Course Syllabus
University of Wisconsin – Milwaukee (UWM)
School of Information Studies (SOIS)

Course Title
Introduction to Systems Analysis

Semester
Spring 2016

Course and Section Number
INFOST 340 – 002

Meeting Times and Location
Thursday, 5:30 PM – 8:10 PM, Northwest Quad Bldg D 1990

Instructor
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Office Hours
Every Thursday afternoon, I will be holding Office Hours in my UWM office. Please feel free to drop by to ask a question, to discuss a problem, or just to say hello. Meetings or calls at other times may be arranged with me via email.

Catalog Description
Theories, principles, and tools for planning, organizing, assessing, and evaluating information. Emphasizes the importance of user's perspective. Covers the various stages of systems analysis and outline the appropriate methods for each stage. 3 credits.

General Description
This is an introductory course in systems analysis for computer-based information systems. Systems analysts are primarily responsible for eliciting user requirements, proposing a systems solution that meets those requirements, and creating a model of the requirements and a proposed solution that can be understood by both system users and system developers. Systems analysts also get involved in project identification, planning, management, supervision of detailed system design, and supervision of system construction. The audience for this course includes anyone who is interested in the analysis and design of computer-based information systems.

Required Texts

Hoffer, J. A., George, J. F., & Valacich, J. S. (2014). *Modern Systems Analysis and Design (7th ed.)*. Boston: Pearson.

Software
Many assignments for the course will require you to create diagrams (data flow diagrams, use case diagrams, activity diagrams, entity-relationship diagrams, state-transition diagrams, etc.). The required software for creating these diagrams is Microsoft Visio Professional 2013. This software is available to SOIS students via the Microsoft DreamSpark Program and can be downloaded via the SOIS Free Software eAcademy page at https://www4.uwm.edu/sois/resources/it/eacademy/index.cfm .

Microsoft Visio is a Windows-only product. Students using an operating system other than Windows may find it easiest to get access to Visio by using the SOIS Virtual Lab. For more information on using the SOIS Virtual Lab, please visit the SOIS Virtual Lab Information page at https://www4.uwm.edu/sois/resources/it/virtuallab/ .

Some students who are running Mac OS X as their host operating system may want to install VMware Fusion in order to create a Windows guest operating system under which Viso can run. To download VMware fusion, please visit the SOIS Free Software eAcademy page at https://www4.uwm.edu/sois/resources/it/eacademy/index.cfm .

Students wishing to use other diagramming tools should contact me for approval before using them.

Course Topics
- Understanding the Role of the Systems Analyst
- The Systems Development Environment
- The Origins of Software
- Managing the Information Systems Project
- Identifying and Selecting Systems Development Projects
- Initiating and Planning Systems Development Projects
- Determining System Requirements
    - Business Process Modeling
- Structuring System Process Requirements
    - Object-Oriented Analysis and Design: Use Cases
    - Object-Oriented Analysis and Design: Activity Diagrams
- Structuring System Data Requirements
- Designing Databases
- Designing Interfaces and Dialogues
- Designing Distributed and Internet Systems
- System Implementation
- Maintaining Information Systems

Course Objectives
- Understand the role of the systems analyst in understanding the needs and managing the expectations of the project stakeholders.
- Understand how to identify and initiate a viable project.
- Understand how to plan, elicit and gather system requirements effectively.
- Create a model of the requirements that can be used to get the informed approval of stakeholders.
- Suggest a preliminary design for an effective systems solution that meets the requirements.
- Create a model of the requirements that can be used either to construct a new information system or to serve as the basis for selecting a vendor-supplied information system.

- Understand the potential role of the systems analyst in supervising the creation of detailed system design specifications, as well as the construction, testing, and approval of the system solution.
- Write a report that persuades stakeholders that the proposed system should be implemented.

Instructional Methods
- Reading
- Lecture
- Discussion
- Skills practice assignments
- Student project and report

Course Schedule
The schedule for this course is being developed as a separate document this is accessible through our D2L page. When complete, a copy of that schedule will be included as an appendix to this syllabus.

The course schedule is always subject to reasonable change by the instructor to account for changes in circumstance and to correct errors. Schedule changes will be posted to the schedule document and announced to the class via email. This syllabus document will not be updated to reflect schedule changes.

