UMSL

Syllabus: Course INFSYS 3810
Information Systems Analysis

About this course:

Required texts: Tilley, Scott, *Systems Analysis and Design, 12th Edition,* 2021.

Gause, D.C. and G.M. Weinberg, *Are Your Lights On?   How to Figure Out What the Problem REALLY Is,* New York: Dorset House, 1990.

The Field Guide to Human-Centered Design (*download for free; see class website*)

PREREQUISITES*:* INFSYS 3806 (Object Oriented Programming I), with a grade of C- or better.

Course Description

LEARNING OBJECTIVES*:* Systems Analysis and Design is the art of problem solving.   Systems analysis is the study of a current business system and its problems, the determination and definition of business needs and information requirements, and the evaluation of alternative solutions. Systems design (next semester) is the general and detailed specification of a computer and human solution that meets the requirements determined during systems analysis. During the life of a system, a systems analyst may monitor or evaluate its ability to continue to meet business requirements, and will design and implement modifications and enhancements in response to end-user requests and environmental changes.

The class Learning Objectives are:

- $ Introduce students to Systems Analysis concepts and tools
- $ Introduce Project Management concepts and tools
- $ Introduce the role of ethics in systems planning
- $ Improve (creative) problem solving abilities
- $ Improve ability to work in a group
- $ Learn the foundations of systems analysis, including methodologies, standards, and tools for data acquisition and documentation
- $ Successfully complete a systems analysis project for a specific client by creatively applying methodologies, standards, and tools for data acquisition and documentation
- $ Understand the difficulty associated with transnational analysis project
- $ Understand the environmental issues associated with the project
- $ Understand the application of ethics on an analysis project

At the conclusion of the course, you should be able to:
- $ Creatively problem solve
- $ Learn from failures

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- $ Work successfully with a group of your peers on a common problem
  - $ Communicate better
  - $ Analyze an existing information system (whether manual or automated)
  - $ Prepare and present a cost benefit analysis, including a risk assessment
  - $ Successfully make a business case for a technological solution
  - $ Understand the principles of SAD
  - $ Understand SAD standards and measures thereof
  - $ Understand methodologies and the differences among them
  - $ Work with a variety of SAD methods, and tools
  - $ Understand CASE tools
  - $ Define object, data and process models
  - $ Understand and apply traditional process-oriented life cycle methods
  - $ Understand and apply data-oriented life cycle methods
  - $ Understand and apply agile development methods
  - $ Understand and apply human-centered design methods
  - $ Document business processes
    - $ Understand system stakeholders and understand how to address their many perspectives
  - $ Utilize observation, questionnaires and interview schedules to discover system requirements
    - $ Document information system requirements
  - $ Generate alternative solutions to an information systems problem and choose among them
    - $ Prototype a user interface for a new information system

ONLINE CLASS SYLLABUS   http://www.umsl.edu/~sauterv/analysis/ist3810.html

   Canvas site access to more detail upon request

OTHER USEFUL WEBSITES:

Networking Events	http://www.umsl.edu/~sauterv/analysis/event_schedule.html
Acceptable Usage Policy	http://www.umsl.edu/technology/About%20ITS/ITS%20Policies/acceptable.html
Student Technology Guide	http://www.umsl.edu/technology/publications/stutechguide/
Student Conduct Code	http://www.umsl.edu/~studentconduct
UMSL Home Page	http://www.umsl.edu/
IST Home Page	http://ist.umsl.edu

TIME REQUIREMENTS:

If this course were offered on campus, you would be in class 2.5 hours/week plus travel time. The online version is no different in terms of expectations for your involvement. This is an active online course that requires 3 hours of your time each week in addition to the time it takes you to read the required materials, watch the videos, and complete the assignments. That means that you need to plan to spend a minimum of 6

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hours every week up to 9-10 hours a week) on activities related to this course. If you are worried about your preparedness, consider taking the Online Readiness Survey to help decide if an online course is right for you.

TEACHING PHILOSOPHY: My teaching develops students' problem solving skills, discipline and technical skills. Below is a summary of how I accomplish that.

