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RESEARCH METHODS FOR THE BEHAVIORAL SCIENCES, Fifth Edition, helps readers see how interesting and exciting experimental and nonexperimental research can be. Inviting and conversational, the book leads readers through the research process from start to finish. It begins with tips and strategies for generating research ideas, moves to selecting measures and participants, and then offers an examination of research strategy and design. This step-by-step presentation emphasizes the decisions researchers must make at each stage of the process. The authors avoid a cookbook approach by linking terminology with applied concepts; their lecture in a book style makes the text accessible by emphasizing discussion and explanation of topics. Examples and content throughout the book reflect the most current APA guidelines. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This comprehensive Study Guide reinforces all the key concepts for the 2014 syllabus, ensuring students develop a clear understanding of all the crucial topics at SL and HL. Breaking concepts down into manageable sections and with diagrams and illustrations to cement understanding, exam preparation material is integrated to build student confidence and assessment potential. Directly linked to the new Oxford Chemistry Course Book to extend and sharpen comprehension, this book supports maximum achievement in the course and assessment. About the series: Reinforce student understanding of all the crucial subject material. Fully comprehensive and matched to the most recent syllabuses, these resources provide focused review of all important concepts, tangibly strengthening assessment potential.

The most comprehensive match to the new 2014 Chemistry syllabus, this completely revised edition gives you unrivalled support for the new concept-based approach, the Nature of science. The only DP Chemistry resource that includes support directly from the IB, focused exam practice, TOK links and real-life applications drive achievement.

Edible insects have always been a part of human diets, but in some societies there remains a degree of disdain and disgust for their consumption. Insects offer a significant opportunity to merge traditional knowledge and modern science to improve human food security worldwide. This publication describes the contribution of insects to food security and examines future prospects for raising insects at a commercial scale to improve food and feed production, diversify diets, and support livelihoods in both developing and developed countries. Edible insects are a promising alternative to the conventional production of meat, either for direct human consumption or for indirect use as feedstock. This publication will boost awareness of the many valuable roles that insects play in sustaining nature and human life, and it will stimulate debate on the expansion of the use of insects as food and feed.

This volume collects research findings presented at the 8th Edition of the Electronic Structure: Principles and Applications (ESPA-2012) International Conference, held in Barcelona, Spain on June 26-29, 2012. The contributions cover research work on methods and fundamentals of theoretical chemistry, chemical reactivity, bimolecular modeling, and materials science. Originally published in the journal Theoretical Chemistry Accounts, these outstanding papers are now available in a hardcover print format, as well as a special electronic edition. This volume provides valuable content for all researchers in theoretical chemistry, and will especially benefit those research groups and libraries with limited access to the journal.

While the concept of sustainability has been widely embraced, it has been only vaguely defined and is exceedingly difficult to measure. Sustainability indicators are critical to making the broad concept of sustainability operational by providing specific measures by which decision makers and the public can judge progress. Sustainability Indicators defines the present state of the art in indicator development. It presents a comprehensive assessment of the science behind various indicators, while placing special emphasis on their use as communications tools. The contributors draw on their experience as academics and practitioners to describe the conceptual challenges to measuring something as complex as sustainability at local, regional, national, and global scales. The book also reviews existing indicators to assess how they could be better employed, considering which indicators are overused and which have been underutilized. Sustainability Indicators will help planners and policy makers find indicators that are ready for application and relevant to their needs, and will help researchers identify the unresolved issues where progress is most urgently needed. All readers will find advice as to the most effective ways to use indicators to support decision making.

Developing Solid Oral Dosage Forms: Pharmaceutical Theory and Practice, Second Edition illustrates how to develop high-quality, safe, and effective pharmaceutical products by discussing the latest techniques, tools, and scientific advances in preformulation investigation, formulation, process design, characterization, scale-up, and production operations. This book covers the essential principles of physical pharmacy, biopharmaceutics, and industrial pharmacy, and their application to the research and development process of oral dosage forms. Chapters have been added, combined, deleted, and completely revised as necessary to produce a comprehensive, well-organized, valuable reference for industry professionals and academics engaged in all aspects of the development process. New and important topics include spray drying, amorphous solid dispersion using hot-melt extrusion, modeling and simulation, bioequivalence of complex modified-released dosage forms, biowaivers, and much more. Written and edited by an international team of leading experts with experience and knowledge across industry, academia, and regulatory settings. Includes new chapters covering the pharmaceutical applications of surface phenomenon, predictive biopharmaceutics and pharmacokinetics, the development of formulations for drug discovery support, and much more. Presents new case studies throughout, and a section completely devoted to regulatory aspects, including global product regulation and international perspectives.

