# CONTENTS

## CHAPTER 1  Accounting Information Systems and the Accountant /

1. **Introduction: Why Study Accounting Information Systems?**  

1.1 Careers in Accounting Information Systems:

1.2 Traditional Accounting Career Opportunities:

1.3 Accounting and IT:

1.4 What Are Accounting Information Systems?:

1.5 What's New in Accounting Information Systems?:

## CHAPTER 2  Accounting on the Internet /

2.1 Introduction:

2.2 The Internet and World Wide Web:

2.3 XBRL—Financial Reporting on the Internet:

2.4 Electronic Business:

2.5 Privacy and Security on the Internet:

## CHAPTER 3  Information Technology and AISs /

3.1 Introduction:

3.2 The Importance of Information Technology to Accountants:

3.3 Input, Processing, and Output Devices:

3.4 Secondary Storage Devices:

3.5 Data Communications and Networks:

3.6 Computer Software:

## CHAPTER 4  Accounting and Data Analytics /

4.1 Introduction:

4.2 Big Data:

4.3 Analyzing Data:

4.4 Enabling Technologies and Tools:

4.5 Data Analytics and the Accounting Profession:

---

**Security**: 53

**Spam, Phishing, Spoofing, and Ransomware**: 53

**Firewalls, Intrusion Detection Systems, Value-Added Networks, and Proxy Servers**: 54

**Data Encryption**: 57

**Digital Signatures and Digital Time Stamping**: 58

---

**CHAPTER 3  Information Technology and AISs/ 69**

3.1 Introduction/ 69

3.2 The Importance of Information Technology to Accountants/ 70

3.3 Input, Processing, and Output Devices/ 72

3.4 Secondary Storage Devices/ 81

3.5 Data Communications and Networks/ 85

3.6 Computer Software/ 93

---

**CHAPTER 4  Accounting and Data Analytics/ 109**

4.1 Introduction/ 109

4.2 Big Data/ 110

4.3 Analyzing Data/ 112

4.4 Enabling Technologies and Tools/ 118

4.5 Data Analytics and the Accounting Profession/ 123
9.3 The Production Process/ 272
   Objectives of the Production Process/ 272
   Inputs to the Production Process/ 277
   Outputs of the Production Process/ 278
9.4 The Financing Process/ 279
   Objectives of the Financing Process/ 279
   Inputs to the Financing Process/ 281
   Outputs of the Financing Process/ 281
9.5 Business Processes in Special Industries/ 282
   Professional Service Organizations/ 283
   Not-for-Profit Organizations/ 283
   Health Care Organizations/ 285
9.6 Business Process Reengineering/ 287
   Why Reengineering Sometimes Fails/ 288

CHAPTER 10 Cybercrime, Fraud, and Ethics/ 296
10.1 Introduction/ 296
10.2 Cybercrime and Fraud/ 297
   Distinguishing between Cybercrime and Fraud/ 297
   Cybercrime Legislation/ 300
   Cybercrime Statistics/ 303
10.3 Examples of Cybercrime/ 304
   Compromising Valuable Information/ 304
   Hacking/ 305
   Denial of Service/ 307
10.4 Preventing and Detecting Cybercrime and Fraud/ 309
   Enlist Top-Management Support/ 309
   Increase Employee Awareness and Education/ 309
   Assess Security Policies and Protect Passwords/ 310
   Implement Controls/ 311
   Identify Computer Criminals/ 312
   Maintain Physical Security/ 313
   Recognize the Symptoms of Employee Fraud/ 314
   Use Data-Driven Techniques/ 316
   Employ Forensic Accountants/ 316
10.5 Ethical Issues, Privacy, and Identity Theft/ 317
   Ethical Issues and Professional Associations/ 317
   Meeting the Ethical Challenges/ 318
   Privacy/ 319
   Company Policies with Respect to Privacy/ 320
   Identity Theft/ 320

