INLS 582_001, Systems Analysis, Fall 2014
Syllabus

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Class Meets: Tuesday and Thursday, 12:30 – 1:45, 307 Manning Hall

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Course Description
This course will introduce the basic concepts underlying systems analysis, focusing on contextual
inquiry/design and data modeling, and the application of those analysis techniques in the analysis and
design of organizational information systems.

Course Objectives
1. Develop an understanding of the role of information systems in modern organizations.
2. Become familiar with a variety of information systems analysis and problem-solving tools and
   approaches.
3. Gain practical experience with information systems analysis and design, working as part of a
   project team.
4. Start to develop the skills needed in your professional career, such as working with clients and
   learning and applying new information technologies.

Rationale and Approach

Systems Analysis is all about problem solving.
• What is the information system doing now?
• What should it be doing?
• What needs to be changed to make it do the right thing?
• How can we best implement the changes?
• How will we assess the new/revised system to see if it is working better?
These are the fundamental questions, whether you're fixing a broken system, adding new functionality to
an existing system, or designing an entirely new system. The purpose of this course is to help you gain
the knowledge, tools, and skills you need to answer these questions and design effective information
systems.

The material we cover includes the theories that help explain information systems and people's
interactions with them, tools and techniques for analysis and design, and best practices for systems
analysis projects. Readings include research articles, case studies, and documentation for specific
modeling techniques. A major part of the work for this class is analyzing an information system problem
and designing a solution for a real client. This group project provides real-life experience in information
system problem solving. Individual assignments provide additional practice with specific techniques.

Your work for this class falls into 3 categories.
1. preparation for class
2. in-class activities
3. individual and group assignments.
Preparation
The Schedule (Sakai Resources/Official Course Documents) provides an overview of each class meeting, including what to read/view before class, and when assignments are assigned and due. You are responsible for being prepared for each class meeting.

Useful Information (Sakai Resources/Official Course Documents) provides information about the textbook, other required readings, software, and other helpful information.

Preparatory materials may include:
- chapters from the textbook,
- documentation for specific models and analysis techniques,
- research papers, issue articles, and case studies
- videos and demonstrations
- slides.

You are welcome to work together to prepare for each class and discuss what you have read/viewed. As you prepare for each class, think about what you have learned.
- What interests/surprises/informs/challenges you?
- What have you experienced that supports or contradicts the material?
- What questions do you have?
- What is your response to questions I have raised?

In-class activities
- Business: operational questions, assignments, other class "infrastructure"
- Instruction: highlights of the day's topics, walk through of examples, etc.
- Exercises and discussion: opportunities for practicing analysis techniques, discussing articles, and addressing questions.

Assignments
Individual assignments provide opportunities for practicing specific skills and let you demonstrate to me what you have learned. Team assignments are the deliverables for your project.

The Assignment Overview (Sakai Resources/Official Course Documents) provides additional information about assignments, including due dates and other guidelines.

Helpful Hints
- You will learn many new terms and concepts. See the List Of Terms (Sakai Resources/Official Course Documents) for examples. Terms and concepts are useful to learn and organize the material in your own mind, and help you think and speak like a systems analyst.
- Plan ahead! Success in this course requires the same kind of project management that your team project does
- Coordinate the work schedule for this class with the schedules for your other classes, work, and other responsibilities. You are likely to have many deadlines toward the end of the semester, so it's important for you to keep up.
- Give yourself plenty of time to prepare for each class. If you are not prepared for class, you will not be able to fully participate in (and benefit from ) the in-class activities. Further, your lack of preparation will diminish your classmates' experience.