Work Required of Students

Estimated Workload
The total number of hours estimated for the student to complete the work required for this course is 160 hours. The actual amount of time required will vary according to the experience and expertise of the student. Grades will be based on work output produced and submitted rather than by the time expended by the student.

General Issues
1. Attendance at class sessions is required and will be included in your Attendance, Class and Group Contribution grade. Grading for attendance will be proportional. So, if you miss 5% of class sessions, you will earn a 5% lower attendance score. Some very small number of missed classes can be expected due to uncontrollable circumstances. So, for instance, you could miss 8% of class sessions and still earn an attendance grade of 92. If you have a prolonged absence that it excusable under university policy, please provide me with proof of such so that I may consider this when calculating your attendance grade.

2. Participation in class sessions is required and will be included in your Attendance, Class and Group Contribution grade. Grading for participation will be based on the number of classes in which you participate and the extent of your participation. Credit will be earned for asking or answering questions in class. Even more credit will be earned by presenting your solution to a Skills Practice assignment to the class (see below).

3. Because our class sessions will include a substantial amount of discussion, you will be expected to be ready to discuss the topics of the day when you arrive at class. So, all readings should be completed before class.

4. While most lectures and demonstrations will be done in person during class, some audio or video recording may be assigned for you to listen to or view outside of class. In these cases, you will be expected to have listened to or viewed the recording before the class meeting for which it has been assigned.

5. Skills Practice Assignments should be completed before the class in which they will be discussed. Substantial assignment credit will be associated with handing in work that reflects a good faith effort before class begins. My discussion of Skills Practice Assignments (below) will explain why these requirements are so important.

6. All work that you submit must be your own. So copying of the work of others (current students, past students, me, or others) is prohibited. Nevertheless, I encourage you to consult with members of your group or with me prior to handing in your work. Feel free to show the current state of your work to anyone in your group and ask for feedback, suggestions or encouragement. I also encourage you to review the work of others that is not a direct solution to the assignment at hand (examples in textbooks, examples on the Internet, or an example that a group of people might work through on a white board). Collaborate as much as required in order to fully understand the techniques needed to do your assignment. Systems analysis is not a solitary activity. So, learning systems analysis need not be a solitary activity either.

Attendance, Class and Group Contribution

My goal for this class is that it will be very interactive. To achieve this, you will need to speak during class in order to share your questions and insights.

You will be assigned to a group that will act as a study group. You will be pleased to know that there are no group deliverables. Instead, members of each group will be expected to provide feedback and encouragement to other members of the group on their Student Project (see below). Groups will meet during some class sessions to discuss their progress. Some groups may also decide to schedule meetings outside of class time to discuss their projects. A D2L forum will be created for each group so that you can exchange ideas and post drafts of your work for comment. I encourage you to participate actively in your group and to seek support from the other members. Historically, students from the most active groups have earned the highest grades.

Please note that the Attendance, Class and Group Contribution grade component is substantial (15% of your final grade). So, please take these activities seriously. Activities considered in this portion of your grade will include:

- Attendance during class sessions.
- Speaking during class. This includes asking questions, providing answers, or simply offering your observations.
- Presenting your Skills Practice Assignment work (see below) during class.
- Participating in group breakout sessions held during class.
- Reviewing the work of your group members, offering constructive comments, suggestions, and encouragement.
- Posting to forums (those for the entire class and those for individual groups).

- Making your in-class presentation of your project (see below) during the final week of class.

As one of the last assignments of the semester, I will ask each of you to provide peer review feedback on the participation of the members of your group using standard forms that I will provide. Your good faith completion of the forms and the evaluation that you receive from your peers will both count toward a significant portion of your Class and Group Contribution grade component.

Skills Practice Assignments
Your major work product for this course will be your Project Report (see below). You will complete this report in three parts (see below). The Project Report will contain a collection of documents and diagrams that pertain to your project. Unless you are already a practicing systems analyst, most of these documents and diagrams will be new to you.

The purpose of the Skills Practice Assignments is to give you the opportunity to practice with the tools and techniques that you will need to produce each document and diagram in your Project Report. The assignments are timed so that you should have the opportunity to practice each skill before you need to use it on your project. Later, when you are writing your project report, you will be able to pay more attention to whether you have understood and expressed the stakeholders' requirements than to whether you understand how to create the documents.

