

Course Syllabus  
Systems Analysis and Design  
Business 355  
Fall 2004

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**Office Hours:** Tuesday & Thursday 8:15AM to 9:30AM and 12:45PM to 2:00PM  
Other times by appointment.

**Prerequisite or Corequisite:** Business 343

**Text:** Satzinger, John W., Jackson, Robert B., and Burd, Stephen D., *Systems Analysis and Design in a Changing World*, 2<sup>nd</sup> edition, Course Technology, Cambridge, MA: 2002.

**Course Description:** Introduction to analysis and design of modern information systems.

**Course Objectives:** The overriding objective for the class is to provide students exposure to the theory and practice of systems analysis and design. After successfully completing the course, students will have the following abilities and skills in both the theory and practice of systems analysis and design.

**Theory:**

1. An ability to describe the different major approaches (e.g., traditional and object-oriented approaches) to systems analysis and design as well as the strengths and weaknesses of each.
2. An ability to describe the tools used in systems analysis and design and the management of these analysis and design projects.
3. Knowledge of how and when it makes sense to apply these approaches and tools in a practical setting.
4. An ability to describe the processes and problems of change in an organization that are often produced by a new systems analysis and design project.

**Practice:**

1. Hands-on skills in performing analysis and design on a simulated development project.
2. Practical experiences and skills in working on teams to complete assignments and resolve conflicts.
3. Hands-on experiences with some tools of systems analysis and design.

**Course Requirements:** There are several different sets of required materials for the course. All of these will be graded and the resulting grades included in the calculation of the course grade.

1. There will be two exams during the term. One exam will take place during the semester and is scheduled during a class period. The second exam is a **comprehensive** final examination held during finals week.
2. There will be a series of in-class quizzes required. These quizzes will focus on material discussed or readings assigned for the past two class meetings. The average of the quizzes will be included in the calculation of the course grade.
3. An analysis and design project, based on an instructor provided case, will be completed over the course of the semester. For purposes of illustration during class, other instructor provided cases will be analyzed and discussed. The project is to be done in student teams by completing a series of project installments or milestones that collectively will form a completed project. Within the student teams, each team member will have the opportunity to complete peer evaluations of his/her teammates. The peer evaluations will, at the discretion of the instructor, be used to adjust (i.e., increase or decrease) an individual team member's project grade from the team project grade. However, grade adjustments will only be made if:
  - a. There were significant intra-team conflict/difficulties.
  - b. The instructor was informed of the team difficulties prior to the completion of the evaluations.
  - c. There is evidence that the team made meaningful attempts to resolve these difficulties.
  - d. All students must fully complete all peer evaluations. Students failing to fully complete these peer evaluations will receive a 5% reduction in the **course** grade.

The objective of performing peer evaluations is twofold. First, these evaluations are designed to aid students in self-managing any conflict within their teams. Second, these will also encourage all team members to contribute to the project as well as to reward individuals who perform exceptionally on the team project. The instructor will notify teams in class when peer evaluations will be completed.

**Grading Policies:** The course grade will be calculated using the following weights.

Item	Weight
Examination 1 The Environment of the Systems Analyst (Theme 1) & Systems Analysis (Theme 2)	30%
Comprehensive Final Examination: System Design (Theme 3) & System Implementation and Support (Theme 4) and material from the previous examination and themes	35%
Quizzes	25%
Project (The project installments adjusted by peer evaluations)	10%

**Course Policies:** The following policies will be enforced during the semester. Any unusual circumstances that are not explicitly covered by the following policies will be related to students in class and/or via email. Students are required to make sure that the email address listed on the class role in Banner is checked frequently for class messages. These policies include:

1. **Make-up Examinations:** Missing examinations is discouraged. However, if an exam is missed for a legitimate reason (e.g., a University excused absence, documented illness) please make arrangements with the instructor prior to the examination. If prior notification is not possible, please notify the instructor as soon as possible. A time for a make-up examination will be arranged. At the instructor's discretion, this time may be at the day and time of the final examination.
2. **A Grade of Incomplete:** A grade of incomplete is given only for extraordinary, non-academic reasons. The conditions to remove the incomplete and the time period in which the required work must be completed will be negotiated between the instructor and the student within University regulations and guidelines.
3. **Class Attendance:** While regular class attendance is not mandatory, it is expected. The instructor reserves the right to record class attendance for documentation purposes. Consistent class attendance or chronic class absences may influence the instructor's determination of letter grades in borderline cases.
4. **Academic Dishonesty:** Academic dishonesty such as copying from other students' examinations and team project installments is a serious offense. As such, any academic dishonesty will result in a zero being received for the student's work in question. Further, the act of dishonesty will be reported through appropriate University channels.

**Project Policies:** As mentioned above, the project will be completed in a series of seven (7) project installments or milestones. The following section describes these project installments regarding evaluation, grading and other rules/conditions. These are:

1. When an installment is submitted to the instructor, it will be either approved as acceptable or rejected as unacceptable.
2. If unacceptable, the problems (not solutions) with the installment will be noted for the student team. A rejected project installment must be revised and resubmitted to the instructor. The resubmitted project installment will be graded in the same manner as the original submission.
3. The determination of an installment's acceptability is based on the instructor's judgement on whether the team demonstrated that they mastered the skills required by the installment. Part of demonstrating this mastery is the appearance of the completed project installment. For example, work that is incomplete, sloppy, or disorganized will be considered unprofessional and unacceptable.
4. An unacceptable project installment automatically receives a 5% project grade penalty. If the project installment is not returned to the instructor in an acceptable form within the time period defined by the instructor, a 5% penalty is assessed for each 24-hour period until an acceptable installment is delivered. This is also the case if a resubmission is determined to be unacceptable. Weekends, vacations, and grading days do not count in the calculation of this penalty.
5. The instructor will notify the team that a project installment is unacceptable in class or via email. Upon this notification, the resubmission deadline is set for the calculation of penalty assessments. Because it is the responsibility of students to attend class, even if no team member is in class to receive this notification, this deadline will be enforced.
6. You must continue working on a project installment until it is acceptable and you may not submit any future installments until all preceding installments are determined to be acceptable. These later installments (that cannot be turned in until preceding installments are acceptable) are also subject to late penalties for missed deadlines.

7. Student teams must deliver all project installments and resubmitted installments to the instructor or make other arrangements with the instructor. Leaving a project installment in the instructor's mailbox or at his office door without prior arrangements is unacceptable.
8. All project installments must be accepted or the student team will receive an "F" for the course.
9. Any project installment submitted after 4:30pm on its deadline or due date will result in a 5% per day penalty against each team member's project grade.
10. If a project installment is graded as acceptable but contains technical difficulties that require modifications, the team may modify this installment and return it to the instructor with the next project installment. If the corrections are complete, no penalty is assessed. If the modifications are incomplete, the 5% penalty will be assessed.
11. All project installments turned-in for grading must be in a three-ring binder with all graded project installments (and instructor feedback) in the binder. Failure to do so will make the project installment unacceptable. Copies of unacceptable project installments must also be included in the binder.
12. Additional considerations include:
  - a. Only one submission per day is permissible.
  - b. Project installments and re-submissions are all graded on a first-come, first-serve basis.
  - c. Project installments submitted early will be graded as if submitted at the submission deadline. In this fashion, early turn-ins will not receive a "free" review. However, teams may conduct walkthroughs of project installments with the instructor as time permits.
13. Details regarding the project installments will be provided in class. However, these installments will generally be as follows:
  - a. Project Installment 1 System Planning (Project Planning).
  - b. Project Installment 2 Identifying Events and Things (Event & Thing).
  - c. Project Installment 3 System Requirements Analysis (Traditional Modeling Techniques for Requirements Analysis).
  - d. Project Installment 4 System Requirements Analysis (Object-Oriented Modeling Techniques for Requirements Analysis).
  - e. Project Installment 5 System Design (Application Architecture and Database Design).
  - f. Project Installment 6 Database Implementation (Database Development and population in Access).
  - g. Project Installment 7 Program Development (Visual Basic program: User Interface for the database: Deliverables includes user and system documentation and demonstration of the program for the instructor).