By the end of the course, I hope you will have learned the fundamentals of systems analysis and design, developed an arsenal of tools and techniques as well as the knowledge of when to use them, and produced a proposal that will solve an information problem for a real client. Information system problems are pervasive in our society: what you learn here may help you in many aspects of your future endeavors.
Course Policies

Attendance
- I will be prepared for class, and be ready to start class on time. If unforeseeable circumstances prevent this for any reason, I will try to notify you beforehand if at all possible. I expect the same of you: be prepared for class and be ready to start class on time.
- You are expected to attend all class meetings. Unexplained absences or tardiness will lower your participation grade – you cannot participate if you are not present. In addition, they are unprofessional – how would your manager and co-workers respond?
- If you know you will miss a class because of an unavoidable conflict, for example, because you will be attending a conference, you must inform me by email in advance of the class.
- If you must miss a class session unexpectedly, for example, because of sudden illness or other emergency, you must inform me by email as soon as possible.
- If you miss a class for any reason, you are responsible for learning what you missed from a classmate.

Participation
- You are expected to be an active participant in class, including full class discussions, small group discussions and exercises, and individual exercises. Similarly, you are expected to be an active participant in your project teams.
- Participation is not just about talking; listening to others’ ideas and facilitating discussions and exercises to make sure everyone has a chance to participate is also important.
- Asking a question is another form of participation – other students may be wondering the same thing.

Participation grades are based on the following rubric.
(adapted with permission from Ms. Emily Vardell)

<table>
<thead>
<tr>
<th></th>
<th>Strong</th>
<th>Needs development</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparation</strong></td>
<td>Arrives with notes, observations, and questions.</td>
<td>sometimes arrives unprepared.</td>
<td>Shows little if any indication of having prepared for class or having read the assigned materials.</td>
</tr>
<tr>
<td><strong>Listening</strong></td>
<td>Actively supports, listens, and engages.</td>
<td>Shows effort to interact but at times shows disinterest in peer contributions.</td>
<td>Limited or no interaction with peers and may exhibit disrespect.</td>
</tr>
<tr>
<td><strong>Quality of contributions</strong></td>
<td>Comments and questions are relevant and show close reading and keen insight.</td>
<td>Participates constructively but unevenly. Comments and questions are at times irrelevant or lack depth.</td>
<td>Never participates or participates only when prodded and does so perfunctorily. Shows little interest in materials or peer contributions.</td>
</tr>
<tr>
<td><strong>Frequency of participation</strong></td>
<td>Participates actively at appropriate times.</td>
<td>Participates sometimes but fails always to be attentive.</td>
<td>Rarely participates and is not generally engaged.</td>
</tr>
<tr>
<td><strong>Impact on class</strong></td>
<td>Moves discussion forward; class members benefit from student's contributions and group dynamic is enhanced.</td>
<td>Sometimes advances discussion but at other times seems merely filler. Group dynamics are sometimes better (but never worse) as a result of student participation.</td>
<td>Comments and questions fail to advance conversation. Group dynamics are impaired as a result of student's participation.</td>
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Assignments
- Assignments must be submitted by the due date/time.
- A late assignment will be penalized 5% for every day it is late. Any request for an extension must be made, preferably by email, at least 48 hours prior to the due date/time, and will be granted only in extenuating circumstances. Getting a late start on an assignment is not grounds for an extension. If an emergency arises that prevents you from submitting your assignment on time, you must contact me as soon as possible.
- You will submit your assignments through the Assignments tool in Sakai. All assignments should conform to the assignment instructions.
- Pay attention to detail, and proofread your assignments for correctness, clarity, and completeness.
- Start working on assignments well in advance of the due date. It is a good idea to give yourself time to review your work before you submit it. Do not wait until the last minute (or hour, or day) to ask questions about the assignment – I may not be available for consultation.

Academic Integrity
Chapel Hill has had a student-administered honor system and judicial system for over 100 years. Because academic honesty and the development and nurturing of trust and trustworthiness are important to all of us as individuals and as professionals, and are encouraged and promoted by the honor system, this is a most significant University tradition. You are responsible for being familiar with the UNC-CH Honor System.