In my experience, most of the tools and techniques that you will be learning in this class are easier to watch others use than they are to use yourself. During lectures, I may lecture on a particular document or diagram. Then, I will show you a finished version. In some cases, I will even demonstrate the step-by-step creation process for the diagram. Then I will assign a Skills Practice Assignment that will be due at the beginning of our next class. If you are like most of us, you will find the assignment harder to do than you expected. Often, you will struggle over how detailed or how summarized to make your document. Or, techniques that looked easy will suddenly seem much harder. As I mentioned earlier, you can feel free to consult with others for appropriate advice. Finally, you will complete the assignment as best you can and submit it.

We will begin the next class by discussing solutions to the Skills Practice Assignment. Two students will be asked to present their work and we will discuss it (constructively and supportively). Then, I will present my version of the assignment solution (never perfect) and we will discuss that as well. The real learning comes from the combination of having tried the skill and the subsequent discussion in class. Those who have really done the work before class will get that benefit. Those who wait and do the work later will get a greatly reduced benefit. Having seen our solutions, they will miss out on the benefit of having tackled one of these problems from scratch.

To encourage you to work on and submit your Skills Practice assignments before class, I have developed a grading system that rewards good faith effort, timely submission, and attention to detail. In order to demonstrate good faith effort, you must turn in work that shows that you actually tried to do each part of the assignment. In order for your submission to be timely, it must be submitted before the start of the class in which we review the solutions. In order to demonstrate attention to detail, you must submit the proper number of files in the proper file format using the proper file naming conventions. Submissions that meet all of the requirements will earn a minimum score of 85. Submissions that do not meet all of the requirements will earn a maximum score of 84.

I know from experience that you can only learn these skills by doing them, reviewing them, and asking questions. The grading system is meant to reward you for doing just that.

Feedback on each Skills Practice Assignment will come in two forms:

1. **Your primary feedback will come on the day on which the assignment is due**. As described above, we will look at and discuss approximately three versions of the assignment work product. Please, don't be shy about asking questions during this part of the class. This is your best opportunity to learn the skill and to clear up any misconceptions.

2. The **secondary feedback** will be grades and comments that will be returned to you based upon your assignment submissions. Due to the number of students in the class, **you can expect to receive this secondary feedback two within two weeks** of submission. Based upon our earlier class discussions, you should not be surprised by this feedback. But, if you are surprised, you can feel free to contact me discuss any misconceptions that either of us may have had.

Student Project
Each student will plan and execute a simulated systems analysis and design project. I have created five different project scenarios on which students will base their projects. No two students who are assigned to the same group will be assigned the same project scenario. This will leave you free to consult with and seek the counsel of members of your group. You will each be doing the same work for a different project scenario.

You are free to discuss your project within your own group. Yet, to promote academic honesty and independent work, I require that you do not consult with members of other groups who are working on the same project scenario as you.

Remember that you will not be implementing this system as part of your course work. You will be doing the planning, the systems analysis, recommending an implementation approach, and doing some parts of the system design for that recommended approach. This work will be presented in a three-part Project Report (see below).

Project Report
You will complete and submit the Project Report in three parts. These are:

1. Project Plan
   This part of the report will set the stage for the rest of the project. While the exact requirements for this document will be published separately, this part of the report will include:

   - Identifying the subject organization and its stakeholders
   - Identifying the nature and scope of the problem (or opportunity) to be addressed.
   - Presenting a plan for further requirements elicitation and gathering.

2. Systems Analysis
   This part of the report will document the requirements against which any proposed solution must be measured. While the exact requirements for this document will be published separately, this part of the report will include:

- A context diagram that describes the scope and high-level data flow of the computer-based information system.
- Use case diagram(s) that describe the scope and organization of functional requirements for the computer-based information system.
- Use case specifications that describe the process flows, scenarios, and other related information for each use case.
- An activity diagram that illustrates the details of a complex scenario described in one of the use case specifications.
- A conceptual data model that describes the requirements for the data store necessary to persist data required by the computer-based information-system.
- A state-machine diagram that documents the various states and transition conditions applicable to a major construct within the data model.

3. Proposed Solution
   This part of the report will recommend a technological architecture for the computer-based solution and will present selected details of the design for the user interface of the computer-based information system including:

   - Screen designs
   - Report designs

A requirements document will be published for each of the 3 parts of the Project Report. Requirements will include a required outline for you to follow when writing your report as well as a grading rubric that I will use to grade the assignment. The grading rubric will also address the issue of points to be deducted for late submission and the date beyond which a submission will not be graded and zero credit will be earned.

