

SCM 459/659
Fall 2005
Analysis and Design of Logistical Systems

Instructor:	Dr. Dale S. Rogers
Class Time:	<i>Monday 7:00-9:30 pm</i>
Classroom:	108 Nazir Ansari Business Building
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Office Hours:	After class or by appointment
Texts:	Microsoft Access manual or supplementary guide. WebCT Additional Readings as assigned

Course Description:

SCM 459 and 659 are designed to provide students with an understanding of strategic and analytical elements of logistics systems design and management. This course will address the functional elements of several different types of logistics systems. Behavioral management issues, which impact systems, will also be addressed. Integrative tools will be introduced and used to analyze and evaluate alternative courses of action regarding a firm's materials and logistics management system.

Course Objectives:

1. To provide an understanding of the role and function of logistics systems management in the context of a competitive society and in relation to other functional areas of management responsibility.
2. To develop an understanding of the functional areas of logistics systems management and their interrelationships.
3. To introduce systems design concepts for planning of logistics management.
4. To understand how to design, analyze, and build logistics systems.

The teaching method will be a combination of lecture and class discussion.

Grading:

RFID Project Plan	15%	October 10
Midterm Exam	15%	October 31
Inventory Systems Project	30%	November 21
Final Exam	20%	Monday, December 19 (7-9 pm)
Quizzes, Assignments and Participation	20%	Throughout term

Inventory/Order Processing/Receiving System:

An important part of this class will be the design and development of a computerized inventory/order processing/receiving system. Each student individually will be expected to produce a working system. These inventory/order processing/receiving systems will be demonstrated by the students in class on November 21 and 28. All students will be expected to have systems completed on November 21. This project needs to be turned in on a CD. Students will turn in an "mdb" file. *Failure to have a completed system on that date will result in a failing grade for the course.* All CDs will become the property of the instructor.

Due on September 26 will be the first iteration of student project management plans and analyses. Project management plans and analyses will include resource estimates, GANTT and PERT charts, and a calculated critical path. Recommended software to complete the project management issues is Project Manager for Windows, which is available in the COBA computer lab. Students will turn in requirement analysis/conceptual designs on October 24 and detailed designs on November 7.

These inventory systems will include key components of the material and logistics management process beginning with order entry/processing. Interfaces to other functional areas (e.g. accounts payable, etc.) should also be included. The design should include the capability to track material as it is received, allocated to orders, and shipped. These systems should include as much analysis capability as possible. It is critical that good materials and logistics management procedures be built into the system's functionality. The system should be able to perform routine maintenance operations such as table record maintenance.

The student may design the inventory/order processing/receiving system for any business pending the instructor's approval. If possible, these systems should be usable. This exercise is intended to be practical.

System Design and Development Process

1. Requirements Analysis
2. Conceptual Design
3. Detailed Design
4. Systems Development
5. Systems Test
6. Systems Implementation

The ability to design, develop, implement, and analyze logistics systems is an important skill for University of Nevada logistics majors. A key part of a logistics manager's job at leading edge companies is managing the logistics systems and therefore the flow of information. It is not a task that should be left only to the "computer people".

Systems Development Learning Rubric

Score Levels	<i>Functionality</i>	<i>Technology</i>	<i>Design</i>	<i>Presentation</i>
4	<ul style="list-style-type: none"> ▪ Would be usable for real company ▪ includes key components of the material and logistics management process ▪ Order entry/processing ▪ Purchase order with multiple line items ▪ Receiving and inventory management ▪ Interfaces to other functional areas (e.g. accounts payable, etc.) ▪ Can track material as it is received ▪ Allocate to orders, and show product shipments ▪ Analytical capability ▪ Good materials and logistics management procedures built into the system's functionality ▪ Perform routine maintenance operations such as table record maintenance. 	<ul style="list-style-type: none"> ▪ System works with no bugs ▪ Able to have multiple line items on one purchase order ▪ Functions perfectly in AB 108 (can be on your own laptop) ▪ Screens display appropriately 	<ul style="list-style-type: none"> ▪ System is clearly focused in an organized and thoughtful manner. ▪ Appropriate development methodology ▪ Thorough detailed design ▪ Clearly designed project management 	<ul style="list-style-type: none"> ▪ Systems logic is clear ▪ Format enhances the content. ▪ Presentation captures audience attention. ▪ Presentation is organized and well laid out.
3	<ul style="list-style-type: none"> ▪ Would be usable for real company with few changes ▪ includes key components of the material and logistics management process ▪ Order entry/processing ▪ Purchase order with multiple line items ▪ Receiving and inventory management ▪ Interfaces to other functional areas ▪ Can track material ▪ Allocate to orders, and show product shipments ▪ Some analytical capability ▪ Perform routine maintenance operations 	<ul style="list-style-type: none"> ▪ System works with very few bugs ▪ Able to have multiple line items on one purchase order ▪ Functions perfectly in AB 108 (can be on your own laptop) 	<ul style="list-style-type: none"> ▪ System is clearly focused in an organized and thoughtful manner. ▪ Appropriate development methodology ▪ Thorough detailed design ▪ Clearly designed project management 	<ul style="list-style-type: none"> ▪ Systems logic is clear ▪ Format enhances the content. ▪ Presentation captures audience attention. ▪ Presentation is organized and well laid out.