- If your team is having difficulty with some aspect of your project, please come to see me. One of the educational outcomes of this class should be an increase in your effectiveness in getting advice from more experienced colleagues.
- The Honor Code, which prohibits giving or receiving unauthorized aid in the completion of assignments, is in effect in this class. The Instrument of Student Judicial Governance gives examples of actions that constitute academic dishonesty. There are some specific guidelines for this class.
  - You may give and receive assistance regarding the use of hardware and software.
  - You are welcome to work together on class preparation: discussing articles, walking through examples, or working on exercises. You may also ask your classmates for clarification of class notes.
  - All work you submit should be your own.
  - Individual homework assignments are to be done individually. You may consult the course readings and slides, your notes, and even other print or web sources. If you consult outside materials (i.e., not provided as part of this class), please include a citation for their source. (Keep in mind, however, that what you find in other sources may not be consistent with my expectations for the assignments.)
  - Team assignments are to be done as a team, with the team taking responsibility for all products. Work on the project should be distributed equitably among team members. I expect team members to discuss, consult, and even debate with each other about the project throughout the term.
- You must sign (check) the honor statement when you submit each assignment. This confirms that you and the work are in compliance with the Honor Code.

Diversity
In support of the University's diversity goals and the mission of the School of Information and Library Science, SILS embraces diversity as an ethical and societal value. We broadly define diversity to include race, gender, national origin, ethnicity, religion, social class, age, sexual orientation, and physical and learning ability. As an academic community committed to preparing our graduates to be leaders in an increasingly multicultural and global society we strive to:
- Ensure inclusive leadership, policies, and practices;
- Integrate diversity into the curriculum and research;
• Foster a mutually respectful intellectual environment in which diverse opinions are valued;  
• Recruit traditionally underrepresented groups of students, faculty, and staff; and  
• Participate in outreach to underserved groups in the State.  
The statement represents a commitment of resources to the development and maintenance of an academic environment that is open, representative, reflective, and committed to the concepts of equity and fairness.

Electronic Devices in Class  
• You are not required to bring your computer to every class. I will tell you in advance of any classes for which your laptop is required.  
• In-class activities will often involve sketching draft models or taking brief notes in a break-out group for reporting back to the class. You may use your computer or other device, or pen/pencil and paper. There will be some exercises for which you need a pen/pencil.  
• Laptops, tablets, phones, and similar devices should be used only for class purposes. Unrelated activities such as reading email, texting, web-surfing, or playing games divert your attention from the class and are distracting and discourteous to others.  
• Please mute your phone before class starts.

Communications  
The official course website is at http://www.ils.unc.edu/courses/2014_fall/inls582_001/  
The website contains the course syllabus and schedule. These, along with other important documents are also stored in the Resources/Official Course Documents section of the Sakai site.

• Announcements will be posted on Sakai, and you will receive a notice at your email address of record. It is the responsibility of each student to check the Sakai site for announcements, messages, and class materials.  
• Email is the best way to contact me. Note that I receive a large amount of email and while I try to reply to student emails with 48 hours, there are times that it may take me longer to reply. Therefore, it is important that you get started on assignments early, so there is time for me to respond to any questions you may have. I cannot guarantee that I will be able to answer last-minute questions (e.g., within 2 days of the assignment due date).  
• Office hours are Tuesday and Thursday, 2:00 – 3:00 p.m. Please stop by my office (111 Manning Hall) if you have questions or want to discuss class, assignments, etc. If office hours are not convenient for you, or you want to discuss something that will take more than a few minutes, please make an appointment with me. You can schedule an appointment by email, or by talking with me before or after class.

Sakai  
All enrolled students should have access to the UNC Sakai site for this course.

Most course materials will be stored in Sakai.  
• The course syllabus, schedule, and information about tools and other resources are be in the Resources/Official Course Documents section.  
• Materials for each topic, including slides and exercises, will be placed in the Resources/Class Materials section. Materials needed for class preparation will usually be available 1 week in advance.  
• Information about the textbook, readings, software, and other resources is provided in Useful Information (Sakai, Resources/Official Course Documents).

To receive credit for an assignment, you must submit it through the Sakai Assignments section. It is your responsibility to be sure you have access to Sakai and can submit assignments when they are due.