Includes Practice Test Questions IB Chemistry (SL and HL) Examination Secrets helps you ace the International Baccalaureate Diploma

Programme, without weeks and months of endless studying. Our comprehensive IB Chemistry (SL and HL) Examination Secrets study guide is written by our exam experts, who painstakingly researched every topic and concept that you need to know to ace your test. Our original research reveals specific weaknesses that you can exploit to increase your exam score more than you've ever imagined. IB Chemistry (SL and HL) Examination Secrets includes: The 5 Secret Keys to IB Test Success: Time is Your Greatest Enemy, Guessing is Not Guesswork, Practice Smarter, Not Harder, Prepare, Don't Procrastinate, Test Yourself; A comprehensive General Strategy review including: Make Predictions, Answer the Question, Benchmark, Valid Information, Avoid Fact Traps, Milk the Question, The Trap of Familiarity, Eliminate Answers, Tough Questions, Brainstorm, Read Carefully, Face Value, Prefixes, Hedge Phrases, Switchback Words, New Information, Time Management, Contextual Clues, Don't Panic, Pace Yourself, Answer Selection, Check Your Work, Beware of Directly Quoted Answers, Slang, Extreme Statements, Answer Choice Families; Along with a complete, in-depth study guide for your specific IB test, and much more...

The development of novel materials whose structure, properties or function are inspired by nature or living matter is a wide and dynamically evolving field. There is virtually no field of scientific endeavour that has not felt the touch of the 'bioinspired' ethos. Bioinspired Inorganic Materials provides an up-to-date review of the research, with some historical context. The emphasis throughout is on how bioinspiration is being used for cutting-edge applications. Chapters in the book cover big breakthroughs in bioinspiration for energy applications, surface technology, metamaterials and ceramics for regenerative medicine. Edited and written by world-renowned scientists, this book will provide a comprehensive introduction for advanced undergraduates, postgraduates and researchers wishing to learn about the topic.

SHORTLISTED for the 2011 Man Booker Prize for Fiction A thrilling and powerful novel about a young boy lured to sea by the promise of adventure and reward, with echoes of *Great Expectations*, *Moby-Dick*, and *The Voyage of the Narwhal*. Jamrach's *Menagerie* tells the story of a nineteenth-century street urchin named Jaffy Brown. Following an incident with an escaped tiger, Jaffy goes to work for Mr. Charles Jamrach, the famed importer of exotic animals, alongside Tim, a good but sometimes spitefully competitive boy. Thus begins a long, close friendship fraught with ambiguity and rivalry. Mr. Jamrach recruits the two boys to capture a fabled dragon during the course of a three-year whaling expedition. Onboard, Jaffy and Tim enjoy the rough brotherhood of sailors and the brutal art of whale hunting. They even succeed in catching the reptilian beast. But when the ship's whaling venture falls short of expectations, the crew begins to regard the dragon—seething with feral power in its cage—as bad luck, a feeling that is cruelly reinforced when a violent storm sinks the ship. Drifting across an increasingly hallucinatory ocean, the survivors, including Jaffy and Tim, are forced to confront their own place in the animal kingdom. Masterfully told, wildly atmospheric, and thundering with tension, *Jamrach's Menagerie* is a truly haunting novel about friendship, sacrifice, and survival.

Biofuels are one of the most sustainable options when it comes to renewable energy sources to replace fossil fuels. Biotechnological processes, such as microbial fermentation, are used to produce energy from waste biomass by converting organic substrates into biofuels. This book discusses practices to improve and enrich various microbial communities in order to enhance sustainable and economical biofuel production. It also evaluates various strategies to develop potential microorganisms and microbial consortia to produce highly efficient biofuels at a relatively low cost.

This book aims to give an overview on the present state of volcanic lake research, covering topics such as volcano monitoring, the chemistry, dynamics and degassing of acidic crater lakes, mass-energy-chemical-isotopic balance approaches, limnology and degassing of Nyos-type lakes, the impact on the human and natural environment, the eruption products and impact of crater lake breaching eruptions, numerical modeling of gas clouds and lake eruptions, thermo-hydro-mechanical and deformation modeling, CO₂ fluxes from lakes, volcanic lakes observed from space, biological activity, continuous monitoring techniques, and some aspects more. We hope to offer an updated manual on volcanic lake research, providing classic research methods, and point towards a more high-tech approach of future volcanic lake research and continuous monitoring.

