MIS 330 – 001 – Systems Analysis and Design

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Office Hours: Tu - Th 2:00 – 3:00PM
W Th 6:00 – 7:20 PM
(almost) any time my door is open
and by appointment

MIS 330 – 001 Tu-Th 3:00 – 4:15 PM meets in Eng 1108


Prerequisites – Grade of ‘C’ or higher in MIS 301 (Introduction to Business Information Systems) and MIS 310 (Database)

Course Objectives – Information systems (IS) are ubiquitous. Today’s organizations and the global economy depend on information systems (or Information Technology – IT) in all aspects of their operations. And, many of us are also heavy users of IS in our daily tasks. Properly designed and implemented systems can provide firms with streamlined business processes and a competitive advantage, while poorly conceived systems can result in less successful operational support that can lead to severe operational deficiencies or failures. Understanding systems analysis and design concepts and methods are necessary for contemporary business analysts, managers, software engineers, and system users. MIS330 – Systems Analysis and Design (SA&D) – provides students with the foundation for effectively using modern systems analysis and design methodologies/techniques and tools for developing modern software systems and applications. The topics covered in MIS 330 include:

- Systems planning and feasibility analysis
- Process modeling and data modeling
- Use case analysis and system requirements
- Project management
- Systems implementation and maintenance
- Prototyping and user interface design
- Application architecture and database design
- Object-oriented analysis using UML 2.0

MIS 330 uses a combination of learning approaches to provide a comprehensive view of the course material. The course will incorporate in-class discussions, lectures, demonstrations and hands-on use of methods, and includes practical/applied systems analysis and design assignments.

Course Homepage – Blackboard 9.1 (see Course Materials section below).

Software – Microsoft Visio is highly recommended for the systems analysis and design tasks of your group project. You will also likely need to use Microsoft Word, Excel, PowerPoint, and Project for your group work. All Microsoft software are available in the George Mason student computer labs (clasttech.gmu.edu/computerlabs.cfm). George Mason and the School of Management use Microsoft Office 2007; if you are new to MS Office 2007, you can access online tutorials through the website transition.gmu.edu (click Tutorials on the left-hand menu). Additional IT related training is available free to George Mason University students; see ITTraining.gmu.edu for more information.

During the first week of the semester you should receive an email from the School of Management providing you with instructions for downloading the software through the Microsoft Developers Network Academic Alliance (MSDNAA).
**Course Materials** – Blackboard 9.1: This course will use the Blackboard Learning System CE 9.1 to deliver course materials such as lecture notes, announcements, online discussions, and assignments. You can access the course’s Blackboard site by going to courses.gmu.edu and logging in with your GMU account. From your main Blackboard page, follow the link to the MIS 330 course to access the course site. For help or support using the Blackboard system, you can contact course@gmu.edu, or call ITU Support at 703.993.8870.

**Grading and Assessment**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>25%</td>
<td>individual assessment</td>
</tr>
<tr>
<td>Exam 2 (Final)</td>
<td>25%</td>
<td>individual assessment</td>
</tr>
<tr>
<td>In-Class Quizzes</td>
<td>15%</td>
<td>4 (or more) of equal value, individual assessment</td>
</tr>
<tr>
<td>Homework/Participation</td>
<td>15%</td>
<td>multiple (relatively short) assignments plus in-class participation, most will be individual assignments, although some may require/allow for a group effort</td>
</tr>
<tr>
<td>Semester Project</td>
<td>20%</td>
<td>group effort; consists of multiple parts/phases</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td></td>
</tr>
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**Grading Scale** – Grade Percentage

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>98% or higher</td>
</tr>
<tr>
<td>A</td>
<td>92% or higher, but less than 98%</td>
</tr>
<tr>
<td>A-</td>
<td>90% or higher, but less than 92%</td>
</tr>
<tr>
<td>B+</td>
<td>88% or higher, but less than 90%</td>
</tr>
<tr>
<td>B</td>
<td>82% or higher, but less than 88%</td>
</tr>
<tr>
<td>B-</td>
<td>80% or higher, but less than 82%</td>
</tr>
<tr>
<td>C+</td>
<td>78% or higher, but less than 80%</td>
</tr>
<tr>
<td>C</td>
<td>72% or higher, but less than 78%</td>
</tr>
<tr>
<td>C-</td>
<td>70% or higher, but less than 72%</td>
</tr>
<tr>
<td>D</td>
<td>60% or higher, but less than 70%</td>
</tr>
<tr>
<td>F</td>
<td>less than 60%</td>
</tr>
</tbody>
</table>

**Exams** – There will be two (2) exams, each worth 25% of your course grade. Each exam will cover (approximately) one half of the course material (i.e., the second exam is not cumulative, but will include and/or be based on some material from the first half of the course). Course readings, lecture notes, and in-class discussions will be on the exams. Exams will be held in class on the dates designated in the course schedule. Exams will be closed book/note and are individual activities.

