degenerative and incurable muscle-wasting disease, a form of muscular dystrophy called FSHD, which the ambitious young businessman was assured would leave him crippled and in a wheelchair by the age of 50. These memoirs are the inspirational, moving, blunt and at times very funny account of how a senior and seemingly all-powerful Macquarie banker struggled for years through physical discomfort, pain and the many barriers thrown in the path of people with physical disabilities, not just to rise to the international heights of a notoriously difficult profession but also gradually to face and come courageously to terms with his disability."--Author's website.

This Book Isn't Safe

This book is essential for audio power amplifier designers and engineers for one simple reasonit enables you as a professional to develop reliable, high-performance circuits. The Author Douglas Self covers the major issues of distortion and linearity, power supplies, overload, DC-protection and reactive loading. He also tackles unusual forms of compensation and distortion produced by capacitors and fuses. This completely updated fifth edition includes four NEW chapters including one on The XD Principle, invented by the author, and used by Cambridge Audio. Crosstalk, power amplifier input systems, and microcontrollers in amplifiers are also now discussed in this fifth edition, making this book a must-have for audio power amplifier professionals and audiophiles.

The Geek Atlas

Program Arduino with ease! Using clear, easy-to-follow examples, Programming Arduino: Getting Started with Sketches reveals the software side of Arduino and explains how to write well-crafted sketches using the modified C language of Arduino. No prior programming experience is required! The downloadable sample programs featured in the book can be used as-is or modified to suit your purposes. Understand Arduino hardware fundamentals Install the software, power it up,

and upload your first sketch Learn C language basics Write functions in Arduino sketches Structure data using arrays and strings Use Arduino's digital and analog inputs and outputs in your programs Work with the Standard Arduino Library Write sketches that can store data Program LCD displays Use an Ethernet shield to enable Arduino to function as a web server Write your own Arduino libraries In December 2011, Arduino 1.0 was released. This changed a few things that have caused two of the sketches in this book to break. The change that has caused trouble is that the classes 'Server' and 'Client' have been renamed to 'EthernetServer' and 'EthernetClient' respectively. To fix this: Edit sketches 10-01 and 10-02 to replace all occurrences of the word 'Server' with 'EthernetServer' and all occurrences of 'Client' with 'EthernetClient'. Alternatively, you can download the modified sketches for 10-01 and 10-02 from here: http://www.arduinobook.com/arduino-1-0 Make Great Stuff! TAB, an imprint of McGraw-Hill Professional, is a leading publisher of DIY technology books for makers, hackers, and electronics hobbyists.

Theremin

This is the ninth in the 300 series of circuit design books, again contains a wide range of circuits, tips and design ideas. The book has been divided into sections, making it easy to find related subjects in a single category. The book not only details DIY electronic circuits for home construction but also inspiring ideas for projects you may want to design from the ground up. Because software in general and microcontroller programming techniques in particular have become key aspects of modern electronics, a number of items in this book deal with these subjects only. Like its predecessors in the 300 series, "308 Circuits" covers the following disciplines and interest fields of modern electronics: test and measurement, radio and television, power supplies and battery chargers, general interest, computers and microprocessors, circuit ideas and audio and hi-fi.

Oscilloscopes

Bring your ideas to life with the latest Arduino hardware and software Arduino is an affordable and readily available hardware development platform based around an open source, programmable circuit board. You can combine this programmable chip with a variety of sensors and actuators to sense your environment around you and control lights, motors, and sound. This flexible and easy-to-use combination of hardware and software can be used to create interactive robots, product prototypes and electronic artwork, whether you’re an artist, designer or tinkerer. Arduino For Dummies is a great place to start if you want to find out about Arduino and make the most of its incredible capabilities. It helps you become familiar with Arduino and what it involves, and offers inspiration for completing new and exciting projects. • Covers the latest software and hardware currently on the market • Includes updated examples and circuit board diagrams in addition to new resource chapters • Offers simple examples to teach fundamentals needed to move onto more advanced

topics • Helps you grasp what’s possible with this fantastic little board Whether you’re a teacher, student, programmer, hobbyist, hacker, engineer, designer, or scientist, get ready to learn the latest this new technology has to offer!

