**MGT 4052 SYSTEMS ANALYSIS & DESIGN**

**Fall 2012**

j0078824

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**Office Hours**: 2:00-3:30 pm, Mon, Wed, Fri and by appt.

**Course Web Site:** see *T-Square*

**Course Schedule:** 1:05pm-1:55 pm, Mondays, Wednesdays, and Fridays

Scheller College of Business, Room 103

**Course Materials:** ***Systems Analysis & Design with UML version 2.0, 4th ed.,***

Alan Dennis, Barbara Haley Wixom, and David Tegarden, Wiley, 2012, ISBN: 9781118037423 (*available for Purchase from the Bookstore*)

***Visio Professional Edition***

*Visio 2007 is available in Scheller College of Business computer labs. Visio 2007 is also available for free trial from CNET at:*

*(*[*http://download.cnet.com/Microsoft-Office-Visio-Professional-2007/3000-2064\_4-10704836.html?tag=mncol;pop*](http://download.cnet.com/Microsoft-Office-Visio-Professional-2007/3000-2064_4-10704836.html?tag=mncol;pop)*)*

# Course Description and Objectives

You have come to the study of systems analysis and design at an exciting time. Since some of the first software systems were used to perform repetitive calculations and to decipher secret code in WWII, software systems have become increasingly complex. For example, MS Windows has more than 45 million lines of code! Today’s applications such as business-to-business electronic procurement systems are much more sophisticated and must meet more demanding requirements than in the past.

The practice of systems development is undergoing major transformations. On the one hand, structured methodologies advocate analyzing and designing software through *functional decomposition*: examining an information system in terms of the functions it performs and the data it maintains. Many companies still use structured methodologies to develop their information systems. However, the software and data components of an information system are increasingly being viewed as a collection of related objects. In the *object-oriented* paradigm, the emphasis is on the things that comprise the system. Object-oriented methodologies promise to be easier to use than the more traditional methods and should result in higher quality systems. Many companies are now making the shift to object-oriented design. Further, companies have more alternative strategies for developing their information systems than ever before including outsourcing, off-shoring, open sourcing and purchasing off-the-shelf components and packages in addition to traditional information systems development.

*What does this mean for you?* It means that you must have a clear understanding of the concepts, tools and techniques of the object-oriented methodologies. It means that you must understand the different development strategies and when each is most appropriate. Finally, it means that you must have an in-depth understanding of the systems analysis process because this process is required whether the system is actually coded in-house or not.

The intent of this course is to provide you with a strong foundation in the methods and practice of systems analysis and design. In this course, you will learn to identify areas of problems or opportunities for information systems development. You will learn to identify opportunities for information systems, evaluate the feasibility of a proposed information systems project, and then proceed to determine the best development approach for the project. You will learn to define user problems, isolate user requirements, model information objects, identify use cases, and design the user interface for an internet-based system. Today, many information systems are developed for the Web; thus, you will learn about the particular analysis and design issues relevant to developing internet-based information systems. We will also talk about current and emerging trends and opportunities in information systems development. A number of homework exercises and a class project will give you the opportunity to apply what you are learning in the course.

The goals of this course are to enable you to:

1. understand the requirements determination process in general and for object oriented systems development, in particular
2. understand fundamental object oriented concepts and see how they are similar to and different from other approaches
3. gain experience in using CASE tools such as Visio to design a system
4. be aware of the organizational, political, social and technical issues in systems development
5. work in teams on systems analysis and design tasks
6. understand the analysis and design issues relevant to Internet based information systems and how these issues can be addressed
7. determine the various alternatives for systems development and understand when each is appropriate
8. apply what you have learned in a realistic systems development situation

Grading, Tests, Project, Homework Exercises

Your evaluation will be based on the following:

1. In-Class Tests (best 3 of 4, each worth 8%) 24%

2. Team Project 40%

Project Demo (10%)

Project Reports (30% total; each worth 10%)

