**Instructor’s Resource Manual**

**Accounting Information Systems**

**2nd Edition**

Vernon J. Richardson

C. Janie Chang

Rodney Smith

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**TO THE INSTRUCTOR**

This guide includes suggested assignment schedules, topical outlines, chapter comments and observations, and suggested team exercises based on the authors experience teaching AIS.

**Assignment Suggestions.** This textbook is not designed to be a survey of AIS. Instead, it is intended to develop student skills to support accountant’s roles as users, managers, designers, and evaluators of information technology. Consequently, we recommend that the assignments include the problems that will develop these skills and require critical thinking.

**Brief Topical Outlines.** These outlines are designed to assist instructors in coordinating classroom discussions with material covered in the textbook and the PowerPoints. The Brief Topical Outlines identify topics that we believe are sufficiently important to require some classroom discussion. The outlines also include references to illustrations in the textbook, PowerPoints, questions, problems, and cases that may serve as useful supplements to your class presentations.

**Comments and Observations.** You will probably find that our comments and observations suggest coverage of more topics than your time will allow. This is because our comments are drawn from the experiences of two instructors over many semesters. Therefore, we suggest that you borrow from our comments that which appeals to you and discard that which does not.

**Course Description and Objectives.**

For information only, we use the following course description and objectives:

# Course Description

The overall course objective is to familiarize students with the way in which systems are used in organizations to provide decision-relevant information and to enable them to understand how systems are designed and implemented to meet organizational needs. In this context, accounting systems includes all the tools and practices employed in enterprise accounting in the broadest sense. The content and objectives of this course are most applicable to those students heading for (non-technical) general accounting or related management careers in larger enterprises or with firms that audit and assist those firms. After completing this course, students should have a sound basis for understanding the functioning of any information system they may encounter in practice, and they should be able to relate its features to the conceptual enterprise framework presented in this course. This should allow them to be informed consumers and users of high quality accounting and enterprise software.

Successful enterprises are able to design, develop, and employ information systems that meet the needs of their managers/decision-makers in accounting, finance, marketing, supply chain logistics, etc. Accountants perform four roles with respect to information systems. They are 1) users, 2) designers, 3) managers, and 4) evaluators. To perform these four roles effectively, accountants need to understand the strategic objectives and business processes of the enterprise. They also need to understand capabilities and limitations inherent in current technology. Perhaps most importantly, they also need to understand how technology may be employed to further the strategic objectives of the firm.

The most common systems in use today to support enterprise operations and decision-making are database systems. This course therefore emphasizes 1) hands-on experience with a database system, i.e., Microsoft ACCESS, 2) conceptual systems analysis and design techniques, 3) how systems designs are implemented in the current technology, and 4) how this material relates to overall accounting objectives.

Since the course emphasizes the design of information systems to support decision makers, the course content is similar to the kind of material that you might find in an information systems course. The course is, however, tailored to provide information about technology that accountants should know to be successful in contemporary business organizations. The course requires conceptual thinking, visual thinking, and imagination—rather than computational skills and memorization.

Course Objectives

After completing this course, students should be able to:

1. Describe in detail the purpose of accounting information systems and the links between business structure, processes, performance, and information systems.
2. Analyze information flows in an organization and develop conceptual models of organizational relationships.
3. Use the software package ACCESS™ to implement the conceptual models of information systems, and demonstrate how that knowledge transfers to a variety of comparable systems and software packages.
4. Identify organizational risk and control issues, incorporate those issues into conceptual models, and explain how information technology changes control techniques.
5. Develop support for business decisions based on a systematic and objective consideration of the problems, issues, and relative merits of feasible alternatives using appropriate decision-modeling techniques:
   1. Identify problems, potential solution approaches, and related uncertainties. Organize and evaluate information, alternatives, cost/benefits, risks and rewards of alternative scenarios.
   2. Employ model-building techniques to quantify problems or test solutions.
6. Use and apply prevalent business-related technology:
   1. Appropriately use electronic spreadsheets, database applications, and other software to build models and relational databases.
   2. Recognize commonly used information architectures.
   3. Describe risks and related issues about privacy, intellectual property rights, and security considerations related to electronic commerce and communications.
   4. Develop and communicate reasonable recommendations for technology use in organizations.