CHAPTER 11 Information Technology Auditing/ 329
11.1 Introduction/ 329
11.2 The Audit Function/ 330
   Internal versus External Auditing/ 330
   Information Technology Auditing/ 331
   Evaluating the Effectiveness of Information Systems Controls/ 335
11.3 The Information Technology Auditor’s Toolkit/ 337
   Auditing Software/ 337
   People Skills/ 340
11.4 Auditing Computerized Accounting Information Systems/ 340
   Testing Computer Programs/ 341
   Validating Computer Programs/ 342
   Review of Systems Software/ 343
   Validating Users and Access Privileges/ 344
   Continuous Auditing/ 345
11.5 Information Technology Auditing Today/ 347
   Information Technology Governance/ 347
   The Sarbanes–Oxley Act of 2002/ 347
   Auditing Standard No. 2201 (AS 2201)/ 349
   ISACA Information Technology Assurance Framework/ 350
   IIA’s Global Technology Audit Guides and Guide to the Assessment of IT Risk series/ 351

CHAPTER 12 Documenting Accounting Information Systems/ 358
12.1 Introduction/ 358
12.2 Why Documentation is Important/ 359
12.3 Primary Documentation Tools/ 362
   Data Flow Diagrams/ 363
   Document Flowcharts/ 368
   System Flowcharts/ 372
12.4 Other Documentation Tools/ 377
   Program Flowcharts/ 378
   Decision Tables and Decision Trees/ 379
   Software Tools for Graphical Documentation and SOX Compliance/ 381
12.5 End-User Computing and Documentation/ 383
   The Importance of End-User Documentation/ 383
   Policies for End-User Computing and Documentation/ 385

CHAPTER 13 Developing and Implementing Effective Accounting Information Systems/ 398
13.1 Introduction/ 398
13.2 The Systems Development Life Cycle/ 399
   Four Stages in the Systems Development Life Cycle/ 399
   Systems Studies and Accounting Information Systems/ 401
13.3 Systems Planning/ 401
   Planning for Success/ 401
   Investigating Current Systems/ 403
13.4 Systems Analysis/ 403
   Understanding Organizational Goals/ 403
CHAPTER 14 Database Design/ 434
14.1 Introduction/ 434
14.2 An Overview of Databases/ 434
   What Is a Database?/ 435
   Significance of Databases/ 435
   Storing Data in Databases/ 437
   Additional Database Issues/ 439
14.3 Steps in Developing a Database Using the Resources, Events, and Agents (REA) Approach/ 442
   Step 1—Identify Business and Economic Events/ 443
   Step 2—Identify Entities/ 444
   Step 3—Identify Relationships/ 444
   Step 4—Create Entity—Relationship Diagrams/ 445
   Step 5—Identify Attributes of Entities/ 446
   Step 6—Convert E-R Diagrams into Database Tables/ 447
14.4 Normalization/ 449
   First Normal Form/ 449
   Second Normal Form/ 450
   Third Normal Form/ 451

CHAPTER 15 Organizing and Manipulating the Data in Databases/ 462
15.1 Introduction/ 462
15.2 Creating Database Tables in Microsoft Access/ 463
   Database Management Systems/ 463
   Using Microsoft Access/ 463
   Creating Database Tables/ 464
   Creating Relationships/ 466
15.3 Entering Data in Database Tables/ 468
   Creating Records/ 468
   Ensuring Valid and Accurate Data Entry/ 469
   Tips for Creating Database Tables and Records/ 472
15.4 Extracting Data from Databases: Data Manipulation Languages (DMLs)/ 473
   Creating Select Queries/ 473
   Creating Action Queries/ 477
   Guidelines for Creating Queries/ 478
   Structured Query Language (SQL)/ 478
   Sorting, Indexing, and Database Programming/ 479

CHAPTER 16 Database Forms and Reports/ 490
16.1 Introduction/ 490
16.2 Forms/ 490
   Creating Simple Forms/ 492
   Using Forms for Input and Output Tasks/ 496
   Subforms: Showing Data from Multiple Tables/ 497
   Concluding Remarks about Forms/ 498
16.3 Reports/ 498
   Creating Simple Reports/ 499
   Creating Reports with Calculated Fields/ 502
   Creating Reports with Grouped Data/ 504
   Concluding Remarks about Reports/ 506

Glossary/ (Available online at http://www.wiley.com/college/simkin)

Index/ 516