3. Homework Exercises (each worth 8%) 16%

4. Class Participation (10% individual; 10% team) 20%

Note that final grades in the course are determined based on a student’s total weighted score (i.e., points earned for each element in the course described above, weighted by the percentages given above). For example, if a student received scores of 100 on all elements of the class, the student’s final weighted score would be ((100\*24%) + (100\*40%) + (100\*16%) + (100\*20%)) = 100 points. If a student received scores of 50 on all elements of the class, the student’s final weighted score would be ((50\*24%) + (50\*40%) + (50\*16%) + (50\*20%)) = 50 points. The maximum total weighted score that can be achieved by a student in this class is 100 points.

We also offer an extra credit at the end of the course (0-2.5 points). Details TBA.

CONVERSION OF FINAL GRADE % TO LETTER GRADE:

A = 90 – 100 points

B = 80 – 89 points

C = 70 – 79 points

D = 60 – 69 points

F = 0 – 59 points

Posted Letter grades are **FINAL**. Unfortunately, there will always be a significant number of students that end up missing a higher grade by 1 or 2 points. No matter where I draw the line, this will occur. Therefore, I am not able to make arbitrary adjustments once all the scores are in without undermining the whole grading system.

*Tests*. There are four in-class tests throughout the semester. The best three scores for these tests will count toward your final grade. The tests are not cumulative. They consist of multiple choice and short answer questions. All Tests cover material from the lectures, in-class exercises, homework exercises and assigned readings. Tests are to be completed by you individually *without* the help of any other student.

*Homework Exercises*. Two homework exercises will be assigned throughout the semester. You should work on these exercises with your team. These exercises will give you practice in implementing the concepts we have discussed in class or in using the computer software aided engineering (CASE) tools. Exercises are due at the beginning of class on the date specified.

*Team Project*. There is a team project to analyze and design a prototype of an information system for an actual client. The project will integrate and apply the concepts we have learned in class. Detailed guidelines for the project reports and presentations will be distributed and discussed. Project deliverables are due at the beginning of class on the dates specified.

*Class Participation*. Success in this course depends on your being prepared, completing assignments, and participating in in-class exercises and class discussions. There are two kinds of class participation: individual and team.

Your *individual* participation will be assessed throughout the semester by completion of in-class exercises as well as the quality of your questions and comments in class. In-class exercises must be turned in during class; no credit will be given for late submission of in-class exercises. In-class exercises will be graded using the following scale: acceptable/complete (10 points); unacceptable/not submitted (0 points). Note that three in-class exercises will be dropped in computing your in-class exercise average.

Your *team* participation will be assessed by completion of peer evaluations during the semester: **if your performance on your team is judged below par by a majority of your peers, you may receive a deduction of your score for team participation and for the team assignments, depending on your level of participation**.

*Re-grade Policy*. If you wish to request a re-grade of an item on an assignment, you must submit to me: (1) the original document containing the item to be re-graded and (2) a written request (email or hardcopy) explaining your re-grade request (what you are requesting to be re-graded and why you believe your answer is correct). Re-grade requests must be submitted within 1 week after the assignment is returned; any re-grade requests submitted after this will not be considered. *Note that your entire assignment is subject to re-grading when you submit a re-grade request.*

*Late Submissions, Missed Work and Examinations*. All assignments are due on the date specified in the syllabus at the beginning of class. “Late” submissions refers to those submitted after class on the due date or after the due date. In the absence of documented extenuating circumstances, late work will not be accepted. If your personal circumstance requires you to miss a test, you must make arrangements with me at least 24 hours prior to the scheduled date and time of the examination. Last minute emergencies will only be accommodated, at my discretion, with authentic, substantial, written documentation of your situation. Expect that any makeup examinations or other accommodations will be different than the original examination. Makeup tests must be taken no more than 1 week after the originally scheduled date or no credit will be given.