Encyclopedia of Food Chemistry is the ideal primer for food scientists, researchers, students and young professionals who want to acquaint themselves with food chemistry. Well-organized, clearly written, and abundantly referenced, the book provides a foundation for readers to understand the principles, concepts, and techniques used in food chemistry applications. Articles are written by international experts and cover a wide range of topics, including food chemistry, food components and their interactions, properties (flavor, aroma, texture) the structure of food, functional foods, processing, storage, nanoparticles for food use, antioxidants, the Maillard and Strecker reactions, process derived contaminants, and the detection of economically-motivated food adulteration. The encyclopedia will provide readers with an introduction to specific topics within the wider context of food chemistry, as well as helping them identify the links between the various sub-topics. Offers readers a comprehensive understanding of food chemistry and the various connections between the sub-topics Provides an authoritative introduction for non-specialists and readers from undergraduate levels and upwards Meticulously organized, with articles structured logically based on the various elements of food chemistry

Protein Misfolding, Volume 118, covers the wide spectrum of diseases and disorders that are attributed to protein misfolding, including degenerative and neurodegenerative, cardiovascular, renal, glaucoma, cancer, cystic fibrosis, Gaucher's disease, and many others. Specific chapters cover Mass spectrometric approaches for profiling protein folding and stability, Biomembranes, a key player in protein misfolding, how Genetic and environmental factors interact to disrupt proteostasis and trigger protein misfolding diseases, Formation of oligomers and large amorphous aggregates by intrinsically disordered proteins, Protein misfolding in ER stress with applications to cardiovascular and renal disease, and much more. Integrates methods for studying protein misfolding, factors that trigger this process and its role in a wide spectrum of diseases and disorders Contains timely chapters written by well-renowned authorities in their field Provides data that is well supported by a number of high quality illustrations, figures and tables, and targets a very wide audience of specialists, researchers and students

What are "essential questions," and how do they differ from other kinds of questions? What's so great about them? Why should you design and use essential questions in your classroom? Essential questions (EQs) help target standards as you organize curriculum content into coherent units that yield focused and thoughtful learning. In the classroom, EQs are used to stimulate students' discussions and promote a deeper understanding of the content. Whether you are an Understanding by Design (UbD) devotee or are searching for ways to address standards—local or Common Core State Standards—in an engaging way, Jay McTighe and Grant Wiggins provide practical guidance on how to design, initiate, and embed inquiry-based teaching and learning in your classroom. Offering dozens of examples, the authors explore the usefulness of EQs in all K-12 content areas, including skill-based areas such as math, PE, language instruction, and arts education. As an important element of their backward design approach to designing curriculum, instruction, and assessment, the authors *Give a comprehensive explanation of why EQs are so important; *Explore seven defining characteristics of EQs; *Distinguish between topical and overarching questions and their uses; *Outline the rationale for using EQs as the focal point in creating units of study; and *Show how to create effective EQs, working from sources including standards, desired understandings, and student misconceptions. Using essential questions can be challenging—for both teachers and students—and this book provides guidance through practical and proven processes, as well as suggested "response strategies" to encourage student engagement. Finally, you will learn how to create a culture of inquiry so that all members of the educational community—students, teachers, and administrators—benefit from the increased rigor and deepened understanding that emerge when essential questions become a guiding force for learners of all ages.

Presents a multifaceted model of understanding, which is based on the premise that people can demonstrate understanding in a

variety of ways.