While we in no way assure you that these course objectives will be accepted by any particular AACSB accreditation team, if you wish, you may use them as a starting point in developing your own course description and objectives.

Vernon J. Richardson

C. Janie Chang

Rodney Smith

**ASSIGNMENT SCHEDULE INCLUDING ALL CHAPTERS—Assignments**

|  |  |  |  |
| --- | --- | --- | --- |
| **Chapter** | **Topic** | **Written Assignment** | **Objective Questions** |
| 1 | Accounting Information Systems and Firm Value | Problems 1-1, 1-2 | MC 1-1 to 1-15 |
| 2 | Accountants as Business Analysts | Problem 2-1, 2-3, 2-4, 2-5 | MC 2-1 to 2-22 |
| 3 | Data Modeling | Problem 3-1, 3-3, 3-5. 3-6 | MC 3-1 to 3-22 |
| 4 | Relational Databases and Enterprise Systems | Problem 4-2, 4-3, 4-8 and 4-9 | MC 4-1 to 4-15 |
| 5 | Sales and Collections Business Process | Problem 5-3 | MC 5-1 to 5-10 |
| 6 | Purchase and Payments Business Process | Problem 6-2 and 6-3 | MC 6-1 to 6-10 |
| 7 | Conversion Business Process | Problem 7-1 | MC 7-1 to 7-10 |
| 8 | Integrated Project | N/A | N/A |
| 9 | Data Analytics in Accounting | Problems 9-1, 9-5, 9-7 to 9-9 | MC 9-1 to 9-18 |
| 10 | Reporting Processes and eXtensible Business Reporting Language (XBRL) | Problems 10-1, 10-4 | MC 10-1 to 10-10 |
| 11 | Accounting Information Systems and Internal Controls | Problem 11-5, 11-6 | MC 11-1 to 11-15 |
| 12 | Information Security and Computer Fraud | Problem 12-9 | MC 12-1 to 12-15 |
| 13 | Monitoring and Auditing AIS | Problem 13-6 | MC 13-1 to 13-15 |
| 14 | The Balanced Scorecard and Business Value of Information Technology | Problem 14-1, 14-2, and 14-4 | MC 14-1 to 14-8 |
| 15 | Evaluating AIS Investments | Problem 15-2 | MC 15-1 to 15-10 |
| 16 | The Systems Development Life Cycle and Project Management: Addressing the Challenges of Building AIS Systems | Problems 16-3, 16-5 | MC 16-1 to 16-10 |

### PRESENTATION SUGGESTIONS

**CHAPTER 1**

**Accounting Information Systems and Firm Value**

**Brief Topical Outline**

A. Introduction

1. Accountants as Business Analysts (PowerPoint 1-2)

2. Definition of Accounting Information Systems (PowerPoints 1-3,4,5)

3. Simple Information System (PowerPoint 1-6)

4. Attributes of Useful Information (PowerPoint 1-7)

5. Qualities of Useful Information (PowerPoint 1-8 – 1-12)

B. Role of Accountants in AIS

1. Varied Accountant Roles in an AIS (PowerPoint 1-13)

2. Certifications in AIS: CISA, CITP, CIA (PowerPoint 1-14)

C. Value Chain (PowerPoint 1-15)

1. AIS Create Value via Primary Activities (PowerPoint 1-16)

2. AIS Create Value via Supporting Activities (PowerPoint 1-17)

D. AIS and Internal Business Processes – Enterprise Systems (PowerPoints 1-18,19)

E. AIS and External Business Processes – (PowerPoints 1-20)

1. Supply Chain (PowerPoints 1-21, 22)

2. Customer Relationship Management (PowerPoint 1-23)

F. AIS Impact on Firm Profitability (PowerPoints 1-24, 25)

G. Questions? (PowerPoints 1-26, 27)

**Comments and Observations**

In our first class meeting, after passing out the syllabus and talking through the class schedule, I start the class by saying, what is it we do as accountants? We don’t necessarily sell more products, or deliver services to outside clients, but we do increasingly help address business opportunities. These opportunities might include a decision whether to outsource a business function, produce one product or another based on which is most profitable, or pursue an attempt to minimize taxes. To address such a business opportunity, accountants need to decide what information is needed, build an information system to gather the necessary information, and then analyze that information to offer helpful advice to management.