**Quizzes** – There are four (4) scheduled in-class quizzes throughout the semester, totaling 15% of your final grade. (However, additional “pop” quizzes will be incorporated into the semester if it becomes apparent that people are not properly prepared for class.) Quizzes will be held on the dates designated on the course schedule. Quizzes are individual activities, and are closed book and closed notes. Typically, a quiz is 8-10 multiple-choice questions, although other question formats may sometimes be used. Additional information on the quizzes (e.g., topic coverage) will be provided as we approach the quiz dates.

**Homework** – There will be a number of relatively small (i.e., typically < 1 hour effort) homework assignments. A few will be somewhat longer/larger in effort. These assignments are intended to provide you with the opportunity to experience and practice aspects/tools/techniques/approaches of the larger SA&D process. Specific details are included with each assignment and discussed in class. Assignments will typically be turned in via Blackboard, although a printed copy may sometimes be requested as the deliverable. (Note: It is often a good idea to bring a hardcopy with you to class, even if not specifically requested.) Late assignments are accepted, but with a 20% penalty for each day late (starting immediately after the submission deadline).

**Student Responsibilities** – Students are expected to attend class each class session and to participate in class discussions and exercises. Students are expected to complete assignments on time and attend course quizzes and exams. Make-up quizzes and exams will not typically be provided except in circumstances of illness, injury, or with advanced notification and approval. Students are expected to use their GMU e-mail accounts for communication with the instructor and other students in the class. All emails from the instructor will be sent to your gmu.edu e-mail addresses. Note: Please try to avoid using Blackboard for communications (since I don’t typically look for messages in that environment). Students are expected to contribute equally to all group project work if/when assigned.
Students are expected to respect their fellow classmates and instructor, both in and out of the classroom environment. Students are expected to turn off or silence their mobile phones during class time (this also means no texting ☺) and to refrain from using e-mail or instant messaging during class time. Failure to abide by these business-world standards may lead to confiscation of the technology.

Learning Goals for Undergraduate Programs¹:
1. Our students will be competent in their discipline.
2. Our students will be aware of the uses of technology in business.
3. Our students will be effective communicators.
4. Our students will have an interdisciplinary perspective.
5. Our students will be knowledgeable about global business and trade.
6. Our students will recognize the importance of ethical decisions.
7. Our students will be knowledgeable about the legal environment of business.
8. Our students will be knowledgeable about team dynamics and the characteristics of effective teams.
9. Our students will understand the value of diversity and the importance of managing diversity in the context of business.
10. Our students will be critical thinkers.

Learning Goals of the Information Systems and Operations Management (ISOM) Program:
1. Apply knowledge of information technology and business functions to understand its application in assessing, designing, and improving business processes.
2. Develop data organization, storage, and processing solutions to support organizational needs for information management. There is also the option of developing skills in the area of supporting decision making through business intelligence solutions.
3. Use knowledge of computer networks as part of the IT solutions for improving business processes. There is also the option of developing more advanced skills in the areas of network and security.
4. Effectively manage information technology projects.
5. Understand the overall systems development life cycle and be able to recommend IT system solutions accordingly. In addition, there is the option of learning appropriate development tools to develop prototype of IT solutions for business management.

Honor Code Statement – Cheating and Academic Dishonesty: All students are responsible for knowing and following the GMU Honor Code Statement (honорcode.gmu.edu). Students will be given a 0 on any assignment where the University Guidelines for Academic Honesty are not followed. This includes homework, project work, quizzes, and exams. In the event of a violation of the GMU Honor Code, the violating student will be immediately reported to the GMU Honor Committee.

Learning Disabilities – If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474, at the beginning of the semester. All academic accommodations must be arranged through the DRC.

Inclement Weather Policy – If the university is open and holding classes, we will generally have class. However, use your best judgment on what is safe for you in getting to/from campus. Further, an announcement will be distributed via e-mail and Blackboard should class need to be cancelled.

¹ The Provost’s Office has requested that students be informed of the availability of the MASON ALERT SYSTEM to provide emergency information when needed. You are encouraged to sign up for this service by visiting https://alert.gmu.edu. An emergency poster has been placed in each classroom. Additional information about emergency procedures can be found at http://www.gmu.edu/service/cert.
How to Succeed in this Course

• Come to class!

• Come to class prepared! In other words, come to class having read the assigned material and be prepared to discuss the material and participate in the in-class activities. Advance preparation gives you the best opportunity to be successful with this material.

• Take notes; don’t rely only on the PowerPoint slides or on just listening, then recalling what was said. While the material may “make sense” and seem relatively easy during and immediately after class, this often fades with time, i.e., give yourself the best opportunity to be successful by taking notes.