The need for novel antibiotics is greater now than perhaps anytime since the pre-antibiotic era. Indeed, the recent collapse of many pharmaceutical antibacterial groups, combined with the emergence of hypervirulent and pan-antibiotic-resistant bacteria has severely compromised infection treatment options and led to dramatic increases in the incidence and severity of bacterial infections. This collection of reviews and laboratory protocols gives the reader an introduction to the causes of antibiotic resistance, the bacterial strains that pose the largest danger to humans (i.e., streptococci, pneumococci and enterococci) and the antimicrobial agents used to combat infections with these organisms. Some new avenues that are being investigated for antibiotic development are also discussed. Such developments include the discovery of agents that inhibit bacterial RNA degradation, the bacterial ribosome, and structure-based approaches to antibiotic drug discovery. Two laboratory protocols are provided to illustrate different strategies for discovering new antibiotics. One is a bacterial growth inhibition assay to identify inhibitors of bacterial growth that specifically target conditionally essential enzymes in the pathway of interest. The other protocol is used to identify inhibitors of bacterial cell-to-cell signaling. This e-book — a curated collection from eLS, WIREs, and Current Protocols — offers a fantastic introduction to the field of antibiotics and antibiotic resistance for students or interdisciplinary collaborators. Table of Contents: Introduction Antibiotics and the Evolution of Antibiotic Resistance eLS Jose L Martinez, Fernando Baquero Antimicrobials Against Streptococci, Pneumococci and Enterococci eLS Susan Donabedian, Adenike Shoyinka Techniques & Applications RNA decay: a novel therapeutic target in bacteria WIREs RNA Tess M. Eidem, Christelle M. Roux, Paul M. Dunman Antibiotics that target protein synthesis WIREs RNA Lisa S. McCoy, Yun Xie, Yitzhak Tor Methods High-Throughput Assessment of Bacterial Growth Inhibition by Optical Density Measurements Current Protocols Chemical Biology Jennifer Campbell Structure-Based Approaches to Antibiotic Drug Discovery Current Protocols Microbiology George Nicola, Ruben Abagyan Novel Approaches to Bacterial Infection Therapy by Interfering with Cell-to-Cell Signaling Current Protocols Microbiology David A. Rasko, Vanessa Sperandio

Implement standards-based grading practices that help students succeed! Classroom assessment methods should help students develop to their full potential, but meshing traditional grading practices with students' achievement on standards has been difficult. Making lasting changes to grading practices requires both knowledge and willpower. Discover eight guidelines for good grading, recommendations for practical applications, and suggestions for implementing new grading practices as well as: ? The why's and the how-to's of implementing standards-based grading practices ? Tips from 48 nationally and internationally known authors and consultants ? Additional information on utilizing level scores rather than percentages ? Reflective exercises ? Techniques for managing grading more efficiently

Comprehensively covers the engineering aspects of corrosion and materials in hydrocarbon production This book captures the current understanding of corrosion processes in upstream operations and provides a brief overview of parameters and measures needed for optimum design of facilities. It focuses on internal corrosion occurring in hydrocarbon production environments and the key issues affecting its occurrence, including: the types and morphology of corrosion damage; principal metallic materials deployed; and mitigating measures to optimise its occurrence. The book also highlights important areas of progress and challenges, and looks toward the future of research and development to enable improved and economical design of facilities for oil and a gas production. Written for both those familiar and unfamiliar with the subject—and by two authors with more than 60 years combined industry experience—this book covers everything from Corrosion Resistant Alloys (CRAs) to internal metal loss corrosion threats, corrosion in injection systems to microbiologically influenced corrosion, corrosion risk analysis to corrosion and integrity management, and more, notably: Comprehensively covers the engineering aspects of corrosion and materials in hydrocarbon production Written by two, renowned experts in the field Offers practical guide to those unfamiliar with the subject whilst providing a focused roadmap to addressing the topics in a precise and methodical manner Covers all aspects of corrosion threat and remedial and mitigation measures in upstream hydrocarbon production applicable to sub-surface, surface, and transportation facilities Outlines technology challenges that need further research as a pre-cursor to moving the industry forward. Operational and Engineering Aspects of Corrosion and Materials in Hydrocarbon Production is an excellent guide for both practicing materials and corrosion engineers working in hydrocarbons production as well as those entering the area who may not be fully familiar with the subject.

The book details sources of thermal energy, methods of capture, and applications. It describes the basics of thermal energy, including measuring thermal energy, laws of thermodynamics that govern its use and transformation, modes of thermal energy, conventional processes, devices and materials, and the methods by which it is transferred. It covers 8 sources of thermal energy: combustion, fusion (solar) fission (nuclear), geothermal, microwave, plasma, waste heat, and thermal energy storage. In each case, the methods of production and capture and its uses are described in detail. It also discusses novel processes and devices used to improve transfer and transformation processes.