2	<ul style="list-style-type: none"> ▪ Would not be usable for real company without a lot of improvement ▪ little material and logistics management capabilities ▪ Purchase order without multiple line items ▪ Receiving and inventory management ▪ No interfaces ▪ Not much analytical capability ▪ Not much routine maintenance operations 	<ul style="list-style-type: none"> ▪ System works with several bugs ▪ Functions poorly in AB 108 (can be on your own laptop) ▪ Screens do not display appropriately 	<ul style="list-style-type: none"> ▪ System is not clearly focused in an organized and thoughtful manner. ▪ Good development methodology not evident ▪ Cursory detailed design ▪ Poorly designed project management 	<ul style="list-style-type: none"> ▪ Systems logic is unclear ▪ Format does not enhance the content. ▪ Presentation does not capture audience attention. ▪ Presentation is not organized and well laid out.
1	<ul style="list-style-type: none"> ▪ Inconsistent solution ▪ Has no clear goal ▪ Functionality is incomplete ▪ A lot of bugs 	<ul style="list-style-type: none"> ▪ System does not work well ▪ Functions poorly in AB 108 (can be on your own laptop) ▪ Screens do not display appropriately 	<ul style="list-style-type: none"> ▪ Content is unfocused and haphazard. ▪ Information does not support the solution to the challenge or question. ▪ System is not clearly focused in an organized and thoughtful manner. ▪ Good development methodology not evident ▪ Cursory detailed design ▪ Poorly designed project management 	<ul style="list-style-type: none"> ▪ Systems logic is unclear or missing ▪ Presentation appears sloppy and/or unfinished. ▪ Multimedia is overused or underused. ▪ Format does not enhance content. ▪ Presentation has no clear organization.

Due Dates for Inventory/Order Processing/Receiving System:	
Student project management plans and analyses	September 26
Requirements Analysis/Conceptual Design	October 24
Detailed Designs	November 7
Final Systems Due	November 21

Microsoft Access Manuals:

Tony Fowlie , *Access 2003 for Visual Learners*, Visibooks, LLC. © 2004 (240 pages);ISBN: 1597060208. Use this practical guide to learn how to create and administer Microsoft Access. Create reports, modify tables and forms, create queries, sort and filter records, create mailing labels, and much more. Available on Books 24 X 7.

John L. Viescas, *Microsoft Office Access 2003 Inside Out*, Paperback: 1296 pages, Microsoft Press; ISBN: 0735615136 (August 27, 2003)

Cary N. Prague, Jennifer Reardon, Lawrence S. Kasevich, Diana Reid, Phuc V. Phan, *Access 2003 Programming Weekend Crash Course* Paperback: 504 pages : John Wiley & Sons; (September 29, 2003) ISBN: 0764539752

Allen G. Taylor, Virginia Andersen, *Access 2003 Power Programming with VBA*, Paperback: 792 pages ; Wiley; 1st edition (October 15, 2003) ISBN: 0764525883

Patricia Cardoza, Teresa Hennig, Graham Seach, Armen Stein, *Access 2003 VBA Programmer's Reference (Programmer to Programmer)*, Paperback: 984 pages ; Wrox; (March 29, 2004) ISBN: 0764559036

Helen Feddema, *Expert One-on-One Microsoft Access Application Development*, Paperback: 624 pages ; Wrox; (April 26, 2004) ISBN: 0764559044

Books 24x7 - available on www.library.unr.edu.