If for some reason you are unable to submit an assignment to Sakai, as a last resort you may email it to me along with a note about the problem you encountered. Then, as soon as you are able to, you must
submit the exact same assignment to Sakai. The email serves as a record that you tried to submit the assignment on time, but to receive credit, your assignment must be uploaded to Sakai.

Instructions for submitting assignments are included in the instructions for each assignment.

You each have a dropbox in Sakai that is accessible only to you and me. You may store your work-in-progress here. If you have a questions about an assignment, and it would be helpful for me to see your work, you may store the draft in your dropbox and refer to it in your emailed questions.

I will only look in your dropbox at your request. Do NOT submit homework assignments by putting it into your dropbox; all assignments must be submitted through the Sakai Assignment.

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**Grading Policies**

Your course grade will be based on individual assignments (40%), a team project (45%), and class and team participation (15%). See the **Assignment Overview** in Resources/Official Course Documents for details.

The following grade scale will be used AS A GUIDELINE (subject to any curve) for **graduate** students. (Definitions are from the [Office of the University Registrar](#).)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>95-100%</td>
<td>High Pass Superior work that exceeds expectations. Rarely given.</td>
</tr>
<tr>
<td>P</td>
<td>80-94.9%</td>
<td>Pass Good quality work that meets expectations. The majority of students are likely to earn this grade.</td>
</tr>
<tr>
<td>L</td>
<td>70-79.9%</td>
<td>Low Pass Work that minimally meets expectations.</td>
</tr>
<tr>
<td>F</td>
<td>0-69.9%</td>
<td>Fail Unsatisfactory work that does not meet expectations.</td>
</tr>
</tbody>
</table>

The following grade scale will be used AS A GUIDELINE (subject to any curve) for **undergraduate** students. (Definitions are from the [Office of the University Registrar](#); underlining is my own.)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
<td>Mastery of course content at the highest level of attainment that can reasonably be expected of students at a given stage of development. The A grade states clearly that the students have shown such outstanding promise in the aspect of the discipline under study that he/she may be strongly encouraged to continue.</td>
</tr>
<tr>
<td>B</td>
<td>80-89.9%</td>
<td>Strong performance demonstrating a high level of attainment for a student at a given stage of development. The B grade states that the student has shown solid promise in the aspect of the discipline under study.</td>
</tr>
<tr>
<td>C</td>
<td>70-79.9%</td>
<td>A totally acceptable performance demonstrating an adequate level of attainment for a student at a given stage of development. The C grade states that, while not yet showing unusual promise, the student may continue to study in the discipline with reasonable hope of intellectual development.</td>
</tr>
<tr>
<td>D</td>
<td>60-69.9%</td>
<td>A marginal performance in the required exercises demonstrating a minimal passing level of attainment. A student has given no evidence of prospective growth in the discipline; an accumulation of D grades should be taken to mean that the student would be well advised not to continue in the academic field.</td>
</tr>
<tr>
<td>F</td>
<td>0-59.9%</td>
<td>For whatever reason, an unacceptable performance. The F grade indicates that the student's performance in the required exercises has revealed almost no understanding of the course content. A grade of F should warrant an advisor's questioning whether the student may suitably register for further study in the discipline before remedial work is undertaken.</td>
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Schedule
INLS 582_001, Systems Analysis, Fall 2014, Dr. Stephanie W. Haas

This is a tentative schedule: topics, readings, and assignments may be revised at the instructor's discretion.

1. Tuesday 8/19/14, Introductions 1
   Introductions and course business
   Assignments:
   • Case Study 1 volunteers’ discussion points due Wednesday 8/27/14, 8:00 a.m.
   • Sign up for remaining Case Studies by Thursday 8/28/14, 12:30 p.m.

2. Thursday 8/21/14, Introductions 2
   Read before class:
   • Introductions 2 prep slides
   • Beyer & Holtzblatt, Ch. 1
   More course business, project preview
   What is an information system?

