

## A Concise Introduction To Logic 11th Edition

Mathematical logic developed into a broad discipline with many applications in mathematics, informatics, linguistics and philosophy. This text introduces the fundamentals of this field, and this new edition has been thoroughly expanded and revised.

Ethics: The Fundamentals explores core ideas and arguments in moral theory by introducing students to different philosophical approaches to ethics, including virtue ethics, Kantian ethics, divine command theory, and feminist ethics. The first volume in the new Fundamentals of Philosophy series. Presents lively, real-world examples and thoughtful discussion of key moral philosophers and their ideas. Constitutes an excellent resource for readers coming to the subject of ethics for the first time.

A concise introduction to logic that teaches you not only how reasoning works, but why it works How Logic Works is an introductory logic textbook that is different by design. Rather than teaching elementary symbolic logic as an abstract or rote mathematical exercise divorced from ordinary thinking, Hans Halvorson presents it as the skill of clear and rigorous reasoning, which is essential in all fields and walks of life, from the sciences to the humanities—anywhere that making good arguments, and spotting bad ones, is critical to success. Instead of teaching how to apply algorithms using “truth trees,” as in the vast majority of logic textbooks, How Logic Works builds on and reinforces the innate human skills of making and evaluating arguments. It does this by introducing the methods of natural deduction, an approach that teaches students not only how to carry out a proof and solve a problem but also what the principles of valid reasoning are and how they can be applied to any subject. The book also allows students to transition smoothly to more advanced topics in logic by teaching them general techniques that apply to more complicated scenarios, such as how to formulate theories about specific subject matter. How Logic Works shows that formal logic—far from being only for mathematicians or a diversion from the really deep questions of philosophy and human life—is the best account we have of what it means to be rational. By teaching logic in a way that makes students aware of how they already use it, the book will help them to become even better thinkers. Offers a concise, readable, and user-friendly introduction to elementary symbolic logic that primarily uses natural deduction rather than algorithmic “truth trees” Draws on more than two decades’ experience teaching introductory logic to undergraduates Provides a stepping stone to more advanced topics

"For all  $x$  is an introduction to sentential logic and first-order predicate logic with identity, logical systems that significantly influenced twentieth-century analytic philosophy. After working through the material in this book, a student should be able to understand most quantified expressions that arise in their philosophical reading. This book treats symbolization, formal semantics, and proof theory for each language. The discussion of formal semantics is more direct than in many introductory texts. Although for all  $x$  does not contain proofs of soundness and completeness, it lays the groundwork for understanding why these are things that need to be proven. Throughout the book, I have tried to highlight the choices involved in developing sentential and predicate logic. Students should realize that these two are not the only possible formal languages. In translating to a formal language, we simplify and profit in clarity. The simplification comes at a cost, and different formal languages are suited to translating different parts of natural language. The book is designed to provide a semester's worth of material for an introductory college course. It would be possible to use the book only for sentential logic, by skipping chapters 4-5 and parts of chapter 6"--Open Textbook Library.

"In his introduction to this most welcome republication (and second edition) of his logic text, Heil clarifies his aim in writing and revising this

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book: 'I believe that anyone unfamiliar with the subject who set out to learn formal logic could do so relying solely on [this] book. That, in any case, is what I set out to create in writing *An Introduction to First-Order Logic*.' Heil has certainly accomplished this with perhaps the most explanatorily thorough and pedagogically rich text I've personally come across. "Heil's text stands out as being remarkably careful in its presentation and illuminating in its explanations—especially given its relatively short length when compared to the average logic textbook. It hits all of the necessary material that must be covered in an introductory deductive logic course, and then some. It also takes occasional excursions into side topics, successfully whetting the reader's appetite for more advanced studies in logic. "The book is clearly written by an expert who has put in the effort for his readers, bothering at every step to see the point and then explain it clearly to his readers. Heil has found some very clever, original ways to introduce, motivate, and otherwise teach this material. The author's own special expertise and perspective—especially when it comes to tying philosophy of mind, linguistics, and philosophy of language into the lessons of logic—make for a creative and fresh take on basic logic. With its unique presentation and illuminating explanations, this book comes about as close as a text can come to imitating the learning environment of an actual classroom. Indeed, working through its presentations carefully, the reader feels as though he or she has just attended an illuminating lecture on the relevant topics!" —Jonah Schupbach, University of Utah

