

Brief Contents

UNIT 1 The Foundations of Microbiology	CHAPTER 1	The Microbial World 1
	CHAPTER 2	Microbial Cell Structure and Function 34
	CHAPTER 3	Microbial Metabolism 73
	CHAPTER 4	Molecular Information Flow and Protein Processing 102
UNIT 2 Microbial Growth and Regulation	CHAPTER 5	Microbial Growth and Its Control 137
	CHAPTER 6	Microbial Regulatory Systems 173
	CHAPTER 7	Molecular Biology of Microbial Growth 202
	CHAPTER 8	Viruses and Their Replication 223
UNIT 3 Genomics and Genetics	CHAPTER 9	Microbial Systems Biology 241
	CHAPTER 10	Viral Genomics, Diversity, and Ecology 274
	CHAPTER 11	Genetics of <i>Bacteria</i> and <i>Archaea</i> 306
	CHAPTER 12	Biotechnology and Synthetic Biology 332
UNIT 4 Microbial Evolution and Diversity	CHAPTER 13	Microbial Evolution and Systematics 363
	CHAPTER 14	Metabolic Diversity of Microorganisms 392
	CHAPTER 15	Functional Diversity of Microorganisms 451
	CHAPTER 16	Diversity of <i>Bacteria</i> 494
	CHAPTER 17	Diversity of <i>Archaea</i> 530
	CHAPTER 18	Diversity of Microbial <i>Eukarya</i> 557
UNIT 5 Microbial Ecology and Environmental Microbiology	CHAPTER 19	Taking the Measure of Microbial Systems 583
	CHAPTER 20	Microbial Ecosystems 615
	CHAPTER 21	Nutrient Cycles 651
	CHAPTER 22	Microbiology of the Built Environment 672
	CHAPTER 23	Microbial Symbioses with Microbes, Plants, and Animals 699
UNIT 6 Microbe–Human Interactions and the Immune System	CHAPTER 24	Microbial Symbioses with Humans 729
	CHAPTER 25	Microbial Infection and Pathogenesis 757
	CHAPTER 26	Innate Immunity: Broadly Specific Host Defenses 775
	CHAPTER 27	Adaptive Immunity: Highly Specific Host Defenses 798
	CHAPTER 28	Clinical Microbiology and Immunology 830
Unit 7 Infectious Diseases and Their Transmission	CHAPTER 29	Epidemiology 866
	CHAPTER 30	Person-to-Person Bacterial and Viral Diseases 887
	CHAPTER 31	Vectorborne and Soilborne Bacterial and Viral Diseases 919
	CHAPTER 32	Waterborne and Foodborne Bacterial and Viral Diseases 939
	CHAPTER 33	Eukaryotic Pathogens: Fungi, Protozoa, and Helminths 958