

# **Course Syllabus**

## **University of Wisconsin – Milwaukee (UWM)**

### **School of Information Studies (SOIS)**

#### **Course Title**

Introduction to Systems Analysis

#### **Semester**

Fall 2016

#### **Course and Section Number**

INFOST 340 – 201

#### **Meeting Times and Location**

Online

#### **Instructor**

Kevin Trainor

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#### **Online Office Hours**

Every Thursday evening, I will be holding Online Office Hours using the GoToMeeting Platform. The first order of business will be to review assignments that were due for the previous week. In the case of quizzes, we will review the correct answers to the quiz. In the case of Skills Practice Assignments, we will review student solutions to the assignment as well as my solution. Students will earn substantial participation credit for volunteering to present their answers to quiz questions or their solution to Skills Practice Assignments. We will also discuss any questions that students have regarding assignments for the current week. While this is an optional meeting, I recommend that you attend whenever possible. It is a good learning experience and an excellent way to earn participation credit. You may join the GoToMeeting session using [this link](#). For those who are unable to attend, I intend to post a recording of the Online Office Hours session in our Weekly Schedule each week.

#### **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. **ISBN-10:** 0132991306. **ISBN-13:** 978-0132991308. *Please note: This text is available in hardcover, as an e-Textbook, and in a paperback international edition. Any of these 7<sup>th</sup> Edition versions of the textbook will suffice.*

## 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 2016. 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 Visio 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 alternative diagramming tools **must** contact me for approval **before** using them to complete assignments.

## Course Topics

- Understanding the Role of the Systems Analyst
- The Systems Development Environment
- The Origins of Software
- Initiating and Planning Systems Development Projects
- Determining System Requirements
  - Business Process Modeling
- Structuring System Process Requirements
  - Context Diagrams
  - Decision Tables
  - Use Cases
  - Activity Diagrams
- Structuring System Data Requirements
  - Conceptual Data Modeling
- Designing Databases
  - Logical Database Design
- Designing Interfaces and Dialogues
- Designing Distributed and Internet Systems
- System Implementation
- Maintaining Information Systems

## Course Objectives

- Explain the role of the systems analyst in understanding the needs and managing the expectations of the project stakeholders.
- Explain how to identify and initiate a viable project.
- Explain 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.
- Explain 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
- Recorded Lecture
- Discussion
- Quizzes
- Skills practice assignments
- Student project and report

## Course Schedule

The schedule for this course will be available via our [Weekly Schedule](#) at:

[http://courseinfo.ligent.net/2016fa/uwm/infost340\\_201/index.html](http://courseinfo.ligent.net/2016fa/uwm/infost340_201/index.html)

The course schedule is always subject to reasonable change by the instructor to account for changes in circumstance and to correct errors. When changes are made to the schedule, they will be announced via D2L Announcements and email.

## 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.

### Reading

There are required readings from the Hoffer text during nearly every week of the course. Other required and optional readings are assigned as appropriate throughout the course. The reading assignments for a particular week can be found in the [Weekly Schedule](#). I recommend that you do any reading assignments for a particular week before watching any lecture or tutorial videos that are assigned.

## Viewing Lectures and Tutorials

Lectures and tutorials will be available for your viewing as video recordings. You will find a list of assigned videos for each week in the [Weekly Schedule](#). I recommend that you view any lectures or tutorials assigned for a particular week before attempting quizzes or completing work on Skills Practice Assignments.

## Participation

This is an online course. Nevertheless, the course has been designed to encourage you to interact frequently with me and with other students. This participation component is an essential part of learning systems analysis. Accordingly, it accounts for 10% of the final grade for this course. The following elements are all part of the participation component of this course.