RFID Project:

This assignment is putting together a detailed project plan for RFID acquisition and implementation. As you probably already know, Wal-Mart and the Department of Defense have mandated the usage of RFID. It is quite likely that students that are planning to graduate in Supply Chain Management and Logistics will be asked to be involved in RFID projects.

The project plan should include the following:

1. Develop a process flow map that illustrates the application of RFID within a consumer product manufacturer. This process map should be completed in Visio and will include a detailed design of linked facilities. Make sure that the design is realistic.
2. Provide your assessment as to whether or not current and planned activities will successfully match up with the Wal-Mart and DOD mandates.
3. Research and report on current initiatives, projects and activities underway in the private and government sectors to address RFID implementation. Describe the progress of various manufacturers, wholesalers, retailers, and third parties in regards to RFID rollout and implementation.
4. Provide recommendations to government agencies as to what the impact of RFID projects will be on issues such as safety and security.
5. Discuss the various competing RFID technologies. What are the strengths and weaknesses of these technologies? When might each technology be utilized?
6. Develop an Excel spreadsheet that contains the cost elements for RFID acquisition and implementation.

Do not copy material from the Internet without citing the source. If more than seven words in a row are found to be copied from an Internet or other source without citation, the student will receive a grade of "F" for both the project and the term. This assignment should be original work.

Project-based Learning Rubric

Score Levels	Content	Conventions	Organization
4	<ul style="list-style-type: none"> ▪ Is well thought out and supports the solution to the challenge or question ▪ Reflects application of critical thinking ▪ Has clear goal that is related to the topic ▪ Is pulled from a variety of sources ▪ Is accurate 	<ul style="list-style-type: none"> ▪ No spelling, grammatical, or punctuation errors ▪ High-level use of vocabulary and word choice 	<ul style="list-style-type: none"> ▪ Information is clearly focused in an organized and thoughtful manner. ▪ Information is constructed in a logical pattern to support the solution.
3	<ul style="list-style-type: none"> ▪ Is well thought out and supports the solution ▪ Has application of critical thinking that is apparent ▪ Has clear goal that is related to the topic ▪ Is pulled from several sources ▪ Is accurate 	<ul style="list-style-type: none"> ▪ Few (1 to 3) spelling, grammatical, or punctuation errors ▪ Good use of vocabulary and word choice 	<ul style="list-style-type: none"> ▪ Information supports the solution to the challenge or question.
2	<ul style="list-style-type: none"> ▪ Supports the solution ▪ Has application of critical thinking that is apparent ▪ Has no clear goal ▪ Is pulled from a limited number of sources ▪ Has some factual errors or inconsistencies 	<ul style="list-style-type: none"> ▪ Minimal (3 to 5) spelling, grammatical, or punctuation errors ▪ Low-level use of vocabulary and word choice 	<ul style="list-style-type: none"> ▪ Project has a focus but might stray from it at times. ▪ Information appears to have a pattern, but the pattern is not consistently carried out in the project. ▪ Information loosely supports the solution.
1	<ul style="list-style-type: none"> ▪ Content is plagiarized ▪ Provides inconsistent information for solution ▪ Has no apparent application of critical thinking ▪ Has no clear goal ▪ Is pulled from few sources ▪ Has significant factual errors, misconceptions, or misinterpretations 	<ul style="list-style-type: none"> ▪ More than 5 spelling, grammatical, or punctuation errors ▪ Poor use of vocabulary and word choice 	<ul style="list-style-type: none"> ▪ Content is unfocused and haphazard. ▪ Information does not support the solution to the challenge or question. ▪ Information has no apparent pattern.

This assignment is due at 9 a.m. October 10.

Graduate Student Term Paper:

This assignment is the successful completion of a logistics systems analysis and design project. All graduate students will be expected to complete their projects individually. A problem and/or opportunity for productivity improvement in a real situation should be identified and researched leading to a management recommendation. If students cannot come up with real problems, the instructor can assist or a conceptual problem may be developed. Each paper should be approximately 10 pages and written as a proposal to management. An executive

summary should be included. It is expected that this paper will be well organized. Papers written for other classes are not acceptable. This assignment should be original work.