Accessible to all students with a sound background in high school mathematics, *A Concise Introduction to Pure Mathematics*, Fourth Edition presents some of the most fundamental and beautiful ideas in pure mathematics. It covers not only standard material but also many interesting topics not usually encountered at this level, such as the theory of solving cubic equations; Euler's formula for the numbers of corners, edges, and faces of a solid object and the five Platonic solids; the use of prime numbers to encode and decode secret information; the theory of how to compare the sizes of two infinite sets; and the rigorous theory of limits and continuous functions. New to the Fourth Edition Two new chapters that serve as an introduction to abstract algebra via the theory of groups, covering abstract reasoning as well as many examples and applications New material on inequalities, counting methods, the inclusion-exclusion principle, and Euler's phi function Numerous new exercises, with solutions to the odd-numbered ones Through careful explanations and examples, this popular textbook illustrates the power and beauty of basic mathematical concepts in number theory, discrete mathematics, analysis, and abstract algebra. Written in a rigorous yet accessible style, it continues to provide a robust bridge between high school and higher-level mathematics, enabling students to study more advanced courses in abstract algebra and analysis.

At the intersection of mathematics, computer science, and philosophy, mathematical logic examines the power and limitations of formal mathematical thinking. In this expansion of Leary's user-friendly 1st edition, readers with no previous study in the field are introduced to the basics of model theory, proof theory, and computability theory. The text is designed to be used either in an upper division undergraduate classroom, or for self study. Updating the 1st Edition's treatment of languages, structures, and deductions, leading to rigorous proofs of Godel's First and Second Incompleteness Theorems, the expanded 2nd Edition includes a new introduction to incompleteness through computability as well as solutions to selected exercises.

Logic Primer presents a rigorous introduction to natural deduction systems of sentential and first-order logic. Logic Primer presents a rigorous introduction to natural deduction systems of sentential and first-order logic. The text is designed to foster the student-instructor relationship. The key concepts are laid out in concise definitions and comments, with the expectation that the instructor will elaborate upon them. New to the second edition is the addition of material on the logic of identity in chapters 3 and 4. An innovative interactive Web site, consisting of a "Logic Daemon" and a "Quizmaster," encourages students to formulate their own proofs and links them to appropriate explanations in the

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book.

AN INTRODUCTION TO MACHINE LEARNING THAT INCLUDES THE FUNDAMENTAL TECHNIQUES, METHODS, AND APPLICATIONS  
Machine Learning: a Concise Introduction offers a comprehensive introduction to the core concepts, approaches, and applications of machine learning. The author—an expert in the field—presents fundamental ideas, terminology, and techniques for solving applied problems in classification, regression, clustering, density estimation, and dimension reduction. The design principles behind the techniques are emphasized, including the bias-variance trade-off and its influence on the design of ensemble methods. Understanding these principles leads to more flexible and successful applications. Machine Learning: a Concise Introduction also includes methods for optimization, risk estimation, and model selection—essential elements of most applied projects. This important resource: Illustrates many classification methods with a single, running example, highlighting similarities and differences between methods Presents R source code which shows how to apply and interpret many of the techniques covered Includes many thoughtful exercises as an integral part of the text, with an appendix of selected solutions Contains useful information for effectively communicating with clients A volume in the popular Wiley Series in Probability and Statistics, Machine Learning: a Concise Introduction offers the practical information needed for an understanding of the methods and application of machine learning. STEVEN W. KNOX holds a Ph.D. in Mathematics from the University of Illinois and an M.S. in Statistics from Carnegie Mellon University. He has over twenty years' experience in using Machine Learning, Statistics, and Mathematics to solve real-world problems. He currently serves as Technical Director of Mathematics Research and Senior Advocate for Data Science at the National Security Agency.

Provides an essential introduction to classical logic.

A much-needed guide to thinking critically for oneself and how to tell a good argument from a bad one. Includes topical examples from politics, sport, medicine, music, chapter summaries, glossary and exercises.

New corrected printing of a well-established text on logic at the introductory level.

David Morrow and Anthony Weston build on Weston's acclaimed A Rulebook for Arguments to offer a complete textbook for a course in critical thinking or informal logic. Features of the book include: Homework exercises adapted from a wide range of actual arguments from newspapers, philosophical texts, literature, movies, YouTube videos, and other sources. Practical advice to help students succeed when applying the Rulebook's rules. Suggestions for further practice that outline activities students can do by themselves or with classmates to improve their critical thinking skills. Detailed instructions for in-class activities and take-home assignments designed to engage students in critical thinking. An appendix on mapping arguments, a topic not included in the Rulebook, that introduces students to this vital skill in evaluating or constructing complex and multi-step arguments. Model responses to odd-numbered exercises, including commentaries on the strengths and weaknesses of selected model responses as well as further discussion of some of the substantive intellectual, philosophical, and ethical issues raised by the exercises. The third edition of Workbook contains the entire text of the recent fifth edition of the Rulebook, supplementing this core text with extensive further explanations and exercises. Updated and improved homework exercises ensure that the examples continue to resonate with today's students. Roughly one-third of the exercises have been replaced with updated or improved examples. A new chapter on engaging constructively in public debates—including five new sets of exercises—trains students to engage respectfully and constructively on controversial topics, an increasingly important skill in our hyper-partisan age. Three new critical thinking activities offer further opportunities to practice constructive dialogue.