**Team Rules:** The following are the rules that will be enforced on all teamwork.

1. **All decisions and work are to be done as a team.**

Do not simply have each team member responsible for a project installment. Each team member needs to be involved in each installment. The degree of involvement may vary across installments, but all must contribute to each installment.

2. **All team members are responsible for the content of the installment.**

What is completed and submitted for grading is the responsibility of the entire team. If the installment is submitted for grading, each team member has implicitly agreed to its content.

3. **If a team member does not participate in the work of the installment (e.g., does not attend meetings or does not complete agreed upon work in an appropriate time period), use the peer evaluation form to reflect this lack of participation.**

No team member is to receive a “free ride” from the other team members.

4. **If your team experiences significant conflicts, attempt to resolve these as a group before speaking with the instructor. Document these attempts and then see the instructor.**

One purpose of requiring work to be done in student teams is for students to gain experience in successfully dealing with these conflicts before encountering them “on the job.” Involving the instructor is a last resort, but must be done prior to completing the peer evaluation forms.

5. **Include the names of the team members on each completed project installment. Submit all required materials for the project installment in your three-ring binder.**

**Important Dates**

**Final Examination:** Monday, December 13, 2004 10:00AM to 12:00PM  
**The final examination is comprehensive.**

**Fall Recess:** Monday 11/22/04 to Friday 11/26/04.

**Tentative Course Schedule**

<b>Week of Semester</b>	<b>Course Content</b>
<b>Theme 1 The Environment of the Systems Analyst</b>	
Week 1 8/23-8/27	Class Introduction Chapter 1 The World of the Modern Systems Analyst
Week 2 8/30-9/3	Finish Chapter 1 Chapter 2 The Analyst as a Project Manager
Week 3 9/7-9/10	Illustrative Cases (Project Planning) Chapter 3 Approaches to Systems Development
Week 4 9/13-9/17	Finish Chapter 3 Project Installment 1 Due
<b>Theme 2 Systems Analysis</b>	
Week 5 9/20-9/24	Chapter 4 Beginning the Analysis: Investigating System Requirements Chapter 5 Modeling System Requirements: Events and Things
Week 6 9/27-10/1	Finish Chapter 5 Illustrative Cases (Events & Things) Chapter 6 The Traditional Approach to Requirements
Week 7 10/4-10/8	Finish Chapter 6 Project Installment 2 Due
Week 8 10/11-10/15	Illustrative Cases (Requirements Analysis: Traditional Approach) Chapter 7 Object-Oriented Approach to Requirements
Week 9 10/18-10/22	Finish Chapter 7 Illustrative Cases (Requirements Analysis: Object-Oriented Approach) Project Installment 3 Due Examination 1
Week 10 10/25-10/29	Chapter 8 Environments, Alternatives, & Decisions Illustrative Cases (Alternatives & Decisions) Project Installment 4 Due
<b>Theme 3 Systems Design</b>	
Week 11 11/1-11/5	Chapter 9 Moving to Design Illustrative Cases (Application Architecture: Traditional & Object-Oriented Approaches)
Week 12 11/8-11/12	Chapter 10 Designing Databases Illustrative Cases (Database Design)
Week 13 11/15-11/19	Chapter 11 Designing the User Interface Project Installment 5 Due
<b>Fall Recess 11/22-11/26</b>	
Week 14 11/29-12/3	Chapter 12 Designing System Interfaces, Controls, & Security Illustrative Case (Input/Output/Controls Design) Project Installment 6 Due
<b>Theme 4 System Implementation and Support</b>	
Week 15 12/6-12/10	Chapter 15 Making the System Operational Illustrative Case (System Implementation) Catch-up and Review Project Installment 7 Due