The term project will be evaluated on the following criteria.

1. Idea presentation/creativity - explanation of concept and link to improving logistics productivity.
2. Development/justification - extent that idea is developed and justified (advantages/disadvantages).
3. Writing skill - correct grammar and clear understandable writing.
4. Professionalism/format - appearance and format of paper, e.g. no typos, misspellings, etc.

This assignment is due at 9 a.m. December 6.

Email Addresses:

All students will be expected to get an email address and check their mailbox regularly for messages pertaining to this class. Additional assignments will be periodically given over the Internet. Assignments for the following Monday will be given as late as midnight on Thursday. Students should send an email message with "473" in the subject field to *mickey@unr.edu* before midnight on Tuesday, August 30. Failure to do so will result in a lowering of the "participation" grade. If you use Microsoft Outlook, please send your vcard to *mickey@unr.edu*.

Web CT:

Students will be expected to visit the class WebCT site often. Readings and additional assignments throughout the term will be posted on the WebCT site. Quizzes covering readings may also be posted on the WebCT site. All of the cases and readings will be placed on the WebCT site.

Examinations:

Examinations will consist of essay questions. Students will be expected to display detailed understanding of topics included in exams. Examination questions will be developed from class discussions and assigned readings.

Make-up examinations are not given unless advance approval is granted.

Friendly Warning:

If it appears that students are not completing the reading, pop quizzes will be given. The instructor would prefer not to give a lot of quizzes, but will if necessary.

Modifications of class and prepared assignments may be made as the class progresses.

Final Grades:

Grades will not be posted but will be available on the Internet shortly after final exam week. The university does not distribute Final Grade Reports by mail. Students may access their final grades by using the ePAWS system. Final grades are generally available on the ePAWS system within 24 hours after processing by the Office of Admissions and Records.

Academic Dishonesty:

The University of Nevada policy on academic dishonesty is available on the web at <http://www.unr.edu/stsv/acdispol.html>. Students that are found to have committed academic dishonesty will receive a grade of "F" for the course.

Class Conduct:

From the University of Nevada Course Catalog 2005-2006, p. 46-47. "Students may be dropped from class at any time for negligence or misconduct, upon recommendation of the instructor and with approval of the college dean. Students may also be dropped for non-attendance upon indication of the instructor."

University of Nevada Oath:

- I commit myself to the pursuit of knowledge and academic integrity.
- I will respect the tradition of academic inquiry at the University of Nevada, Reno, its mission and its rules of conduct.
- I will honor the dignity of all persons, listening to, striving to learn from and respecting the rights of those who differ from myself.
- I will contribute to the development of a caring community where compassion for others and freedom of thought and expression are valued.
- I will honor, challenge and contribute to the scholarly heritage left by those who preceded me and work to leave this university a better place for those to follow...academically, humanely, and globally. I will account for myself responsibly by keeping a flexible and open mind, utilizing critical skills and fairness for problem solving and leadership.
- Allegiance to these ideals requires each new student to refrain from and discourage behavior which threatens the freedom and respect every individual deserves.
- My endorsement of these common principles is my commitment to the University of Nevada, Reno and its community of scholars.

Tentative Class Schedule:

Date	Topic
August 29	Course Introduction
September 2 9-11 am	COBA labs Introduction to systems tools (Visio, Project, Access) (Optional) (Friday) Hardware and Software Types from Computerworld December 2004
September 5	Labor Day - no class
September 12	RFID RF Tags for Pharmaceutical Industry RFID Whitepaper Connect the Dots RFID Report June 2005
September 19	ERP, MRP, DRP, MRPII, JIT IT Doesn't Matter IT Productivity Gap Managing Inside and Outside the Box A Model of ERP Implementation
September 26	Project Management Plans and Analyses Due Advanced Planning Systems EDI Transaction sets Bar Codes - Y2K redux Executive E-Mail_ Bill Gates on the New World of Work Nike Rebounds
October 3	CAD, GIS Load planning, Routing and Scheduling ARCVIEW vs MapINFO The Power Of Location Geography is Everywhere
October 10	RFID Project Plan due Dennis Waliczek, VP IT, USF Logistics Warehouse Management Systems The Best-Of-Breed WMS Suppliers WMS Planning Design and Procurement
October 17	Transportation Management Systems Comparison and Contrast of Transportation Management Systems Collaborative Transportation Management Yard Management RTLS
October 24	Requirements Analysis/Conceptual Designs Due 10 Predictions Returns Recommender Systems Introduction to Reminder Systems Algorithms and Evaluation Recommender Systems in E-Commerce