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While there are already several well known textbooks on mathematical logic this book is unique in treating the material in a concise and streamlined fashion. This allows many important topics to be covered in a one semester course. Although the book is intended for use as a graduate text the first three chapters can be understood by undergraduates interested in mathematical logic. The remaining chapters contain material on logic programming for computer scientists, model theory, recursion theory, Godel's Incompleteness Theorems, and applications of mathematical logic. Philosophical and foundational problems of mathematics are discussed throughout the text.

This engaging work provides a concise introduction to the exciting world of computing, encompassing the theory, technology, history, and societal impact of computer software and computing devices. Spanning topics from global conflict to home gaming, international business, and human communication, this text reviews the key concepts unpinning the technology which has shaped the modern world. Topics and features: introduces the foundations of computing, the fundamentals of algorithms, and the essential concepts from mathematics and logic used in computer science; presents a concise history of computing, discussing the historical figures who made important contributions, and the machines which formed major milestones; examines the fields of human-computer interaction, and software engineering; provides accessible introductions to the core aspects of programming languages, operating systems, and databases; describes the Internet revolution, the invention of the smartphone, and the rise of social media, as well as the Internet of Things and cryptocurrencies; explores legal and ethical aspects of computing, including issues of hacking and cybercrime, and the nature of online privacy, free speech and censorship; discusses such innovations as distributed systems, service-oriented architecture, software as a service, cloud computing, and embedded systems; includes key learning topics and review questions in every chapter, and a helpful glossary. Offering an enjoyable overview of the fascinating and broad-ranging field of computing, this easy-to-understand primer introduces the general reader to the ideas on which the digital world was built, and the historical developments that helped to form the modern age.

This concise guide is designed to enable the reader to learn how to program in assembly language as quickly as possible. Through a hands-on programming approach, readers will also learn about the architecture of the Intel processor, and the relationship between high-level and low-level languages. This updated second edition has been expanded with additional exercises, and enhanced with new material on floating-point numbers and 64-bit processing. Topics and features: provides guidance on simplified register usage, simplified input/output using C-like statements, and the use of high-level control structures; describes the implementation of control structures, without the use of high-level structures, and often with related C program code; illustrates concepts with one or more complete program; presents review summaries in each chapter, together with a variety of exercises, from short-answer questions to programming assignments; covers selection and iteration structures, logic, shift, arithmetic shift, rotate, and stack instructions, procedures and macros, arrays, and strings; includes an introduction to floating-point instructions and 64-bit processing; examines machine language from a discovery perspective, introducing the principles of computer organization. A must-have resource for undergraduate students seeking to learn the fundamentals necessary to begin writing logically correct programs in a minimal amount of time, this work will serve as an ideal textbook for an assembly language course, or as a supplementary text for courses on computer organization and architecture. The presentation assumes prior knowledge of the basics of programming in a high-level language such as C, C++, or Java.

This book is a defense of political liberalism as a feminist liberalism. The first half of the book develops and defends a novel interpretation of political liberalism. It is argued that political liberals should accept a restrictive account of public reason and that political liberals' account of public justification is superior to the leading alternative, the convergence account of public justification. The view is defended from the charge

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that such a restrictive account of public reason will unduly threaten or undermine the integrity of some religiously oriented citizens and an account of when political liberals can recognize exemptions, including religious exemptions, from generally applicable laws is offered. In the second half of the book, it is argued that political liberalism's core commitments restrict all reasonable conceptions of justice to those that secure genuine, substantive equality for women and other marginalized groups. Here it is demonstrated how public reason arguments can be used to support law and policy needed to address historical sites of women's subordination in order to advance equality; prostitution, the gendered division of labor and marriage, in particular, are considered.