- $ Active learning projects are critical, both to motivate students with real clients, and to expose students to uncontrived dynamics of IT work. Such projects help expose students to the realities of IT projects that cannot be learned by working on a paper case, which, by its nature, is a simplification of the organization. Further, research shows that active learning is the most effective way to learn.
- $ I take it a step further and assign Service Learning projects. Completing projects for not-for-profit organizations provides a platform that is manageable. Such projects allow students to help those less fortunate than themselves by providing technical assistance the organization would not otherwise get -- an important civic duty.
- $ Students must take responsibility for what happens in class. Passive learning doesn't prepare students for applications that are even a little different from the book. Real learning takes an iterative and collaborative effort. The process often begins with a lecture about concepts and methods, after which students apply the concepts in practice, and then return to the classroom to discuss what they have learned.
- $ I look for new teaching resources. For example, since textbooks often lack depth, I include supplement text books with current articles and books or write some to share experiences.
- $ I believe that not all we need to share with students happens in the classroom, so I have provided a variety of opportunities for students to learn outside of class. Students can attend on campus events, such as the Mentoring Program, the ISPC, Accounting Club, etc. and/or off campus events, such as Venture Café, users groups or conventions to meet a Networking requirement.
- $ I am committed to accommodations for disabled students to technology, as shown by two Disabled Student Union Awards. I have published my efforts in the Journal of Systems Education.
- $ Finally, I work at recruiting, encouraging and teaching about women and minorities during the class.

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ASSESSMENT/GRADING

GRADING POLICY: The following point distribution for the class

Grading Area	Points
Blogs	24 each (5 possible)
Discussion Board	10 for each posting and re-posting
Homework	10 for each assignment
ΑNetworking@ Activities	10 for each event up to 4
Milestones	100 points each (6 possible)
Project	100 points
Quizzes	100 points (3 possible)
Exam	100 points (2 possible)

SCHEDULE

Week[1]	Topic[2]	Tilley	Gause & Weinberg	IDE-O	Online Materials
1	What is wrong with IST?	1-2	entire book		x
2	Creativity				x
3	Systems Analysis Systems and Design Thinking	1		x	
4	Information Business Rules	2		x	x
5 - 6	SAD Tools	2, 5			
7-8	Meta-Methodologies and Methodologies	5,7		x	x

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[1] Allocation of time to sections of material is subject to change.   More specific information may be found at the online class schedule.

[2] Some topics will include outside speakers whose schedules must be accommodated.   This may mean that topics and the time of their coverage will need some adjustment.   A tentative schedule of these speakers will be provided; changes will be available on the Web-based schedule.

9	Project Management Groups	2,3		x
8	Questionnaires and Interviews	4		x
9	Prototyping	8	x	x
10	Cost-benefit Analyses	2		
12-13				
14		5		
15	Transnational Systems Analysis Ethics	6		

MY EXPECTATIONS:
- $ I assume you are here to learn about systems analysis in preparation for your ultimate career. To accomplish that:
- $ You must come to class prepared; you must read and think about the material before you get here.
- $ You must demonstrate critical thinking skills.
- $ You must participate in class discussions and class activities.
- $ You must participate fully in the class project. This means that you will *think about* your project, go to group meetings, participate in the data collection and analysis. Each person must accept the responsibility for the project.
- $ It is *your responsibility* to ask questions in class or office hours when you are confused.
- $ I expect you to be courteous and respectful to me and your classmates, and professional to class visitors and to your clients.
- $ I expect you to write clearly, with a development of your concept, at the collegiate level
- $ While I will not monitor your use of the computers during class, I expect you to be respectful in your use of the computer and I expect you to pay attention regardless of what you are doing with the computer.

Your success in this course is important to me. When I believe that the programs offered by Student Retention Services (SRS) will help you academically, I will send a referral via MyConnect, the campus *Academic Alert System.* The SRS offers assistance tailored to specific instructional needs. Learn about the MyConnect system in the Canvas system.