Solar that Really Works!

Python Programming and GUIs for Electronic Engineers

"This easy-to-use pocket book contains a wealth of up-to-date, useful, practical and hard-to- find information. With 160 matt laminated, greaseproof pages you'll enjoy glare-free reading and durability. Includes: data sheets, formulae, reference tables and equivalent charts. New content in the 3rd edition includes; Reamer and Drill Bit Types, Taper Pins, T-slot sizing, Counterboring/Sinking, Extended Angles Conversions for Cutting Tapers, Keyways and Keyseats, Woodruff Keys, Retaining Rings, 0-Rings, Flange Sizing, Common Workshop Metals, Adhesives, GD&T, Graph and Design Paper included at the back of the book. Engineers Black Book contains a wealth of up-to-date, useful, information within over 160 matt laminated grease proof pages. It is ideal for engineers, trades people, apprentices, machine shops, tool rooms and technical colleges." -- publisher website.

Make: More Electronics

Oscilloscopes are essential tools for checking circuit operation and diagnosing faults, and an enormous range of models are available. But which is the right one for a particular application? Which features are essential and which not so important? Ian Hickman has the answers. This handy guide to oscilloscopes is essential reading for anyone who has to use a 'scope for their work or hobby: electronics designers, technicians, anyone in industry involved in test and measurement, electronics enthusiasts Ian Hickman's review of all the latest types of 'scope currently available will prove especially useful for anyone planning to buy - or even build - an oscilloscope. The science and electronics of how oscilloscopes work is explained in order to enhance the reader's appreciation of how to use their 'scope. The practical use of oscilloscope is explained with clarity and supported with examples, encouraging the reader to think about the application of their oscilloscope and improve their use of this complex instrument. The advance of digital technology makes this timely revision of Ian Hickman's well known book an essential update for electronics professionals and enthusiasts alike. The only fully up-to-date guide to oscilloscopes available A practical guide to getting the most out of an oscilloscope Essential reading for anyone planning to invest in an expensive piece of equipment

308 Circuits

The Black Art of Video Game Console Design

Electronics Pocket Book, Fourth Edition is a nonmathematical presentation of the many varied topics covered by electronics. The book tackles electron physics, electronic components (i.e. resistors, capacitors, and conductors), integrated circuits, and the principles of a.c. and d.c. amplifiers. The text also discusses oscillators, digital circuits, digital computers, and optoelectronics (i.e., sensors, emitters, and devices that utilize light). Communications (such as line and radio communications, transmitters, receivers, and digital techniques); the principles and examples of servosystems; and transducers are also considered. The book describes useful electromagnetic devices, electronic instruments, and power supplies, as well as maintenance (preventive, planned, and corrective), fault-finding, and repair (first- and second-line maintenance). The text will serve as a useful reference manual for both the professional electronics engineers and the home hobbyists.

Programming Arduino Getting Started with Sketches

Create your own Arduino-based designs, gain in-depth knowledge of the architecture of Arduino, and learn the user-friendly Arduino language all in the context of practical projects that you can build yourself at home. Get hands-on experience using a variety of projects and recipes for everything from home automation to test equipment. Arduino has taken off as an incredibly popular building block among ubicomp (ubiquitous computing) enthusiasts, robotics hobbyists, and DIY home automation developers. Authors Jonathan Oxer and Hugh Blemings provide detailed instructions for building a wide range of both practical and fun Arduino-related projects, covering areas such as hobbies, automotive, communications, home automation, and instrumentation. Take Arduino beyond "blink" to a wide variety of projects from simple to challenging Hands-on recipes for everything from home automation to interfacing with your car engine management system Explanations of techniques and references to handy resources for ubiquitous computing projects Supplementary material includes a circuit schematic reference, introductions to a range of electronic engineering principles and general hints & tips. These combine with the projects themselves to make Practical Arduino: Cool Projects for Open Source Hardware an invaluable reference for Arduino users of all levels. You'll learn a wide variety of techniques that can be applied to your own projects.