The discovery of antibiotics represented a key milestone in the history of medicine. However, with the rise of these life-saving drugs came the awareness that bacteria deploy defence mechanisms to resist these antibiotics, and they are good at it. Today, we appear at a crossroads between discovery of new potent drugs and omni-resistant superbugs. Moreover, the misuse of antibiotics in different industries has increased the rate of resistance development by providing permanent selective pressure and, subsequently, enrichment of multidrug resistant pathogens. As a result, antimicrobial resistance has now become an urgent threat to public health worldwide (<http://www.who.int/drugresistance/documents/surveillancereport/en/>). The development of multidrug resistance (MDR) in an increasing number of pathogens, including *Pseudomonas*, *Acinetobacter*, *Klebsiella*, *Salmonella*, *Burkholderia*, and other Gram-negative bacteria is a most severe issue. Membrane efflux pump complexes of the Resistance-Nodulation-cell Division (RND) superfamily play a key role in the development of MDR in these bacteria. RND pumps, together with other transporters, contribute to intrinsic and acquired resistance to most, if not all, of the antimicrobial compounds available in our drug arsenal. Given the enormous drug polyspecificity of MDR efflux pumps, studies on their mechanism of action are extremely challenging, and this has negatively impacted both the development of new antibiotics that are able to evade these efflux pumps as well as the design of pump inhibitors. The collection of articles in this eBook, published as a Research Topic in *Frontiers in Microbiology*, section of Antimicrobials, Resistance, and Chemotherapy, aims to update the reader about the latest advances on the structure and function of RND efflux transporters, their roles in the overall multidrug resistance phenotype of Gram-negative pathogens, and on strategies to inhibit their activities. A deeper understanding of the mechanisms by which RND efflux pumps, alone or synergistically with other efflux pumps, are able to limit the concentration of antimicrobial compounds inside

the bacterial cell, may pave the way for new, more directed, inhibitor and antibiotic design to ultimately overcome antimicrobial resistance by Gram-negatives.

Reviews the science and engineering of high-temperature corrosion and provides guidelines for selecting the best materials for an array of system processes High-temperature corrosion (HTC) is a widespread problem in an array of industries, including power generation, aerospace, automotive, and mineral and chemical processing, to name a few. This book provides engineers, physicists, and chemists with a balanced presentation of all relevant basic science and engineering aspects of high-temperature corrosion. It covers most HTC types, including oxidation, sulfidation, nitridation, molten salts, fuel-ash corrosion, H₂S/H₂ corrosion, molten fluoride/HF corrosion, and carburization. It also provides corrosion data essential for making the appropriate choices of candidate materials for high-temperature service in process conditions. A form of corrosion that does not require the presence of liquids, high-temperature corrosion occurs due to the interaction at high temperatures of gases, liquids, or solids with materials. HTC is a subject of increasing importance in many areas of science and engineering, and students, researchers, and engineers need to be aware of the nature of the processes that occur in high-temperature materials and equipment in common use today, especially in the chemical, gas, petroleum, electric power, metal manufacturing, automotive, and nuclear industries. Provides engineers and scientists with the essential data needed to make the most informed decisions on materials selection Includes up-to-date information accompanied by more than 1,000 references, 80% of which from within the past fifteen years Includes details on systems of critical engineering importance, especially the corrosion induced by low-energy radionuclides Includes practical guidelines for testing and research in HTC, along with both the European and International Standards for high-temperature corrosion engineering Offering balanced, in-depth coverage of the fundamental science behind and engineering of HTC, High Temperature Corrosion: Fundamentals and Engineering is a valuable resource for academic researchers, students, and professionals in the material sciences, solid state physics, solid state chemistry, electrochemistry, metallurgy, and mechanical, chemical, and structural engineers.

First-ever comprehensive introduction to the major new subject of quantum computing and quantum information. Advances in High Temperature Chemistry, Volume 3 reviews and evaluates some techniques in high temperature chemistry. Comprised of six chapters, this volume first discusses the principles concerned with high temperature chemistry. After introducing short-range ordering in crystals, this book shows how to interpret liquid alloy activity measurements. It also covers various techniques such as photoionization mass spectroscopy, photoelectron spectroscopy, and microwave spectroscopy. This book ends with a discussion on oxahalides and other transition elements. Researchers and high temperature chemists will find this book useful.

