CONTI	ENTS			
Part 1	Philo Phys A Wo Reac	of Illustrations		
Theory	and	Methodological Foundations		
CHAPTER 1	Fron	n Philosophy to Logic, From Logic to Medicine: damental Definitions and Objectives of this Book 3		
	1.1	Why Are Logic and Critical Thinking Needed in Our Practice, Research, and Communication? Why Read This Book?		
	1.2	Medicine as Art and Science		
	1.3	Philosophy in Medicine or Philosophy of Medicine?9		
	1.4	Philosophy of Science, Scientific Method, Evidence, and Evidence-based Medicine		
	1.5	Thinking, Logic, Reasoning, and Critical Thinking 15		
	1.6	Where in Medicine May We Find Practical Applications and Practical Uses of Philosophy, Logic, and Critical Thinking and Their Expected Benefits?		
	Refe	rences		
CHAPTER 2	Logic in a Nutshell I: Reasoning and Underlying Concepts What Is Required? Does It Make Sense?			
	2.1	A Brief Historical Note		
	2.2	Logic in General and Logic in Medicine		
	2.3	Reasoning and Arguments		

	2.4	Components and Architecture of Reasoning and Arguments: What Is Required?		
		2.4.1 Classical layout of arguments: premises and conclusions 29		
		2.4.2 Toulmin's modern scheme for layout of arguments 31		
		2.4.3 Reconstructing arguments from the natural language of daily life 36		
	2.5	Evaluation of Reasoning and Argument: Does It Make Sense?		
		2.5.1 Criteria for good reasoning 41		
		2.5.2 Sources of justified premises 46		
		2.5.3 Criteria for good arguments and good argumentation 49		
	2.6	Fallacies: Definition, Classification, and Examples		
		2.6.1 Definition of a fallacy 52		
		2.6.2 Classification of fallacies 53		
		2.6.3 Examples of fallacies 55		
	2.7			
	Refe	rences		
CHAPTER 3	Logic in a Nutshell II: Types of Reasoning and Arguments How Can We Reason and Argue Better?			
	3.1	Deduction, Induction, and Abduction		
	3.2	Classical Aristotelian Logic		
		3.2.1 Testing categorical syllogisms by diagramming 70		
		3.2.2 Syllogisms in everyday communication 76		
	3.3	Contemporary Logic		
	3.4	Historical Note on Indian Logic		
	3.5	Uncertainty and Probability in Medicine		
	3.6	Chaos Theory in Medicine		
	3.7	Fuzzy Sets and Fuzzy Logic83		
of the Control		3.7.1 Distinction between fuzzy logic and fuzzy set theory 83		
		3.7.2 Paradigm of fuzziness in medicine 84		
		3.7.3 Essentials of fuzzy reasoning in fuzzy logic 87		

	3.8	Conclu	isions: Implications of Logic for Medicine				
	References						
CHAPTER 4	Critical Thinking in a Nutshell What Is "Critical" and What Is Not?						
	4.1	Definit	tion of Critical Thinking				
	4.2	A Chec	cklist for Critical Thinking				
		4.2.1	Problem identification and analysis: What's in focus? 110				
		4.2.2	Clarification of meaning: What kind of study for what kind of question? What does this mean? 111				
		4.2.3	Gathering evidence: What basic relevant information can we obtain? 112				
ket		4.2.4	Assessing evidence: How good is our basic information? 112				
		4.2.5	Inferring conclusions: What follows? 114				
		4.2.6	Other considerations: What else is relevant to the problem? 114				
ipt		4.2.7	Overall judgment: What is our stand on the problem? 114				
	4.3	Health	cal Example of Critical Thinking to Solve a Problem: The Challenge of Complementary ternative Medicine (CAM)				
		4.3.1	Identification of the problem 118				
		4.3.2	Analysis of the problem 120				
		4.3.3	Clarification of meaning: What is CAM? 121				
		4.3.4	Arguments for CAM interventions 125				
		4.3.5	Explanations of the popularity of CAM 128				
		4.3.6	Methods of investigating claims made by CAM proponents 129				
	.285	4.3.7	Assessment of evidence in CAM studies 130				
		4.3.8	Cause-effect reasoning in CAM studies 131				
		4.3.9	Systematic reviews and meta-analyses of CAM research 132				
		4.3.10	Alternative methods of evaluating CAM claims 132				
		4.3.11	Summary remarks about CAM 133				
		4.3.12	Complementary and alternative medicine				

	4.4	Conclusions		
	. Kei	erences		
Part 2		The first of the second of		
Practio	cal A	pplications		
CHAPTER 5	Logic in Research: Critical Writing and Reading of Medical Articles What Do These Results Really Prove? How to Write and Read Discussion and Conclusions Sections			
	5.1	Classification and Structure of Medical Articles		
	5.2	Causes and Their Effects		
		5.2.1 Historical milestones 153		
		5.2.2 Contributions of present generations 154		
		5.2.3 How a cause-effect relationship is demonstrated or refuted 157		
	5.3	Medical Articles as Arguments		
10.20		5.3.1 Warrants for conclusions of a causal relationship 162		
		5.3.2 Arguments at the core of Discussion and Conclusions sections of medical articles 163		
	5.4	Fallacies in Causal Reasoning and Argument		
	5.5	Conclusions and Remedies to Consider		
	Refe	rences		
CHAPTER 6	Talk	c and Critical Thinking in a Clinician's Daily Practice: ing and Listening to Colleagues and Patients Clear Enough? You've Got It Right!		
	6.1	Patient Logic		
	6.2	Physician Logic and Reasoning		
		6.2.1 Building up the history of the case and making a clinical examination 186		
		6.2.2 Making a diagnosis 187		
		6.2.3 Treatment 196		
		6.2.4 Prognosis and risk assessment 199		

		6.2.5 Making decisions about a particular patient in a particular setting: phronesis in medicine? 202					
	6.3	Logic in Communication with Patients					
		6.3.1 Understanding patients' statements and reasoning 207					
		6.3.2 Assessment and diagnosis of psychiatric patients 208					
	6.4	Logic in Communication with Peers					
		6.4.1 Verbal communication: rounds and consults 210					
		6.4.2 Written communication: Hospital and office charts and reports 215					
	6.5	Conclusions: Logic in Communication with the Outside World					
	Refe	nces					
	ricie	11000					
CHAPTER 7	Com	nunicating with the Outside World					
		Are We on the Same Wavelength?					
	7.1	Our Points of Contact in the Community					
	7.2	Physicians in Courts of Law: Their Contributions to Decision-making in Tort Litigation					
		7.2.1 What to expect when dealing with decision-making legal bodies 230					
		7.2.2 Cause-effect challenges: General and specific 231					
		7.2.3 Emergence of clinical guidelines and their role in courts of law 239					
		7.2.4 Reflective thinking in courts of law 241					
	7.3	Argumentation About Cases Before Worker Compensation Boards and Other Civic Bodies					
	7.4	Dealing with Health Problems in the Media and on the Political or Entertainment Stage					
	7.5	Conclusions					
	Refe	nces					
	11010						
		uding Remarks251					
	Glos	ry					
	Abo	the Authors					
	Inde	281					