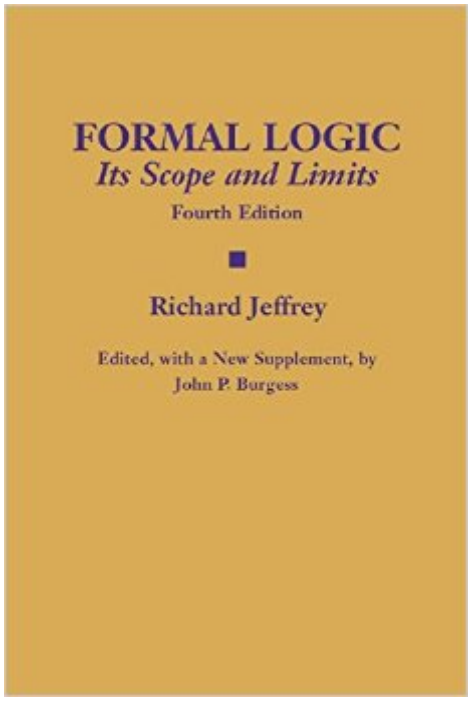
Formal Logic: Its Scope And Limits



Synopsis

The first beginning logic text to employ the tree method--a complete formal system of first-order logic that is remarkably easy to understand and use--this text allows students to take control of the nuts and bolts of formal logic quickly, and to move on to more complex and abstract problems.The tree method is elaborated in manageable steps over five chapters, in each of which its adequacy is reviewed; soundness and completeness proofs are extended at each step, and the decidability proof is extended at the step from truth functions to the logic of nonoverlapping quantifiers with a single variable, after which undecidability is demonstrated by example. The first three chapters are bilingual, with arguments presented twice, in logical notation and in English. The last three chapters consider the discoveries defining the scope and limits of formal methods that marked logicâ ™s coming of age in the 20th century: Godelâ ™s completeness and incompleteness theorems for first and second-order logic, and the Church-Turing theorem on the undecidability of first-order logic.This new edition provides additional problems, solutions to selected problems, and two new Supplements: Truth-Functional Equivalence reinstates material on that topic from the second edition that was omitted in the third, and Variant Methods, in which John Burgess provides a proof regarding the possibility of modifying the tree method so that it will always find a finite model when there is one, and another, which shows that a different modificationâ •once contemplated by Jeffrey--can result in a dramatic speed--up of certain proofs.

Book Information

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Customer Reviews

we used this book in my formal logic course; my professor absolutely loved this book and insisted that there exists no better text for studying formal logic...I beg to differ. well, while I have yet to find a great easy to understand text, I certainly didn't like this book. It's very short and concise..very brief. Personally, I prefer the lessons to be a bit more elaborate, with a variety of examples. I think it really depends on your taste and style of learning; this book would definitely appeal to some people, who like this short and to the point...but not for me. I prefer "the logic book" to this text.

this book as I used it for a quarter in one of my class turns out to be pretty bad compared to all the other ones I've seen dealing with similar matters. I am sorry to say this but it really doesn't deserve to be used by any professor for his students as an introductory text to the field of logic. The definitions in it are scattered, often important ones are left out. Contents made many assumptions on the reader's part to 'pick up' key concepts that are hidden inexplicitly in other pages in the book or it assume we already knew many concepts which is required to follow the book. An introductory text presented in the most unwelcoming face, or lets say, basic stuff disguised as something utterly elusive. Yes, he did put a lot of definitions in there, but by reading them on their own it's hard to know what he's talking about. The definitions don't stand alone on their own as definitons should be. Also, it is nice he formulated the tree building for a proofing method. but it's very in- robust, subject to many little exceptions and things that need to watch out for but all unmentioned in the text. And when the teacher tests you he puts those expections on the paper and you'll miss it. The book didn't help me get a good grade at all. I went to class and threw away the book after the first midterm and did much better then before.

ok I ended up with a B+ for the final (must've slipped) after getting an A on every single test in the course and my professor actually requested that I should tutor people. It's a very concise book so you have to really _understand_ every sentence before going to the next part. Put the effort into mastering the book and it will pay off big time

I used this book 30 years ago. The core of the book is the tree method proof system which has been a tremendous asset for me in the Discrete Math course I am taking this summer.If I were teaching a logic course, I would choose a more user friendly text but supplement it with the tree method for doing proofs. It greatly simplifies doing proofs once the premises and conclusion have been restated in quantified predicate form. You can thus avoid having to memorize and apply traditional patterns of syllogisms like "modus ponens" and "modus tollens"I might also use the

method in a Discrete Math course because it can be used with logical circuit design and set theory as well as with the predicate calculus.

I used this book in 1985 at U-Mass Boston when, as an engineer, I took Logic in the Philosophy department. It was awesome. The book was terse, but I liked it - uncluttered. Highly recommend it.

Better:Symbolic LogicWorse:Mathematical Logic (Graduate Texts in Mathematics)In between:Â Logic for MathematiciansFor me what is interesting is how the author deals with the halting problemcompared to:Meta Math!: The Quest for Omega"If the associated inference is valid, the program ’eventually’ halts."I note that Jeffery never mentions either entropy or information.Neither Jeffery or Chaitin mention the Grelling paradox:The Undecidability of Undecidability... the information involved in information.Both seem to think that GÃ¶del and his incompleteness is on their side...I tend to come down on Chaitin’s side as he has done a complete analysis of Turing machines and the halting problem.Either a problem can be solved by "mechanical/ Turing" analysisusing a computer or it can’t and there is a definite definable demarcation between the two that can be calculated.But I also think that self-organization principles (genetic algorithms,Monte Carlo algorithms and next generation processes) can decide problems where older logic and Turing machine methods fail.

This book has to be the worst logic book I have ever seen in my life. (And studying logic, I’ve seen my fair share.) If you want to learn formalized elementary logic, I would suggest going with one of the classics. This piece of junk, written by Richard Jeffrey, had me reeling in pain from page one to the index. His examples are boring and silly, his writing is pretentious and haughty, his problems are mindnumbing and from another era. The whole time you read this book, you wish you were sitting in the dentist’s chair getting your wisdom teeth out, because that would be a less painful experience. The way that Jeffrey goes about solving problems is archaeic ... I wonder if Jeffrey has ever read a real logic book in his life. His examples leave you constantly asking "What?". All in all, a very sad attempt at teaching first-order predicate logic.

While my copy of this book did not seem as inviting as the Schaum’s outline its tree method was used by professor McCarthy at uiuc in his explication of Boolos and Jeffries Computability and Logic.

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