Project Presentation
At the end of the semester, each student will give a short presentation of her/his proposed solution to the class. The primary purpose of the presentation is to share your work with your classmates. While members of your group will have seen drafts of your proposed solution and taken part in discussions of your work, this will be the only opportunity for the rest of the class to see the results of your efforts.

Grading

Basis for Determining Grade
The various components of student work will contribute to the final grade based upon the following percentages:

- Attendance, Class and Group Contribution: 15%
- Skills Practice Assignments: 40%
- Project Report parts:
  - Project Plan 5%
  - Systems Analysis 35%
  - Proposed Solution 5%

Letter grades will be determined as follows:

- A 93 - 100%;
- A- 90 - 92%;
- B+ 87 - 89%;
- B 83 - 86%;
- B- 80 - 82%;
- C+ 77 - 79%;
- C 73 - 76%;
- C- 70 - 72%;
- D+ 67 - 69%;
- D 63 - 66%;
- D- 60 - 62%;
- F 0 - 59%;

UWM AND SOIS ACADEMIC POLICIES

The following links contain university policies affecting all SOIS students. Many of the links below may be accessed through a PDF-document maintained by the Secretary of the University: http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf. Undergraduates may also find the ***Panther Planner and Undergraduate Student Handbook*** useful (http://www4.uwm.edu/osl/students/).

Students With Disabilities
If you will need accommodations in order to meet any of the requirements of a course, please contact the instructor as soon as possible. Students with disabilities are responsible to communicate directly with the instructor to ensure special accommodation in a timely manner. There is comprehensive coverage of issues related to disabilities at the Student Accessibility Center (http://www4.uwm.edu/sac/), important components of which are expressed here: http://www.uwm.edu/Dept/DSAD/SAC/SACltr.pdf.

Religious Observances
Students' sincerely held religious beliefs must be reasonably accommodated with respect to all examinations and other academic requirements, according to the following policy: http://www4.uwm.edu/secu/docs/other/S1.5.htm. Please notify your instructor within the first three weeks of the Fall or Spring Term (first week of shorter-term or Summer courses) of any specific days or dates on which you request relief from an examination or academic requirement for religious observances.

Students Called to Active Military Duty
UWM has several policies that accommodate students who must temporarily lay aside their educational pursuits when called to active duty in the military (see http://www4.uwm.edu/academics/military.cfm), including provisions for refunds, readmission, grading, and other situations.

Incompletes
A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantial cause beyond the student's control, has been unable to take or complete the final examination or some limited amount of other term work. An incomplete is not given unless

the student proves to the instructor that s/he was prevented from completing course requirements for just cause as indicated above (http://www4.uwm.edu/secu/docs/other/S31.pdf).

Discriminatory Conduct (such as sexual harassment)
UWM and SOIS are committed to building and maintaining a campus environment that recognizes the inherent worth and dignity of every person, fosters tolerance, sensitivity, understanding, and mutual respect, and encourages the members of its community to strive to reach their full potential. The UWM policy statement (http://www4.uwm.edu/secu/docs/other/S47.pdf) summarizes and defines situations that constitute discriminatory conduct. If you have questions, please contact an appropriate SOIS administrator.

Academic Misconduct
Cheating on exams and plagiarism are violations of the academic honor code and carry severe sanctions, ranging from a failing grade for a course or assignment to expulsion from the University. See the following document (http://www4.uwm.edu/osl/dean/conduct.cfm) or contact the SOIS Investigating Officer (currently the Associate Dean) for more information.

Complaints
Students may direct complaints to the SOIS Dean or Associate Dean. If the complaint allegedly violates a specific university policy, it may be directed to the appropriate university office responsible for enforcing the policy (http://www4.uwm.edu/secu/docs/other/S49.7.htm).

Grade Appeal Procedures
A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow SOIS appeal procedures for undergraduates as seen here: (http://www4.uwm.edu/sois/programs/graduate/mlis/policies/appeals.cfm) In the case of a graduate student, the Graduate School, (http://www4.uwm.edu/sois/programs/undergraduate/ug_appeals.cfm).

Last Revised
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