This book deals with two important branches of mathematics, namely, logic and set theory. Logic and set theory are closely related and play very crucial roles in the foundation of mathematics, and together produce several results in all of mathematics. The topics of logic and set theory are required in many areas of physical sciences, engineering, and technology. The book offers solved examples and exercises, and provides reasonable details to each topic discussed, for easy understanding. The book is designed for readers from various disciplines where mathematical logic and set theory play a crucial role. The book will be of interested to students and instructors in engineering, mathematics, computer science, and technology.

A layperson's guide to using logic in everyday life defines the elements of clear reasoning, discussing the uses of major argument types while explaining how to avoid common logic errors. Reprint. 12,500 first printing.

A Concise Introduction to LogicCengage Learning

This book offers a concise introduction to both proof-theory and algebraic methods, the core of the syntactic and semantic study of logic respectively. The importance of combining these two has been increasingly recognized in recent years. It highlights the contrasts between the deep, concrete results using the former and the general, abstract ones using the latter. Covering modal logics, many-valued logics, superintuitionistic and substructural logics, together with their algebraic semantics, the book also provides an introduction to nonclassical logic for undergraduate or graduate level courses. The book is divided into two parts: Proof Theory in Part I and Algebra in Logic in Part II. Part I presents sequent systems and discusses cut elimination and its applications in detail. It also provides simplified proof of cut elimination, making the topic more accessible. The last chapter of Part I is devoted to clarification of the classes of logics that are discussed in the second part. Part II focuses on algebraic semantics for these logics. At the same time, it is a gentle introduction to the basics of algebraic logic and universal algebra with many examples of their applications in logic. Part II can be read independently of Part I, with only minimum knowledge required, and as such is suitable as a textbook for short introductory courses on algebra in logic.

**NOT SOLD SEPARATELY.**

Unsurpassed for its clarity and comprehensiveness, Hurley's A CONCISE INTRODUCTION TO LOGIC is the #1 introductory logic textbook on the market. In this Twelfth Edition, Hurley continues to build upon the tradition of a lucid, focused, and accessible presentation of the basic subject matter of logic, both formal and informal. The edition's new Previews connect a section's content to real-life scenarios pertinent to students' lives, using everyday examples to translate new notions and terms into concepts that readers unfamiliar with the subject matter can relate to. Hurley's extensive, carefully sequenced exercises guide students toward greater proficiency with the skills they are learning.



Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Designed for students with no prior training in logic, INTRODUCTION TO LOGIC AND CRITICAL THINKING offers an accessible treatment of logic that enhances understanding of reasoning in everyday life. The text begins with an introduction to arguments. After some linguistic preliminaries, the text presents a detailed analysis of inductive reasoning and associated fallacies. This order of presentation helps to motivate the use of formal methods in the subsequent sections on deductive logic and fallacies. Lively and straightforward prose assists students in gaining facility with the sometimes challenging concepts of logic. By combining a sensitive treatment of ordinary language arguments with a simple but rigorous exposition of basic principles of logic, the text develops students' understanding of the relationships between logic and language, and strengthens their skills in critical thinking. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Introduction to Logic combines likely the broadest scope of any logic textbook available with clear, concise writing and interesting examples and arguments. Its key features, all retained in the Second Edition, include: • simpler ways to test arguments than those available in competing textbooks, including the star test for syllogisms • a wide scope of materials, making it suitable for introductory logic courses (as the primary text) or intermediate classes (as the primary or supplementary book) • engaging and easy-to-understand examples and arguments, drawn from everyday life as well as from the great philosophers • a suitability for self-study and for preparation for standardized tests, like the LSAT • a reasonable price (a third of the cost of many competitors) • exercises that correspond to the LogiCola program, which may be downloaded for free from the web. This Second Edition also: • arranges chapters in a more useful way for students, starting with the easiest material and then gradually increasing in difficulty • provides an even broader scope with new chapters on the history of logic, deviant logic, and the philosophy of logic • expands the section on informal fallacies • includes a more exhaustive index and a new appendix on suggested further readings • updates the LogiCola instructional program, which is now more visually attractive as well as easier to download, install, update, and use.

Unsurpassed for its clarity and comprehensiveness, A CONCISE INTRODUCTION TO LOGIC is the #1 introductory logic textbook on the market. In this 13th Edition, Patrick Hurley and new co-author Lori Watson continue to build upon the tradition of a lucid, focused, and accessible presentation of the basic subject matter of both informal and formal logic.