3. Tuesday 8/26/14, The world as an information system
   Read/view before class:
   • World as Information System prep slides
   • Bennett P. (2005). Design is in the details. TEDGlobal 2005 (TED talk, 14:10)
   Assignments:
   • Due: Case Study 1 volunteers' discussion points due Wednesday 8/27/14, 8:00 a.m.

4. Thursday 8/28/14, Case Study 1, Systems Development Life Cycle
   Read before class:
   • SDLC prep slides
   • Batra, D., Xia, W., VanderMeer, D. & Dutta, K. (2010). Balancing Agile and structured development approaches to successfully manage large distributed software projects: A case study from the cruise line industry. Communications of the Association for Information Systems, 27, Article 21, 379-394. (Sakai)
   Approaches to SDLC, including waterfall, contextual inquiry, Agile.
   Assignments:
   • Due: Sign up for remaining Case Studies by Thursday 8/28/14, 12:30 p.m.

5. Tuesday 9/2/14, Problem Definition
   Read before class:
   • Problem definition prep slides
   Information problems and symptoms.
Assignments:
- Assign Problem Definition, due Tuesday 9/16/14, 12:30 p.m.

6. Thursday 9/4/14 Problems, Symptoms, Risks
Read before class:
- Problem, Symptoms, Risk Prep slides.
- Beyer & Holtzblatt: Ch. 2, Gathering Customer Data.

What risks do poorly-designed systems pose? How do you cope with an ill-fitting information system?

7. Tuesday 9/9/14, Contextual Inquiry
Read/view before class:
- Contextual Inquiry prep slides
- Beyer & Holtzblatt, Ch. 3, Principles of contextual inquiry & Ch. 4, Contextual inquiry in practice.
- Contextual Inquiry: Workforce Mobility (NozPortfolio, 2010) (YouTube video, 4:05) Watch this after you have read Gellatly et al.

8. Thursday 9/11/14, Models
Read before class:
- Models prep slides

9. Tuesday 9/16/14, Project Management
Read before class:
- Project Management prep slides
- Project Management Institute Browse the website, especially “About Us” and “Certification” pages.

Assignment:
- Due: Problem definition, due today, 12:30 p.m.
- Review Problem Definitions and submit preferences by Wednesday, 9/17/14, 12:30 p.m.
- Review Candidate Problem Definitions before class on Thursday, 9/18/14.

10. Thursday 9/18/14, Team Formation
Read before class:
- Problem Definitions, available Tuesday 9/16/14 in the afternoon.
- Candidate Problem Definitions, available Wednesday 9/17/14 in the afternoon.

Assignment:
- Assign Information Gathering Plan, due Thursday, 10/2/14, 12:30 p.m.
11. Tuesday 9/23/14  Scenarios, Personas
Read before class:
- Scenario Persona prep slides
- Beyer & Holtzblatt, Ch. 5, A language of work.

12. Thursday 9/25/14, Cultural Models
Read before class:
- Cultural Model Preparation Slides
- Beyer & Holtzblatt, Ch. 6, Work models: The cultural model, pp. 107-115.

13. Tuesday 9/30/14, Artifact Models
Read before class:
- Artifact Models Prep Slides
- Beyer & Holtzblatt, Ch. 6, Work models: The artifact model, pp. 102-107.
Assignment:
- Assign Artifact Assignment, due Tuesday, 10/7/14, 12:30 p.m.

14. Thursday 10/2/14, Card Sorting, Use Cases
Read before class:
- Cart sorting prep slides
- Use Case prep slides
- [optional] Miles & Hamilton, Ch. 2, Modeling requirements: Use cases
- Pilone & Pitman, Ch. 7, Use case diagrams.
- Gottesdiener, E. (2002). Top ten ways project teams misuse use cases -- and how to correct them: Part I: Content and style issues *The Rational Edge*, June 2002. [Explorer may work better than Firefox]
- Gottesdiener, E. (2002). Top ten ways project teams misuse use cases -- and how to correct them: Part II: Eliciting and modeling use cases *The Rational Edge*, July 2002. [Explorer may work better than Firefox]
Assignment:
- Due: Information Gathering Plans due today, 12:30 p.m.
- Discuss Project Draft Models, due Thursday 10/23/14, 12:30 p.m.

