

1 Introduction 1

- 1.1 Background Ideas 2
- 1.2 Why Study Engineering Ethics? 2
- 1.3 Engineering Is Managing the Unknown 3
- 1.4 Personal vs. Professional Ethics 4
- 1.5 The Origins of Ethical Thought 4
- 1.6 Ethics and the Law 4
- 1.7 Ethics Problems Are Like Design Problems 5
- 1.8 Case Studies 6
- Summary 15
- References 15
- Problems 16

2 Professionalism and Codes of Ethics 18

- 2.1 Introduction 19
- 2.2 Is Engineering a Profession? 19
- 2.3 Codes of Ethics 24
- Key Terms 33
- References 34
- Problems 34

3 Understanding Ethical Problems 37

- 3.1 Introduction 38
- 3.2 A Brief History of Ethical Thought 38
- 3.3 Ethical Theories 39
- 3.4 Non-Western Ethical Thinking 46
- Key Terms 53
- References 53
- Problems 53

4 Ethical Problem-Solving Techniques 56

- 4.1 Introduction 57
- 4.2 Analysis of Issues in Ethical Problems 57
- 4.3 Line Drawing 59
- 4.4 Flow Charting 62
- 4.5 Conflict Problems 63
- 4.6 An Application of Problem-Solving Methods: Bribery/Acceptance of Gifts 65
- Key Terms 71
- References 71
- Problems 72

5 Risk, Safety, and Accidents 74

- 5.1 Introduction 75
- 5.2 Safety and Risk 75
- 5.3 Accidents 79
- Key Terms 98
- References 98
- Problems 99

6 The Rights and Responsibilities of Engineers 103

- 6.1 Introduction 104

6.2 Professional Responsibilities 104

6.3 Professional Rights 106

6.4 Whistle-Blowing 108

Key Terms 120

References 120

Problems 121

7 Ethical Issues in Engineering Practice 124

7.1 Introduction 125

7.2 Environmental Ethics 125

7.3 Computer Ethics 127

7.4 Ethics and Research 135

Key Terms 143

References 143

Problems 144

8 Doing the Right Thing 150

References 155

Problems 155

**APPENDIX A Codes of Ethics of Professional
Engineering Societies 157**

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) 157

National Society of Professional Engineers (NSPE) 158

American Society of Mechanical Engineers (ASME) 163

American Society of Civil Engineers (ASCE) 164

American Institute of Chemical Engineers (AIChE) 168

Japan Society of Civil Engineers 169

APPENDIX B Bibliography 172

General Books on Engineering Ethics 172

Journals with Articles on Engineering Ethics and Cases 173

Websites 173

Index 174