CLASSROOM COURTESY*:* I realize that I should not have to tell you these things, and I apologize to those of you for whom this is unnecessary, but in the past few years I have noticed a significant increase in bad classroom manners and inconsiderate behavior. So please adhere to the following rules. Repeated violations of these will be grounds for reducing your course grade.
- $ Adherence to the Student Conduct Code is expected.

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- **$** Adherence to the Acceptable Use of Computing Code is expected.
- **$** I commit to create a climate for learning characterized by intellectual diversity and a respect for each other and the contributions each person makes to class. I expect you to make a similar commitment.
- **$** I am committed to insuring a positive learning environment by respecting that University policy.   I expect you to make a similar commitment.   In particular, I refer you to the University=s *Collected Rules* 200.015, which says, AInformation about student views, beliefs, and political associations that fellow students acquire in the context of course discussions should be handled responsibly.   Students are encouraged to be sensitive to the potential that dissemination of information about fellow students derived from course discussions may be perceived as defamatory and/or may subject them to ridicule, harassment or reprisal from those who do not agree with the views, beliefs or political associations expressed in the course.@
- **$** Turn off (or at least silence) your phones and other electronic devices before entering class; do not talk on the phone in class.
- **$** Come to class on time. In those rare cases where being late is unavoidable, please enter the classroom quietly and take a seat as close to the door as possible. If the class period is more than half done, don=t bother to come to the class. Once in class, do not get up and leave unless it is truly an emergency.
- **$** Open beverage cans and bottles and snack bags before class starts. If you eat during class, please do so quietly. Clean up afterwards; wipe up spills and throw away trash.
- **$** Keep talking with your neighbor to a minimum. If you are confused about something in class, please ask me - that is my job and I am happy to answer questions.
- **$** When you use the computers, do so quietly.
- **$** When we have guest speakers, I expect that you will pay attention and will not be improperly using the computer or talking to neighbors.
- **$** Bring a handkerchief or tissue to class to blow your nose in case you get the sniffles.
- **$** I am not going to supervise your attention in class.   However, you are responsible for all the material covered in class -- if you do not pay attention and miss important material, I am not going to go over it again.

DROP POLICY: For the purposes of this policy, the "effective drop date" is the date which I am informed of the drop or the actual date of the drop, which ever is *later*.   Students can and may inform me by leaving me a note in my mailbox, leaving me a message (on voice mail or email) or by speaking to me in person or over the telephone.

A student may drop this class until TBA with a passing grade.   (Note the University policy states that you may drop until TBA without getting a grade; this policy is simply an extension of the University policy.)   Between TBA **and** TBA**,** a student will receive either a passing grade (excused) or a failing grade (F) depending upon his or her performance (current grade) in the course.   A student may withdraw after TBA *only with and solely with* the approval of the dean of his or her division.   If you want to withdraw after this date, go directly to your dean; do not ask for my signature -- my signature is not needed and I will not provide it.   Under **no** *circumstance* may a student drop this class after the end of the semester.

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ASSIGNMENTS:
Due Dates: Due dates are listed for each project.   In each case, the assignment is due at the end of the class period on the due date.   *Late assignments will receive a 4 points per (calendar) day (or fraction thereof) late penalty.*

- $ **BLOGS***:*   The purpose of the blog is to encourage you to reflect on your project -- both the process and the client. It is important for you to be honest in your blog -- don't write what you think I want to hear. Grading is a function of the development of your thoughts not their similarity to what I think!   For your first blog, write about your thoughts on not-for-profit organizations. In particular, you need to reflect on why not-for-profit organizations exist, what different kinds there are, and their role society. Finally, discuss any volunteer work you have done for any kind of not- for-profit organization. This assignment -- and all blog assignments -- may be done in multiple installments.   There are five blog assignments. Each Blog counts for 24 points.

- $ **DISCUSSION BOARD**:   There will be a variety of topics we need to discuss during the semester.   Since we will often not be in class at that time, we will use the discussion board to address the topic.   Most will be posted at the beginning of the semester, but some may be posted later.   This allows us to have a more interactive class.   Each Discussion Board entry is worth 10 points.   Students will need to post at least 7 items and will need to respond to at least 14 items during the semester.