15. Tuesday 10/7/14, Process/work models 1
Read before class:
- Process/Work Models Prep slides
- Miles & Hamilton, Ch. 3, Modeling System Workflows: Activity Diagrams.
- Pilone & Pitman, Ch. 9, Activity diagrams.
We'll start with activity models today; we probably won't address sequence models and flow charts until Thursday 10/9/14.
Assignment:
- Due: Artifact Assignment due today, 12:30 p.m.
16. Thursday 10/9/14, Process/work models 2
Read before class:
- Process/Work Models 2 Prep slides
- Beyer & Holtzblatt, Ch. 6, Work models: The sequence model, pp. 96-101.
Assignment:
- Case Study 2 discussion points due Monday 10/13/14, 8:00 a.m.

17. Tuesday 10/14/14 Case Study 2, Decision models
Read before class:
- Decision Models prep slides
Assignment:
- Assign Process & Decision Models assignment, due Tuesday, 10/28/14, 12:30 p.m.

Thursday 10/16/14 FALL BREAK -- NO CLASS

18. Tuesday 10/21/14, Flow (communication) model
Read before class:
- Flow Model prep slides
- Beyer & Holtzblatt, Ch. 6, Work models: The flow model, pp. 89-96

19. Thursday 10/23/14 Interpretation and catch-up day
Read before class:
- Beyer & Holtzblatt, Ch. 7, The interpretation session.
Catch up as needed, exchange progress on projects, schedule project presentations.
Assignment:
- Due: Project Draft Models due today 12:30 p.m.

20. Tuesday 10/28/14 Entity-Relationship (ER) Models
View before class:
Assignment:
- Due: Process & Decision Models assignment, due today, 12:30 p.m.
- Assign Entity-Relationship Model assignment, due Tuesday 11/11/14, 12:30 p.m.
- Case Study 3 discussion points due Wednesday 10/29/14, 8:00 a.m.

21. Thursday 10/30/14. Case Study 3, Data Dictionaries (DD), CRUD models
Read before class:
- CRUD/DD prep slides
- ADVISES paper prototype (video, 3:16) The video illustrates the paper prototyping of the preliminary design referred to in the article.
Assignment:
Schedule project team meetings
Read before class:
- Web Models prep slides
- Physical Model prep slides

23. Thursday 11/6/14 User Environment Design, Consolidation
Read before class:
- User Environment Design prep slides
- Beyer & Holtzblatt, Ch. 15, The User Environment Design.
- Beyer & Holtzblatt, Ch. 9, Creating one view of the customer. Read pp. 151-163.
- Beyer & Holtzblatt, Ch. 11, Work redesign. "Directed skimming": please read all figures, captions, and hints.

24. Tuesday 11/11/14 Risk & Change
Read before class:
- Risk and change prep slides
 assignment:
- Due: Entity-Relationship Model assignment, due today, 12:30 p.m.

25. Thursday 11/13/14, Accessibility
- Guest speaker: Tiffany Bailey, Director of Accessibility, UNC-CH.
Assignment:
- Case Study 4 discussion points due Wednesday 10/29/14, 8:00 a.m.

26. Tuesday 11/18/14, Case Study 4, Ethics
Read/listen to before class:
- Goldstein, J. To Increase Productivity, UPS Monitors Drivers’ Every Move. NPR, Broadcast 4/17/14.

27. Thursday 11/20/14, Project Presentations
Projects TBD

28. Tuesday 11/25/14, Project Presentations
Projects TBD

Thursday 11/17/14, THANKSGIVING -- NO CLASS

29. Tuesday 12/1/14, Wrap-up

Final exam scheduled Tuesday 12/9/14, 4:00 p.m.
- Due: Projects due today 4:00 p.m.