• After each class, take a few minutes to:
  – Review the materials in your notes that were covered.
  – Consider what questions were asked and answered, as well as those that were left unanswered.
  – What items, if any, were highlighted, during the discussion?
  – What are you still confused about?
  – What questions, if any, do you have that were not answered?
  – How does today’s material connect with what has previously been covered?
  – How might this material connect to recent or current events?
  – How might this material be relevant to your current job or future career?

• What are the key terms/concepts from the chapter, related readings, or exercises? Do I know what these terms/concepts mean?

• To prepare for a quiz, review the materials that have been covered. Make sure to have read the assigned material; reread it; reread it again. Look for real-world examples of how the technology/concept is being used. Don’t wait until the last minute to start your preparations.

• To prepare for an exam, do the same as for a quiz, only on a larger scale since there will be more material.

• Note that some of this material will require basic understanding of terminology and concepts; it will require basic memorization of definitions, descriptions, examples, even lists. Other material will be much more applied in nature and placed in a business-world context.

• Do the homework assignments and get them turned in correctly and on time. While the assignments may not be easy, if you fulfill the specified requirements you should receive full (or almost full) credit for the assignment. To be successful:
  – Make sure you understand the requirements for the assignment … details matter!
  – Make sure you fulfill all requirements by the deadlines. (Note that there may be interim deadlines or subtasks that need to be completed for some assignments.)
  – Make sure you take care of all required details for the assignment!
  – Double-check what you have done against the assignment; what might have been missed?
  – Turn the assignment in by the due date and time, typically via Blackboard. Note that a hardcopy (i.e., a printed or hand-written copy) may be requested for some assignments.
  – Keep a copy of your assignment until the end of the semester, just as a backup in case there is a problem with your submission. Also, keep graded materials after they have been returned.
  – Remember that late assignments will be accepted, but with a penalty; better late than never!
  – Unless otherwise noted, you are to complete the assignments on your own. Copying the work of others may result in an Honor Code violation (for ALL involved) and result in a score of zero on the assignment and possibly additional disciplinary action.

Note that this schedule is subject to update and revision. Additional readings may be assigned.

<table>
<thead>
<tr>
<th>Class #</th>
<th>Week</th>
<th>Topic</th>
<th>Readings</th>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/24</td>
<td>Course Introduction / Overview</td>
<td>Ch 1 – The Systems Analyst and IS Development</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1/31</td>
<td>Project Management</td>
<td>Ch 2 – Project Selection and Management</td>
<td></td>
</tr>
</tbody>
</table>
| 3       | 2/7  | Requirements Discovery | Ch 3 – Requirements Determination  
Chapter 2 from “The Mythical Man-Month” – F. Brooks  
http://www.csee.umbc.edu/~mgrass2/cmsc345/paper%20-%20MythicalManMonth.pdf (Note that the web addresses are likely to change … Search for “Mythical Man Month” if this address does not work) | |
| 4       | 2/14 | Modeling Systems Requirements w/ Use Cases & User Stories | Ch 4 – Use Case Analysis  
“The Vasa Capsizes”  
http://www.virtualschool.edu/mon/CaseStudies/Vasa/vasa.html | Quiz 1 |
| 5       | 2/21 | Process Modeling | Ch 5 – Process Modeling | Quiz 2 |
| 6       | 2/28 | Data Modeling | Ch 7 – Moving into Design | |
| 7       | 3/6  | Exam 1 | | |
| 8       | 3/13 | Spring Break | Spring Break | Spring Break |
| 9       | 3/20 | Architecture Design | Ch 8 – Architecture Design  
Ch 6 – Data Modeling (limited coverage – essentially MIS 310-related material) | |
| 10      | 3/27 | User Interface Design | Ch 9 – User Interface Design | |
| 11      | 4/3  | Program Design | Ch 10 – Program Design | Quiz 3 |
| 12      | 4/10 | System Implementation  
Data Storage Design | Ch 12 – Moving into Implementation  
Ch 11 – Data Storage Design (very limited coverage – details forthcoming) | |
| 13      | 4/17 | System Transition | Ch 13 – Transition to the New System  
http://www.mainecompact.org/documents/Faculty%20Rewards/Kotter%20Leading%20Change%20-%20Why%20Transformation%20Efforts%20Fail.pdf | Quiz 4 |
| 14      | 5/1  | Topic to be determined – Project Presentations | | |
| 15      | 5/15 | Sec 001 – Final Exam is scheduled for 1:30 – 4:15 PM | @ Normal Location | |

**Note:** This course moves very quickly, at least it may feel that way. Even meeting twice a week will often require coverage of a lot of material in each class session; i.e., there is a lot for you to prepare for each session. Therefore, you should budget your time and stay ahead of (or at least with) the topic coverage. As I was told during one course in which I was enrolled: “After today’s class (i.e., the first class meeting), you should feel about a week behind. It will probably get worse before it gets better. Read, do your assignments, study, and work hard, and by the end of the term you should be able to catch up. But, it requires you to do the work and to put in the time.” Please keep this in mind and you should have a good experience in this course!