Contents

Contents iii

Preface v

Preface to Second Edition vii

Preface to First Edition ix

Introductory Material 1

1 Notes to the Reader 3
2 A Tour of C++ 21
3 A Tour of the Standard Library 45

Part I: Basic Facilities 67

4 Types and Declarations 69
5 Pointers, Arrays, and Structures 87
6 Expressions and Statements 107
7 Functions 143
8 Namespaces and Exceptions 165
9 Source Files and Programs 197

Part II: Abstraction Mechanisms **221**

10 Classes 223
11 Operator Overloading 261
12 Derived Classes 301
13 Templates 327
14 Exception Handling 355
15 Class Hierarchies 389

Part III: The Standard Library **427**

16 Library Organization and Containers 429
17 Standard Containers 461
18 Algorithms and Function Objects 507
19 Iterators and Allocators 549
20 Strings 579
21 Streams 605
22 Numerics 657

Part IV: Design Using C++ **689**

23 Development and Design 691
24 Design and Programming 723
25 Roles of Classes 765

Appendices **791**

A The C++ Grammar 793
B Compatibility 815
C Technicalities 827

Index **869**