After defining the accounting information systems and talking about the qualities of useful information, I often have a little exercise where I have students predict the weather – some can use technology and others cannot. We talk about how reliable and relevant that information is to this class, their career and to them personally.

All of the students seem to understand the CPA is and what it might do for their careers. They are less certain about what careers in AIS and the respective certifications include. I like spending a few minutes talking about each one individually and telling what they do. Our particular set of students is as likely to work for a local corporation as they are to work in public accounting. That leaves us plenty of examples of what those with interests, training and potentially certifications in AIS-related accounting careers might spend their time doing (internal audit, internal controls testing, systems analysis and design, etc.).

Most of the students have familiarity with the value chain from previous core business courses. I like to show how each primary and supporting activity might be affected by the AIS, in particular enterprise systems internally and supply chain and customer relationship management systems externally. These systems increasingly serve as the means to gather information, interpret that information and then give it to the interested parties within the company. Related to this, I like to put up the income statement and show line-by-line where the AIS might be able to create revenues or minimize expenses by providing important information.

I try to end the class by going back to the notion that accountants create value by being business analysts. That is, they decide what information needs to be collected, build or ensure that the information system is collecting it, analyze the collected information to meet its intended purpose.

I believe this chapter provides a good introduction for what will be included in the textbook and is easily accessible to the students.

**Suggested Team Exercise**

Just before the discussion of the AIS impact on firm profitability, I think it is helpful for the students to meet in little groups and see if they can address that topic. I encourage them to go line-by-line through the income statement and think about the AIS’ impact. If you cover AIS and its impact on internal and external business processes, the students should be in a good position to address this query. I also feel like it is a good way to connect with the financial accounting classes the students have taken to date.

**CHAPTER 2**

Accountants as Business Analysts

**Brief Topical Outline**

1. Changing Roles of Accountants in Business (PowerPoints 2-3 - 2-6)
   1. Basic stewardship, reporting, and auditing functions
   2. Increasingly active role in strategic management roles
   3. Rapid changes in technology increase availability of data
   4. Entry-level accountants must understand how business delivers value to customers and stakeholders
2. Business Process Documentation (PowerPoints 2-7 – 2-12)
   1. Definitions (PowerPoint 2-7)
      1. Business Process
      2. Business Analysis
      3. Business Model
      4. Documentation
   2. Purposes of Documentation (PowerPoints 2-8 - 2-11)
   3. Value of Business Models (PowerPoint 2-12)
3. Types of Business Models (PowerPoint 2-13)
   1. Activity Models
   2. Structure Models
4. Background and Purpose of Activity Models (PowerPoints 2-14 – 2-16)
5. Business Process Modeling Notation (BPMN) (PowerPoints 2-17 – 2-27)
   1. Building Blocks for BPMN Diagrams (PowerPoints 2-18 – 2-21)
   2. Example of Business Process Diagram (PowerPoint 2-22)
   3. Identifying Participants in Business Process Diagrams (PowerPoints 2-23 – 2-24)
   4. Messages in BPMN (PowerPoints 2-25 – 2-26)
   5. Best Practices in Preparing BPMN Diagrams (PowerPoint 2-27)
6. Appendix A: Flowcharts
   1. Basic building blocks
   2. Example
   3. Additional symbols
   4. Showing Responsibility
   5. Showing Opportunity
7. Appendix B: Data Flow Diagrams
   1. Introduction
   2. Basic elements of Data Flow Diagrams
   3. Example
   4. Best practices