October 31	Midterm Exam
November 7	Detailed Design Due Purchasing, Manufacturing planning & control MRP vs. no MRP debate (Placeware) CRM Material Handling Simulation Takes Pain Out of Trial and Error Capturing CRM
November 14	System Preparation Day - no class
November 21	Inventory System Presentations
November 28	Inventory System Presentations
December 5	To Be Announced Graduate Student paper Due
December 14	Dead Day
December 19	Monday, 7-9 pm - Final Exam

Academic Calendars

Fall 2005

Item	Date
Registration schedules and fee invoices mailed to students	week of Aug. 1
Faculty and Graduate Teaching Assistants reporting	Monday, Aug. 22
Residence halls open	Wednesday, Aug. 24
New Undergraduate Student Orientation	Thursday and Friday, Aug. 25-26
Last day to pay without late registration fee	Friday, Aug. 26
<i>First day of classes</i>	Monday, Aug. 29
Late Registration begins	Monday, Aug. 29
Labor Day	Monday, Sept. 5
Final date for late registration and paying registration fees to receive 100 percent refund if dropping individual classes or if totally withdrawing from the 2005 Fall semester	5 p.m., Thursday, Sept. 8
No refunds for dropping individual classes after this date	5 p.m., Thursday, Sept. 8
Final date for adding classes changing from letter grade to S/U, changing from S/U to letter grade, changing from audit to credit	5 p.m., Thursday, Sept. 8
Last day to request a 50 percent refund and completely withdraw from the university 5 p.m.	Friday, Oct. 7
Partial deferred fee payments due	5 p.m., Friday, Oct. 7
Homecoming	Saturday, Oct. 8
Final date for <i>dropping</i> classes and changing from credit to audit	5 p.m. Friday, Oct. 21
Nevada Day observed	Friday, Oct. 28
Final deferred fee payments due	5 p.m., Friday, Nov. 4
Veterans Day	Friday, Nov. 11
Thanksgiving Day	Thursday, Nov. 24
Family Day	Friday, Nov. 25
May 2006 graduation applications filed with Admissions and Records	Friday, Dec. 2
Final date for filing graduate final oral examination reports	Friday, Dec. 2
Final date for filing approved thesis or dissertation with the Graduate School	Friday, Dec. 2
Winter Commencement	Saturday, Dec. 10
Prep Day	Wednesday, Dec. 14
Final Week schedule begins	Thursday, Dec. 15
Last day of classes	Wednesday, Dec. 21
Residence Halls close	Thursday, Dec. 22

Final grades due to Admissions and Records by 9 a.m.	Friday, Dec. 23
Fall semester ends	Friday, Dec. 23
Christmas Day holiday observed	Monday, Dec. 26

Grading Policy

As you probably know, the UNS changed its grading system as of Fall 1993 to the following:

<u>Grades</u>	<u>GPA</u>	
A	4.0	Superior
A-	3.7	
B+	3.3	
B	3.0	Above Average
B-	2.7	
C+	2.3	
C	2.0	Average
C-	1.7	
D+	1.3	
D	1.0	Below Average
D-	0.7	
F	0.0	Failure
P	Pass	
S	Satisfactory - Undergraduate: C or better Graduate: B or better	
U	Unsatisfactory - Undergraduate: D or below Graduate: C or below	
I	Incomplete	
X	In progress (Research projects extending beyond semester)	
AD	Audit	
W	Withdrawal	
NR	Not Reported - Assigned by registrar pending faculty submission of final grade	

1. The "Plus" and "Minus" is part of the grading scale of each campus. It is up to the individual faculty member to exercise this option.
2. The "F" grade is a part of the grading scale of each campus. It is up to the individual faculty member to exercise this option.
3. All Withdrawals indicate that the student did not complete the course. Each campus determines the timeline for assigning the W.
4. The course syllabus shall contain a clear explanation of the grading scale to be used by the faculty member. Students may not appeal the format an instructor chooses.