Man and His Symbols

Explores the benefits and limitations of the latest capillary electrophoresis techniques Capillary electrophoresis and microchip capillary electrophoresis are powerful analytical tools that are particularly suited for separating and analyzing

biomolecules. In comparison with traditional analytical techniques, capillary electrophoresis and microchip capillary electrophoresis offer the benefits of speed, small sample and solvent consumption, low cost, and the possibility of miniaturization. With contributions from a team of leading analytical scientists, Capillary Electrophoresis and Microchip Capillary Electrophoresis explains how researchers can take full advantage of all the latest techniques, emphasizing applications in which capillary electrophoresis has proven superiority over other analytical approaches. The authors not only explore the benefits of each technique, but also the limitations, enabling readers to choose the most appropriate technique to analyze a particular sample. The book's twenty-one chapters explore fundamental aspects of electrophoretically driven separations, instrumentation, sampling techniques, separation modes, detection systems, optimization strategies for method development, and applications. Specific topics include: Critical evaluation of the use of surfactants in capillary electrophoresis Sampling and quantitative analysis in capillary electrophoresis Capillary electrophoresis with electrochemical detection Overcoming challenges in using microchip electrophoresis for extended monitoring applications Capillary electrophoresis of intact unfractionated heparin and related impurities Microchip capillary electrophoresis for in situ planetary exploration Each chapter begins with an introduction and ends with conclusions as well as references to the primary literature. Novices to the field will find this book an easy-to-follow introduction to core capillary electrophoresis techniques and methods. More experienced investigators can turn to the book for troubleshooting tips and expert advice to guide them through the most advanced applications.

Design and Engineering of Microreactor and Smart-Scaled Flow Processes

Ten projects, including a mini syntheiser, night cricket, stereo amplifier and combination time and lock switch.

Energy Scavenging for Wireless Sensor Networks

555 Timer And Its Applications

This second book by the author on WSNs focuses on the concepts of energy, and energy harvesting and management techniques. Definitions and terminologies are made clear without leaning on the relaxing assumption that they are already known or easily reachable, the reader is not to be diverted from the main course. Neatly drawn figures assist in viewing and imagining the offered topics. To make energy related topics felt and seen, the adopted technologies as well as their manufacturers are presented in details. With such a depth, this book is intended for a wide audience, it is meant to be helper and motivator, for the senior undergraduates, postgraduates, researchers, and practitioners; concepts and energy related applications are laid out, research and practical issues are backed by appropriate literature, and new trends are put

under focus. For senior undergraduate students, it familiarizes with conceptual foundations and practical projects implementations. Also, it is intended for graduate students working on their thesis and in need of specific knowledge on WSNs and the related energy harvesting and management techniques. Moreover, it is targeting researchers and practitioners interested in features and applications of WSNs, and on the available energy harvesting and management projects and testbeds. Exercises at the end of each chapter are not just questions and answers; they are not limited to recapitulate ideas. Their design objective is not bound to be a methodical review of the provided concepts, but rather as a motivator for lot more of searching, finding, and comparing beyond what has been presented in the book.