How Logical Are You? features connect a section's content to real-life scenarios pertinent to students' lives, using everyday examples to translate new notions and terms into concepts to which readers unfamiliar with the subject matter can relate. Living Logic, a new digital activity, allows students to apply the skills they learn to a real-world problem. The

text's extensive, carefully sequenced exercises guide students toward greater proficiency with the skills they are learning. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

"The best introduction to logic you will find."—Martin Gardner "Professor Bennett entertains as she instructs," writes Publishers Weekly about the penetrating yet practical Logic Made Easy. This brilliantly clear and gratifyingly concise treatment of the ancient Greek discipline identifies the illogical in everything from street signs to tax forms. Complete with puzzles you can try yourself, Logic Made Easy invites readers to identify and ultimately remedy logical slips in everyday life. Designed with dozens of visual examples, the book guides you through those hair-raising times when logic is at odds with our language and common sense. Logic Made Easy is indeed one of those rare books that will actually make you a more logical human being.

This revised and considerably expanded 2nd edition brings together a wide range of topics, including modal, tense, conditional, intuitionist, many-valued, paraconsistent, relevant, and fuzzy logics. Part 1, on propositional logic, is the old Introduction, but contains much new material. Part 2 is entirely new, and covers quantification and identity for all the logics in Part 1. The material is unified by the underlying theme of world semantics. All of the topics are explained clearly using devices such as tableau proofs, and their relation to current philosophical issues and debates are discussed. Students with a basic understanding of classical logic will find this book an invaluable introduction to an area that has become of central importance in both logic and philosophy. It will also interest people working in mathematics and computer science who wish to know about the area.

Provides a linguistic foundation for students of all majors Assisted by numerous pedagogical aids, A Concise Introduction to Linguistics, 4/e explains all concepts in a systematic way making complex linguistic topics as easy to learn as possible. This introductory title covers the core topics of linguistics, providing the information and concepts that will allow students to understand more detailed and advanced treatments of linguistics. This student-friendly and well-balanced overview of the field of introductory linguistics pays special attention to linguistic anthropology and reveals the main contributions of linguistics to the study of human communication and how issues of culture are relevant. Its workbook format contains well-constructed exercises in every chapter that allow students to practice key concepts.

Prostitution is often referred to as "oldest profession." Critics of this expression redescribe it as "the oldest oppression." Debates about how best to understand and regulate prostitution are bound up with difficult moral, legal, and political questions. Indeed, it can be approached from numerous angles--is buying and selling sex fundamentally wrong? How can it possibly be regulated? How can sex workers be protected, if they are allowed to work at all? In this concise, for-and-against volume, ethicists Lori Watson and Jessica Flanigan engage with each other on the nature and consequences of sex work, revealing new and profound ways in

which to understand it. The volume opens with a joint introduction, before Lori Watson first argues for a sex equality approach to prostitution in which buyers are criminalized and sellers are decriminalized, also known as the Nordic model. Watson defends the Nordic Model on the grounds that prostitution is an exploitative and unequal practice that only entrenches existing patterns of gendered injustice. Full decriminalization of prostitution only stymies existing occupational health and safety standards and securing worker autonomy and equality. Further, to Watson, drawing a distinction between sex trafficking and prostitution is irrelevant for public policy; what underpins them is demand, which fuels the inequalities of both. That is what needs to be addressed. In a rebuttal, Jessica Flanigan contends that sex work should be fully decriminalized because restrictions on the sale and purchase of sex violate the rights of sex workers and their clients. She argues that decriminalization is preferable to policies that could expose sex workers and their clients to criminal penalties, and leave them at the mercy of public officials. Putting these two views on sex work into conversation with one another, and opening up space for readers to weigh both approaches, the book provides a thorough, accessible exploration of the issues surrounding sex work, written with both sympathy and philosophical rigor.

CENGAGE ADVANTAGE BOOKS: UNDERSTANDING ARGUMENTS, CONCISE EDITION, 1E uses everyday life experiences to teach the basics of informal logic. By taking out the non-essential instruction, this edition hones in on the argument construction involved in day-to-day life, and how to do it better. Plus, to round out the discussion, CENGAGE ADVANTAGE BOOKS: UNDERSTANDING ARGUMENTS, CONCISE EDITION, 1E includes a three-chapter overview of formal logic as well. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. Includes summary statements of main points, worked-out examples with answers, and answers to additional exercises from the text.

Solutions manual to accompany Logic and Discrete Mathematics: A Concise Introduction This book features a unique combination of comprehensive coverage of logic with a solid exposition of the most important fields of discrete mathematics, presenting material that has been tested and refined by the authors in university courses taught over more than a decade. Written in a clear and reader-friendly style, each section ends with an extensive set of exercises, most of them provided with complete solutions which are available in this accompanying solutions manual.

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