Project Installment Grading Form  
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Project Installment \_\_\_\_\_ Submission # \_\_\_\_\_ Date & Time Rec. \_\_\_\_\_

Team \_\_\_\_\_

Team Members \_\_\_\_\_

1. Was the format/analysis in the requested form (i.e., were the instructions followed)?

2. Were the materials professional in appearance and content?

3. Was the content correct or appropriate?

4. Penalties

Late \_\_\_\_\_ Days on Re-Submissions \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Peer Evaluation Form  
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**Evaluation Of:** \_\_\_\_\_ **For Project**

**Installment:** \_\_\_\_\_

**Directions:**

Respond to the following statements regarding the degree to which you agree or disagree with the statements. For your responses, use the following scale and weights.

<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

		<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
<b>This individual .....</b>						
1.	Attended meetings on a regular basis.	1	2	3	4	5
2.	Arrived at meetings on time.	1	2	3	4	5
3.	Offered pertinent ideas in meetings.	1	2	3	4	5
4.	Was able to participate in discussions regarding team materials and subjects.	1	2	3	4	5
5.	Was always prepared for team meetings.	1	2	3	4	5
6.	Completed work in professional manner.	1	2	3	4	5
7.	Produced a quality of work that met or exceeded your expectations.	1	2	3	4	5
8.	Worked well with teammates.	1	2	3	4	5
9.	Helped solve disputes within the team.	1	2	3	4	5
10.	Supported team decisions, even if he/she disagreed with these decisions.	1	2	3	4	5

**Total Score** \_\_\_\_\_

**Average Score** \_\_\_\_\_  
(Divide Total Score by 10)

Case Overview  
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The case study focuses on the non-profit Moscow Baseball Association (MBA) which has no paid employees and thus uses only volunteer labor. The MBA sponsors youth baseball teams at four different levels or leagues, Cal Ripken (i.e., 8-12 year-olds), Jr. Babe Ruth (i.e., 13-15 year-olds), Sr. Babe Ruth (i.e., 15-19 year-olds), and American Legion (i.e., 15-19 year-olds). For each league, the MBA charges players' fees, designed to cover the cost of players' uniforms, players' insurance, umpire costs, periodic league provided equipment replacement, and other overhead costs of running the league. In addition, the players' fees have a portion built-in to generate a reserve fund to meet unforeseen contingencies.

Each year, before the season begins, MBA volunteers hold player registration sessions. During these sessions, parents of the players complete registration forms, pay the players' fees, and provide a birth certificate as proof of the player's age. All the registration data is collected in paper form. These sessions are held in early spring or late winter in order to allow the MBA to forecast the number of players in each league. These numbers and the resulting forecast are critical to determine the number of teams needed, order uniforms, assign or purchase equipment, recruit coaches, and developed league schedules.

This registration process has produced several difficulties in recent years. First, while the registration sessions are reasonably well advertised, each year a number of players fail to register at these sessions and thus register late. As a result, the forecasts of the number of players in each league tend to be inaccurate causing difficulties in arranging teams, coaches, uniforms, and schedules. Second, a number of parents do not pay the players' fees at the time of registration, producing cash flow problems. Third, the record keeping required by these registration sessions is cumbersome. The record keeping includes tracking who registered and in which league, who has paid their players' fees, and who has provided proof of age. Additional information collected at registration that is used by the MBA include a mailing address, phone number, email address, and whether or not the parent will volunteer to help the MBA (e.g., keep score, work the concession stand). An attempt has been made to collect and store the registration data in a database for one of the leagues. However, all the data had to be entered manually during the registration sessions, which was rather slow and cumbersome. The MBA is considering how to best address these problems with an information system.