The Inventor of Stereo

This book is the definitive study of the life and works of one of Britain's most important inventors who, due to a cruel set of circumstances, has all but been overlooked by history. Alan Dower Blumlein led an extraordinary life in which his inventive output rate easily surpassed that of Edison, but whose early death during the darkest days of World War Two led to a shroud of secrecy which has covered his life and achievements ever since. His 1931 Patent for a Binaural Recording system was so revolutionary that most of his contemporaries regarded it at as more than 20 years ahead of its time. Even years after his death, the full magnitude of its detail had not been fully utilized. Among his 128 Patents are the principle electronic circuits critical to the development of the world's first electronic television system. During his short working life, Blumlein produced patent after patent breaking entirely new ground in electronic and audio engineering. During the Second World War, Alan Blumlein was deeply engaged in the very secret work of radar development and contributed enormously to the system eventually to become 'H2S'- blind bombing radar. Tragically, during an experimental H2S flight in June 1942, the Halifax bomber in which Blumlein and several colleagues were flying, crashed and all aboard were killed. He was just days short of his 39th birthday. For many years there have been rumours about a biography of Alan Blumlein, yet none has been forthcoming. This is the world's first study of a man whose achievements should rank among those of the greatest Britain has produced. This book provides detailed knowledge of every one of his patents and the process behind them, while giving an in depth study of the life and times of this quite extraordinary man.

Capillary Electrophoresis and Microchip Capillary Electrophoresis

The vast reduction in size and power consumption of CMOS circuitry has led to a large research effort based around the vision of wireless sensor networks. The proposed networks will be comprised of thousands of small wireless nodes that operate in a multi-hop fashion, replacing long transmission distances with many low power, low cost wireless devices. The result will be the creation of an intelligent environment responding to its inhabitants and ambient conditions. Wireless devices currently being designed and built for use in such environments typically run on batteries. However, as the

networks increase in number and the devices decrease in size, the replacement of depleted batteries will not be practical. The cost of replacing batteries in a few devices that make up a small network about once per year is modest. However, the cost of replacing thousands of devices in a single building annually, some of which are in areas difficult to access, is simply not practical. Another approach would be to use a battery that is large enough to last the entire lifetime of the wireless sensor device. However, a battery large enough to last the lifetime of the device would dominate the overall system size and cost, and thus is not very attractive. Alternative methods of powering the devices that will make up the wireless networks are desperately needed.

Retronics

This book is aimed at engineers, scientists and hobbyists who want to interface PCs with hardware projects using graphic user interfaces. Desktop and web based applications are covered. The programming language used is Python, an object-oriented scripting language; a higher level language than, say, C. The book guides you through starting with Linux by way of a free downloadable, live bootable distribution that can be ported around different computers without requiring hard drive installation. Practical demonstration circuits and downloadable, full software examples are presented that can be the basis for further projects. As well as discrete digital inputs and outputs, the examples cover 12 bit analog to digital inputs. The book also shows you how you can customise your own live Linux bootable CD to include your own projects. No complicated, elaborate, software development environment is used or even required.

Performance Electronics for Cars

Life story of the Soviet scientist whose genius introduced the world to electronic music, including the forerunner of today's synthesizer, but also masterminded spy techniques against the United States.

Audio Power Amplifier Design

Practical Arduino

Text for the new Queensland Senior Physics syllabus. Provides examples, questions, investigations and discussion topics. Designed to be gender balanced, with an emphasis on library and internet research. Includes answers, a glossary and an index. An associated internet web page gives on-line worked solutions to questions and additional resource material. The authors are experienced physics teachers and members of the Physics Syllabus Sub-Committee of the Queensland BSSSS.

Robot Builder's Sourcebook

Owen Bishop introduces, through hands-on project work, the mechanics, electronics and programming involved in practical robot design-and-build. The use of the PIC microcontroller throughout provides a painless introduction to programming whilst harnessing the power of a highly popular microcontroller used by students and design engineers worldwide. This is a book for first-time robot builders, advanced builders wanting to know more about programming robots and students in Further and Higher Education tackling microcontroller-based practical work. They will all find this book a unique and exciting source of projects, ideas and techniques, to be combined into a wide range of fascinating robots. · Full step-by-step instructions for 5 complete self-build robots · Introduces key techniques in electronics, programming and construction - for robust robots that work first time · Illustrations, close-up photographs and a lively, readable text make this a fun and informative guide for novice and experienced robot builders