Academic Honesty and Integrity, Academic Rights. All students at Georgia Tech are expected to follow the ethical guidelines and adhere to the policies on cheating and plagiarism and on ethical use of computing and information resources as defined in the Student Honor Code. Detail on the Code is available at [www.honor.gatech.edu](http://www.honor.gatech.edu). You will be held accountable for violations of these guidelines and policies. In addition, the Student Bill of Academic Rights (see Section XXII of the Georgia Tech Scholastic Regulations) outlines a number of rights that are directly tied to how classes are conducted.

Classroom Etiquette. The College of Management has adopted guidelines for both faculty and students. The guidelines stipulate that:

For professors: Professors are expected to treat each student with courtesy and respect; be fully prepared for each class session; conduct courses in line with the details of the course syllabus and provide the complete outline to all students; and enforce the honor code and deal with disruptive behavior.

For students: Students are expected to treat each other and the professor with courtesy and respect; conduct themselves with honor and be active about upholding the honor code; prepare for class and participate actively; and take responsibility for their actions.

**Weekly Tentative Schedule and Assignments**

**Week 1:**

**Monday, August 20.**

* Introduction, Course Overview and Administration.
  + **Readings:** Dennis, et al., Chapter 1

**Wednesday, August 22**.

* Introduction (cont’d).
  + **Readings:** Dennis, et al., Chapter 1

**Friday, August 24**.

* Project Initiation and Feasibility Analysis.
  + **Readings:** Dennis, et al., Chapter 2

**Week 2:**

**Monday, August 27.**

* Project Feasibility and Risk Assessment.
  + **Readings:** Dennis, et al., Chapter 2.

**Wednesday, August 29.**

* Project Feasibility and Risk Assessment (cont’d).
  + **Readings:** Dennis, et al., Chapter 2.
  + **Assigned**: Homework Exercise #1 (Feasibility and Risk Assessment)

**Friday, August 31**.

* Analysis of Project Opportunities and Requirements.
  + **Readings:** Dennis et al., Chapter 3

**Week 3:**

**Monday, September 3.**

* Labor Day. \*\* NO CLASS \*\*

**Wednesday, September 5.**

* Analysis of Project Opportunities and Requirements (cont’d).
  + **Readings:** Dennis et al., Chapter 3

**Friday, September 7.**

* Analysis of Project Opportunities and Requirements (cont’d).
  + **Readings:** Dennis et al., Chapter 3

**Week 4:**

**Monday, September 10.**

* Project Management
  + **Readings:** Dennis et al., Chapter 2

**Wednesday, September 12.**

* Project Management (cont’d).
  + **Readings**: Dennis, et al., Chapter 2.
  + **DUE: Homework Exercise #1**

**Friday, September 14.**

* Project Management (cont’d).
  + **Readings:** Dennis et al., Chapter 2

**Week 5:**

**Monday, September 17.**

* Project Management (cont’d). Review for Test #1.
  + **Readings**: Dennis, et al., Chapter 2.

**Wednesday, September 19.**

* Test #1.
  + **DUE: In-Class Test #1. Covers Dennis, et al., Chapters 1- 3.**

**Friday, September 21.**

* Functional Modeling.
  + **Readings**: Dennis, et al., Chapter 4.

**Week 6:**

**Monday, September 24.**

* Functional Modeling (cont’d).
  + **Readings**: Dennis, et al., Chapter 4.

**Wednesday, September 26.**

* Functional Modeling (cont’d).
  + **Readings**: Dennis, et al., Chapter 4.

**Friday, September 28.**

* Functional Modeling (cont’d).
  + **Readings**: Dennis, et al., Chapter 4.
  + **Assigned:** Homework Exercise #2 (Functional Modeling)

**Week 7:**

**Monday, October 1.**

* Functional Modeling (cont’d). Review for Test #2.
  + **Readings**: Dennis, et al., Chapter 4.

**Wednesday, October 3.**

* Functional Modeling (cont’d). Using Visio 2007 for Functional Modeling (LAB).
  + **Readings**: Dennis, et al., Chapter 4.