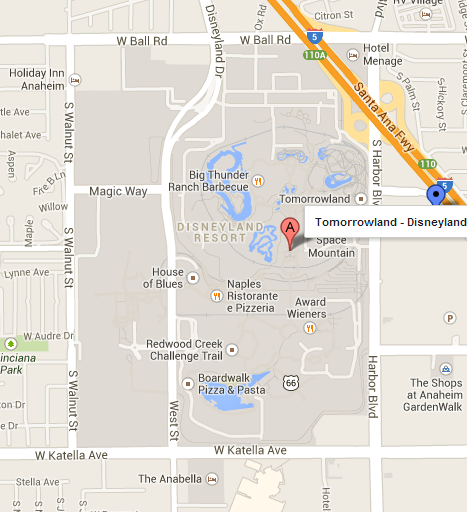
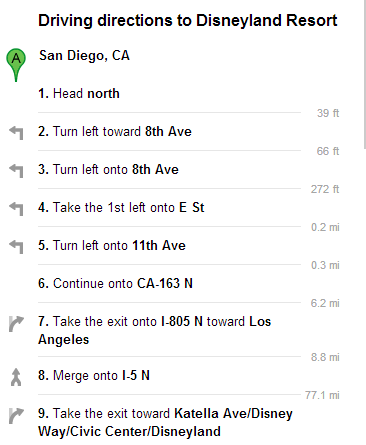
**Comments and Observations**

This chapter starts the business processing modeling/business analyst material that will continue through chapters 3, 4, 5, 6, 7 and 8. It sets the context and the importance of business process modeling to accountants.

I find that most students recognize the various roles that accountants play in business from other accounting courses. For this course, it is important to emphasize the various business management support roles and how developing business analysis skills can help prepare them for those roles.

I also find that most students have some familiarity with business process documentation—especially the use of documentation to train new workers—but they have limited knowledge of business process models, business rules, organization charts or strategic plans. This provides an opportunity to tie together accountants’ roles, business documentation, and the importance of developing business analysis skills. To help enterprises optimize business processes, the accountant needs to understand those processes. Business process documentation helps establish process requirements as well as describe the way those processes are currently performed. Business analysis then involves gathering and articulating the fundamental requirements for those processes, validating those requirements, and evaluating improvements to the processes to optimize performance. This helps students understand that business models play an important role in business analysis and leads into the discussion of activity models.

The text explores two basic types of models, structure models and activity models. At this point, a simple illustration helps explain the difference between the two types of models. Structure models are like a map and activity models are like the directions for traveling.

The text uses the Business Process Modeling Notation for activity models, but the students should understand that BPMN is similar in most respects to flowcharting. BPMN emphasizes the importance of events that trigger subsequent action (somewhat like business events trigger accounting activity). As I review the building blocks for BPMN activity models, I like to point out that activity modeling is a skill that takes practice to develop.

The introduction to BPMN now includes a discussion of the token concept. A token is created by a start event and must continue through the model until it is consumed by an end event. I discuss this concept here and then revisit it in chapters 5, 6, and 7. The token concept also helps describe what the various gateway types do. For example, an exclusive gateway only directs the token, but a parallel gateway creates new tokens for the various paths exiting the gateway and consumes tokens entering the merging gateway.

Additions to this chapter include event and task types, repeating activities, and data objects (and data stores). Again, these topics are introduced here and revisited in chapters 5, 6, and 7. The data objects help tie the BPMN models to UML class models, since the data objects should reflect UML classes or combinations of classes that occur in many documents.

**Suggested Team Exercise**

After reviewing the basic building blocks, I find it useful to break the students into small groups and have one student describe some activity that the other student will them model using BPMN. For example, they could describe how they got to class on that day, how they bought lunch at a fast food restaurant, how they checked their email before class, etc. You can then select a few groups to put their diagrams on the board. That allows you to discuss the results of the exercise and also begin stressing some of the BPMN best practices, such as using verb phrases, identifying the start and end of the process, avoiding distracting detail, and achieving a clear picture of the activities.