The global fine and speciality chemicals industry is a vitalsegment within the chemical value chain, catering to a multitude of societal and industrial needs. Regulatory, sustainability and consumer forces have been constantlyshaping the business fundamentals of this industry. Developingvalue creation strategies, which embed economic, environmental andsocial sustainability components, will need a comprehensiveassessment of business, scientific and technological challengesfacing the industry. Sustainable Value Creation in the Fine and SpecialityChemicals Industry assesses sustainable value creation optionsagainst the backdrop of global mega trends that are defini ng thepresent and future course of the industry. It discusses innovativestrategies in feedstocks, R&D, technology, manufacturing,resource management and the supply chain as well as thesignificance of the bio-based chemical economy in enablingssustainable value creation in the fine and speciality chemicalsindustry. Topics covered include: • Transformation in the fine and speciality chemicalsbusiness • Sustainable management: evolution, transitions andtools • Research and technology directions • Resource optimization strategies • Bio-based chemicals, specialities and polymers • Sustainable practices in the fine and speciality chemicalsindustry • Sustainable value creation strategies Sustainable Value Creation in the Fine and SpecialityChemicals Industry presents a comprehensive overview of strategic options for sustainability management in theglobal fine and speciality chemicals industry. It will be avaluable resource for chemists and chemical engineers involved inthe design and development of economically, environmentally andsocially sustainable practices for the future. Provides complete coverage of the syllabus requirements. This book offers information on Chemistry for IB Diploma course.

Natural products play crucial roles in modern drug development, and constitute a prolific source of novel lead compounds or pharmacophores for ongoing drug discovery programs. Chemistry and Pharmacology of Naturally Occurring Bioactive Compounds presents cutting-edge research in the chemistry of bioactive natural products and demonstrates how natural product research continues to make significant contributions in the discovery and development of new medicinal entities. In 21 chapters, this book highlights chemistry and pharmaceutical potential of natural products in modern drug discovery processes, and covers the synthesis and semi-synthesis of potentially bioactive natural products. Written for phytochemists, synthetic chemists, combinatorial chemists, as well as other practitioners and students in related fields, the book features chemical advances in naturally occurring organic compounds and describes their chemical transformations and structure–activity relationships.

This concise guide provides all the content you need for the IB Diploma in Biology at both Standard and Higher Level.* Follows the structure of the IB Programme exactly and include all the options* Each topic is presented on its own page for clarity* Standard and Higher Level material clearly indicated* Plenty of practice questions* Written with an awareness that English may not be the reader's first language

The first IUPAC Manual of Symbols and Terminology for Physicochemical Quantities and Units (the Green Book) of which this is the direct successor, was published in 1969, with the object of 'securing clarity and precision, and wider agreement in the use of symbols, by chemists in different countries, among physicists, chemists and engineers, and by editors of scientific journals'. Subsequent revisions have taken account of many developments in the field, culminating in

the major extension and revision represented by the 1988 edition under the simplified title Quantities, Units and Symbols in Physical Chemistry. This 2007, Third Edition, is a further revision of the material which reflects the experience of the contributors with the previous editions. The book has been systematically brought up to date and new sections have been added. It strives to improve the exchange of scientific information among the readers in different disciplines and across different nations. In a rapidly expanding volume of scientific literature where each discipline has a tendency to retreat into its own jargon this book attempts to provide a readable compilation of widely used terms and symbols from many sources together with brief understandable definitions. This is the definitive guide for scientists and organizations working across a multitude of disciplines requiring internationally approved nomenclature.

An authorised reissue of the long out of print classic textbook, Advanced Calculus by the late Dr Lynn Loomis and Dr Shlomo Sternberg both of Harvard University has been a revered but hard to find textbook for the advanced calculus course for decades. This book is based on an honors course in advanced calculus that the authors gave in the 1960's. The foundational material, presented in the unstarred sections of Chapters 1 through 11, was normally covered, but different applications of this basic material were stressed from year to year, and the book therefore contains more material than was covered in any one year. It can accordingly be used (with omissions) as a text for a year's course in advanced calculus, or as a text for a three-semester introduction to analysis. The prerequisites are a good grounding in the calculus of one variable from a mathematically rigorous point of view, together with some acquaintance with linear algebra. The reader should be familiar with limit and continuity type arguments and have a certain amount of mathematical sophistication. As possible introductory texts, we mention Differential and Integral Calculus by R Courant, Calculus by T Apostol, Calculus by M Spivak, and Pure Mathematics by G Hardy. The reader should also have some experience with partial derivatives. In overall plan the book divides roughly into a first half which develops the calculus (principally the differential calculus) in the setting of normed vector spaces, and a second half which deals with the calculus of differentiable manifolds.

An exciting textbook for students and teachers of the International Baccalaureate Diploma, written and developed by practising IB teachers

The 2nd edition of this work has been completely rewritten to add new examples & to better integrate the presentation of topics. Readers will see how the choice of topic influences question wording & how the questions asked influence the analysis.

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