**Friday, October 5.**

* Test #2.
  + **DUE: In-Class Test #2. Covers Dennis, et al., Chapters 4.**

### Week 8

**Monday, October 8.**

* Structural Modeling.
  + **Readings:** Dennis, et al., Chapter 5.

**Wednesday, October 10.**

* Structural Modeling (cont’d).
  + **Readings:** Dennis, et al., Chapter 5.

**Friday, October 12.**

* Structural Modeling (cont’d).
  + **Readings:** Dennis, et al., Chapter 5.
  + **Assigned:** Project Report #1 (Feasibility and Process Analysis)
  + **DUE: Homework Exercise #2**

### Week 9

**Monday, October 15.**

* School Holiday. \*\* NO CLASS \*\*

**Wednesday, October 17.**

* Structural Modeling (cont’d). Using Visio 2007 for Structural Modeling (LAB).
  + **Readings:** Dennis, et al., Chapter 5.

**Friday, October 19.**

* Behavioral Modeling.
  + **Readings:** Dennis, et al., Chapter 6.

### Week 10

**Monday, October 22.**

* Behavioral Modeling (Cont’d).
  + **Readings:** Dennis, et al., Chapter 6.

**Wednesday, October 24.**

* Project Work Day #1

**Friday, October 26.**

* Behavioral Modeling (Cont’d).
  + **Readings:** Dennis, et al., Chapter 6.
  + **Assigned:** Project Report #2 (Structural and Behavioral Modeling)
  + **DUE: Project Report #1**

**Week 11:**

**Monday, October 29.**

* Behavioral Modeling (Cont’d). Review for Test #3
  + **Readings:** Dennis, et al., Chapter 6.

**Wednesday, October 31.**

* Behavioral Modeling. Using Visio 2007 for Behavioral Modeling (LAB).
  + **Readings:** Dennis, et al., Chapter 6.

**Friday, November 2.**

* Test #3.
  + **DUE: In-Class Test #3. Covers Dennis, et al., Chapters 5-6.**

**Week 12:**

**Monday, November 5.**

* Design Strategies.
  + **Readings:** Dennis, et al., Chapter 7.

**Wednesday, November 7.**

* Designing Classes and Methods.
  + **Readings:** Dennis, et al., Chapters 8.

**Friday, November 9.**

* Designing Classes and Methods (Cont’d).
  + **Readings:** Dennis, et al., Chapters 8.

**Week 13:**

**Monday, November 12.**

* Designing Classes and Methods (Cont’d).
  + **Readings:** Dennis, et al., Chapters 8.

# Wednesday, November 14.

* Project Work Day #2

# Friday, November 16.

* Mapping Classes to Databases.
  + **Readings:** Dennis, et al., Chapter 9.
  + **Assigned:** Project Report #3 (Project Design)
  + **DUE: Project Report #2.**

**Week 14:**

# Monday, November 19.

* Mapping Classes to Databases (Cont’d).
  + **Readings:** Dennis, et al., Chapter 9.

**Wednesday, November 21.**

* Designing User Interfaces.
  + **Readings:** Dennis, et al., Chapter 10.

**Friday, November 23.**

* Thanksgiving Break. \*\* NO CLASS \*\*

**Week 15:**

**Monday, November 26.**

* Designing User Interfaces (Cont’d). Review for Test #4.
  + **Readings:** Dennis, et al., Chapter 10.

**Wednesday, November 28.**

* Test #4.
  + **DUE: In-Class Test #4. Covers Dennis, et al., Chapters 7 – 10.**

**Friday, November 30.**

* Project Work Day #3

**Week 16:**

# Monday, December 3.

* Project Demos.
  + **DUE: Project Demo (presenting teams).**

# Wednesday, December 5.

* Project Demos.
  + **DUE: Project Demo (presenting teams).**

# Friday, December 7.

* Project Demos.
  + **DUE: Project Demo (presenting teams).**
  + **DUE: Project Report #3 (all teams**)

**\*\* There is NO Test in the Final Exam Week for this class. \*\***