- $ **HOMEWORK**: Individual exercises will be required during the semester to ensure students are comprehending the concepts in the class.   These will generally be Αhands onΘ exercises.   Many of the homework assignments will be posted at the beginning of the semester.   However, when it seems necessary, home work may be added to the list.   Each homework assignment is 10 points.

- $ **QUIZZES**: There will be quizzes throughout the semester to ensure that you are keeping up with your reading.   Each quiz will be multiple choice with both notes and books available.   Each one will be worth 100 points.

- $ **Α**N**ETWORKING**Θ **ACTIVITIES**: Learning to network, and learning to learn about new topics is an important part of any IS Professional's life. Therefore, you are going to practice that activity this semester by attending at least three external events. These might include the IS Mentoring Program, the IS Programming Club, the Career Services Activities (not including job interviews or the job fair), the Executive Leadership Institute Events, the Distinguished Lecture program, Student Night Seminars sponsored by the Institute of Internal Auditors and the Information Systems Audit and Control Associations, the local Web Developers Chapter, Saint Louis Visual Basic Users Group, the XPSTL Group, the Wireless SIG *or any other IS-related seminar by a campus based or local professional organization* (if it is not in this list, be sure to get permission before you go). Each networking event will be worth 10 points. To get credit for attendance, you must complete the required form and have it signed by some official of the organization or the event.

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    $ **PROJECT***:*   The purpose of the Analysis Project is to give students the opportunity to practice all of the skills taught in this class, and to meld the results of those activities into a coherent and professional report that describes the recommendations for systems change as well as a set of specifications for systems design. The specific project to be completed this semester will be discussed in class. Detail about the requirements of this assignment and specifications for the final report are available on the Web, and will be discussed throughout the semester. Please note that it is intended that the materials created for the progress reports will be included in the final paper.

The project (and the milestones) will be completed as the group defined by the instructor (to be announced approximately 3 weeks from beginning of the semester). While the entire group generally will receive the same grade, I reserve the right to differentially assign grades to reflect substantially different levels of work being completed by members of the group. At the date when the final project is due, each individual group member must evaluate the amount of work done by others in the group using the Team Evaluation Form.

There are six Milestones that will be completed during the semester by the project groups.   The results of those exercises with other aspects of learning as students progress will be the basis for the final project.   Each of the milestones is worth 100 points.   The final project is also worth 100 points.   The grades on these exercises will be adjusted depending on individual group members effort and contribution.

    $ **BACKGROUND EXERCISE***:* All systems analysts must "do their homework" to be in a position to understand enough about the system and organization to be able to ask the right questions and use the right jargon when you meet the client.   To ensure that all groups are ready to meet the client for the first time, each group must conduct a search of a variety of sources to learn as much as possible the system.

    $ **QUESTIONS**:   After learning all you can about the system and the environment, it is important to reflect on what we don't know.   Then provide a list of appropriate and relevant questions to pose to the client. These questions must be justified in your summary, which should address how the information will help you in completing the analysis, and why the information is not available prior to the meeting with the client.

    $ **SYSTEM DESCRIPTION***:*   Once you have collected information about and interviewed your client, it is time to refine your "current system" definition. This statement is your starting point for your analysis, and as such is a critical component to understanding how to approach the analysis. Each group must describe the system (including subsystems, the environment, and interfaces), the problem, the stakeholders and other information pertinent to understanding the system under consideration. One important question that must be answered is how you will know when you are successful in solving your client's problem. In addition, you must provide appropriate diagrams describing the system.   This assignment should include appropriate diagrams.

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$ **QUESTIONNAIRE:** One of the tools systems analysts use to determine and refine user requirements is a questionnaire.   The approach taken to the length, type of questions and usage depend on the situation and already available information.   You must develop an instrument that could be used as a questionnaire to use for collecting data for your project.   You must turn in a copy of the questionnaire to the instructor.   In addition, you must be prepared to role play with other members of the class to test your instrument.   You must use this (or a refined version of it) to query a number of users about the system needs for the final project report.