### 1. Online Office Hours

Every Thursday evening, I will be holding Online Office Hours using the GoToMeeting Platform. The first order of business will be to review assignments that were due for the previous week. In the case of quizzes, we will review the correct answers to the quiz. In the case of Skills Practice Assignments, we will review student solutions to the assignment as well as my solution. Students will earn substantial participation credit for volunteering to present their answers to quiz questions or their solution to Skills Practice Assignments. We will also discuss any questions that students have regarding assignments for the current week. While this is an optional meeting, I recommend that you attend whenever possible. It is a good learning experience and an excellent way to earn participation credit. You may join the GoToMeeting session using [this link](#). For those who are unable to attend, I intend to post a recording of the Online Office Hours session in our Weekly Schedule each week.

### 2. Forum Posts

#### *Introductions Forum*

You will earn participation credit for posting to the class discussion forums on D2L. During Week 1, you are required to post an introduction to yourself in the Introductions Forum. Posts to this forum will receive participation credit.

#### *Open Discussion Forum*

The open discussions forum is the online equivalent of speaking during a face-to-face class. This is the place to ask questions or to make comments that relate to the course. Everyone should feel free to contribute to conversations in a responsible way. Posts to this forum will receive participation credit. For those of you who are unable to attend Online Office Hours sessions, this is an alternative way to earn participation credit.

#### *Study Group Forums*

While you will be submitting work on your Case Project individually, you will also be assigned to a study group to help support your individual work (more details are provided below). A D2L forum will be created for each study group to allow them to discuss their work and to exchange drafts of their work for review. Posts to these forums will receive participation credit.

### 3. Study Group Meetings

Optionally, the members of your study group may decide to conduct meetings either face-to-face or using some online meeting tool like Skype. Participation credit will be earned for these meetings provided that one (and only one) representative of the group completes a Group Meeting Report Form and submits it to the proper D2L drop box by the week-ending deadline.

#### **Quizzes**

Quizzes will be used as a learning assessment tool during weeks in which there is no Skills Practice Assignment. Questions will be based upon the textbook readings and the recorded video lectures. Quizzes will be administered using the D2L quiz feature. You will be allowed to make multiple attempts at each quiz. Grades will be based upon the most successful attempt. Each quiz will close at the week-ending deadline. No attempts will be allowed after the week-ending deadline. Quiz answers will be reviewed during the next Online Office Hours session.

#### **Skills Practice Assignments**

Your major work product for this course will be the 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 case 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 case 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 by the week-end deadline. 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.

Solutions to the Skills Practice Assignments will be reviewed at the next Online Office Hours session. One or 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 the week-ending deadline 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 the week-end deadline, 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 by the week-end deadline. 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.

Late assignments will be accepted for up to 1 week from the original week-ending deadline and will earn a score of 84 or lower. **Assignments received after the 1-week late period will earn a score of zero** and will not receive feedback comments.

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

1. **Your primary feedback will come from our review of solutions during the next Online Office Hours session.** As described above, we will look at and discuss 2 to 3 versions of the assignment work product. Please, don't be shy about asking questions during this part of the session. This is your best opportunity to learn the skill and to clear up any misconceptions. Since the Online Office Hours session is optional and since students might not be able to attend some particular Online Office Hours session, I will be recording these sessions and posting the recording to our weekly schedule.
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 within 2 to 3 weeks** of submission. Based upon our discussions during Online Office Hours, you should not be surprised by this feedback. But, if you are surprised, you can feel free to contact me to discuss any misconceptions that either of us may have had.

### **Case Project**

You will be expected to plan and execute a simulated systems analysis and design project that is based upon a case scenario. I have created five different case scenarios on which students will base their projects. No two students who are assigned to the same study group will be assigned the same case 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 decision table that provides details for set of business rules that are implemented by this project.
- 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 identify a proposed solution and provide details regarding the following:

- Technical Architecture
- Screen designs
- Report designs

I will be publishing a separate requirements document for each of these 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 we 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.

### **Only Submit Your Own Work**

All work that you submit for this course must be your own. So direct 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.

## **Grading**

### **Basis for Determining Grade**

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

- Participation: 10%
- Quizzes and Skills Practice Assignments: 45%
- Project Report: 45%
  - 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](http://www4.uwm.edu/sois/programs/undergraduate/ug_appeals.cfm)).

**Last Revised**

2016-09-02