$ **PROTOTYPE***:* One of the tools systems analysts use to determine and refine user requirements is the prototype.   Prototypes vary substantially; they might be an electronic Atoy@ version of the system, electronic versions of possible screens, paper versions of possible screens or Apost-its@ on paper representing the screen.   Regardless of the format, the goal is to provide the user something tangible to which to react in order to clarify his or her specifications.

$ **COST-BENEFIT STUDY***:* It is important to show the benefits of the project are significant, i.e., that the benefits outweigh the costs of completing the project.   We will discuss more about what is included in a feasibility analysis in class, or you can check the website.

$ **EXAMS:** There will be two in-term exams.   Presentations will be given at the time scheduled for the final exam.
  Exam 1:   TBA
  Exam 2:   TBA

Make-up exams will be provided *only* for those students who have spoken with the professor *prior* to the exam *and* who have a *justifiable* reason for missing the exam.   In all other cases, the student will receive a grade of zero (0) on the exam.   Each completed assignment is worth 100 points.

DISABILITIES: Students requiring special accommodations should meet with me during office hours so that we can discuss how to meet your needs this semester. Prior to our meeting be sure you have met with someone in the campus offices that supports student with disabilities (MSC 144).   If, during the semester, you are experiencing a serious emotional trauma, please inform me of this before taking an exam; once an exam is taken the grade must be counted and no "retake" is possible.

RELIGIOUS OBSERVANCE*:* I am committed to creating an inclusive campus community that values and respects all its members, and achieves educational excellence through diversity and nondiscrimination. This includes supporting students regardless of their religious affiliation or non-affiliation. I will make a good faith effort to accommodate your religious practice or belief, unless such accommodation would create undue hardship.   Accommodations for makeup assignments, presentations, homework, quizzes, or exams should be arranged with me early in the semester and well in advance of the anticipated class absence and requested accommodation. To request an accommodation for a religious observance, submit the form to me as the semester begins and no later than two weeks prior to the religious

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observance. Submit a separate form for each observance.

Academic Integrity/Plagiarism

- You are responsible for being attentive to and observant of University policies about academic honesty as stated in the University's Campus Policies and Code of Student Conduct found in the UMSL Bulletin
- Academic dishonesty is a serious offense that may lead to probation, suspension, or dismissal from the University. One form of academic dishonesty is plagiarism – the use of an author's ideas, statements, or approaches without crediting the source. Academic dishonesty also includes such acts as cheating by using any unauthorized sources of information and providing or receiving unauthorized assistance on any form of academic work or engaging in any behavior specifically prohibited by the faculty member (e.g., copying someone else's answers on tests and quizzes). Unauthorized possession or distribution of academic materials is another type of academic misconduct. It includes the unauthorized use, selling or purchasing of examinations or other academic work, using or stealing another student's work, unauthorized entry or use of material in a computer file, and using information from or possessing exams that an instructor did not authorize for release to students. Falsification is any untruth, either verbal or written, in one's academic work. Facilitation is knowingly assisting another to commit an act of academic misconduct. **Plagiarism, cheating, and falsification are not acceptable.**
- All instances of academic dishonesty will be reported to the Office of Academic Affairs who will determine whether you will appear before the Student Conduct Committee for possible administrative sanctions such as dismissal from the university.   The instructor will make an academic judgment about the student's grade on that work in this course.   The campus process regarding academic dishonesty is described in the "Policies" section of the Academic Affairs website.
- *Follow the AMA style for your reports.*
- Plagiarism is the use of another person's words or ideas without crediting that person.
- Plagiarism and cheating will not be tolerated and may lead to failure on an assignment, in the class, and dismissal from the University, per the UMSL academic dishonesty policy.
- Students are responsible for being attentive to and observant of campus policies about academic honesty as stated in the University's Student Conduct Code.
- To avoid accusations of academic dishonesty, please submit all written work to the Turnitin System before finalizing what you submit for evaluation. Check information about The Writing Center on UMSL's website.

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- For the purposes of this class, cheating will include: plagiarism (using the writings of another without proper citation), copying of another (either current or past student's work), working with another on individually assigned work or exams, unauthorized marking on a graded paper or exam, or in any other way presenting as one's own work that which is not entirely one's own work.   It is *unacceptable* to seek the help of another (whether in the class or not) for help on an exam; this is considered academic dishonesty. Any student who is caught cheating on any assignment or exam will receive a grade of zero (0) for that assignment or exam.

Title IX Policies

In adherence to the policies of Title IX and to promote a safe and secure educational environment, it is strongly recommended statements similar to those below be added to your course syllabus:

- **Mandatory Reporting:** Under Title IX, all UMSL faculty, staff, and administrators (with limited exception) are obligated to report any incidents of sexual harassment, sexual misconduct, sexual assault, or gender discrimination to the Student Affairs office and/or other University officials. This ensures that all parties are protected from further abuses and that victim(s) are supported by trained counselors and professionals. Note: There are several offices at UMSL (e.g., Counseling Services, Health Services, Community Psychological Service, Center for Trauma Recovery, and Student Social Services) whose staff are exempt from Title IX mandated reporting, when the information is learned in the course of a confidential communication.

- **Content Advisory:** The course requires good logical skills and knowledge of materials from the pre-requisite courses. Some of the concepts require abstract thinking and ability of apply college level algebra.

Student Resources

Access, Disability and Communication

Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please contact Disability Access Services (DAS) immediately. Students must provide documentation of their disability to the office of Disability Access Services in order to receive official University services and accommodations. The staff is available to answer questions regarding accommodations or assist you in your pursuit of accommodations. Information about your disability is confidential. Once DAS reviews your medical documentation, they will provide you with the information and steps to inform me about the accommodations to which you are entitled. Your accommodations will begin as soon as we discuss your approved accommodations.

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- 144 Millennium Student Center (MSC)
- Phone: (314) 516-6554
- Email: Tara Cramer, cramert@umsl.edu
- Website: http://www.umsl.edu/services/disability/

Office of International Students and Scholar Services

If you have difficulty communicating in English with the instructor of this course, contact ISS.

- 362 Social Sciences & Business Building (SSB)
- Phone: (314) 516-5229
- Email: iss@umsl.edu
- Website: http://www.umsl.edu/~intelstu/contact.html

Student Enrichment and Achievement

SEA provides comprehensive support and intervention strategies that support your road to graduation!

- 107 Lucas Hall
- Phone: (314) 516-5300
- Email: umslsea@umsl.edu
- Website: https://www.umsl.edu/services/sea/

Office of Multicultural Student Services (MSS) and the University Tutoring Center (UTC)

MSS provides comprehensive student retention services to diverse student populations; through their tutoring center, the MSS offers comprehensive tutoring services free to students at UMSL.

- 225 Millennium Student Center (MSC)
- Phone: (314) 516-6807
- Email: multicultural@umsl.edu
- Website: https://www.umsl.edu/~mcraa/index.html

More Student Resources are on the Learning Resource Lab website.

Technical Support

Canvas

If you have problems logging into your online course, or an issue within the course site, please contact the

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Technology Support Center:
- Phone: (314) 516-6034
- Email: helpdesk@umsl.edu
- Website : http://www.umsl.edu/technology/tsc/

If you are having difficulty with a technology tool in Canvas, consider visiting the Canvas Student Guides, which has overviews of each tool and tutorials on how to use them.

If you continue to experience problems or just have questions, you can also contact the
Learning Resource Lab:
- Phone: (314) 516-6704
- Email: lrl@umsl.edu
- Website: http://www.umsl.edu/technology/lrl/

VoiceThread
- Online Contact Form: https://voicethread.com/support/contact/
- Website: https://voicethread.com/howto/

Academic Support

Math Academic Center (Math Lab)
The Math Academic Center offers free individual assistance on a walk-in basis to students needing help with any mathematics from basic math through calculus or any course involving mathematical skills.
- 222 Social Sciences and Business Building (SSB)
- Website: http://www.umsl.edu/mathcs/math-academic-center/