# IS 421 Systems Analysis
# Winter 2018

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| Instructor; Email: | **Hamed Qahri-Saremi, Ph.D., SAP Certified Associate**; hqahrisa@cdm.depaul.edu |
| Office; Phone: | CDM 738; 312-362-5841 |
| Office Hours (Room): | Mondays & Wednesdays: 4:00 pm – 5:30 pm (CDM 738) |
| Class Day & Time: | Wednesdays: 5:45pm– 9:00pm |
| Section Numbers: | 801 (on-campus section) & 810 (online section) |
| Class Room: | Class number for the regular classes: 14EAS 00802 (Loop Campus) |

## Course Description

- The focus of this course is on both traditional and object-oriented systems analysis, with an emphasis upon developing competency in a wide range of modeling techniques. Specific topics include: overview of the software development environment and project management; project selection, initiation, and planning; determining requirements; process modeling, including DFDs and use cases; logic modeling, including decision tables, sequence diagrams, and activity diagrams; introduction to Entity-Relationship Diagrams.
- Prerequisite: None

## Learning Outcomes

- Students will be able to explain software development life cycle and its components.
- Students will be able to explain project management in support of system analysis projects.
- Students will be able to develop process models, including data flow diagrams (DFDs) and use cases.
- Students will be able to explain logic modeling, including decision tables, sequence diagrams, and activity diagrams, and develop Entity-Relationship Diagrams (ERDs).

## Required Textbook

- Valacich, J., George, J. F., Hoffer, J. A., (2015). *Essentials of Systems Analysis and Design*, 6th Edition, ISBN: 978-0133546231, Prentice Hall/Pearson.

## Grading

- 40% Assignments (Individual Assignments; 10% each assignment)
- 10% Lab Assignment (Group Assignment)
- 15% Closed Book Exam (individual; there will be no make-up exam)
- 28% Group Project: Proposal (2%), Presentation (11%) and Report (15%) (Group Assignment)
- 7% Class Participation.
- 2% Bonus Credit for Responding to Research Surveys (Extra Credit – Optional)

*Grading Scale: 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: 60-66; F: 0-59.*

## Class Participation

On-campus students are expected to attend each class and to remain for the duration. The overall grade for participation drops one-third after any unexcused absence. Three absences for any reason, whether excused or not, may constitute failure for the course.

For online students, the class participation credit will be calculated based on their collaborations with their groups toward their group projects.

All students are accountable for material covered and assignments/announcements made in any class sessions that they miss. Students are expected to be *active learners*, coming to class prepared to participate in discussion of the topics under consideration, asking good questions and making valuable observations.

## Bonus Credit

Students who participate in research studies (as respondents) will receive 0.5 credits for every 30 minutes of studies they participate. Each student can earn **up to 2% bonus credit (extra to 100%)** by participating in different research studies as participants. This activity will benefit you and the researchers. You will learn more about research methods first-hand by participating in them and our researchers at DePaul will be able to collect data in support of their research studies that benefit our academic community.

If you are interested, you can register on this site: https://depaulurparticipant.sona-systems.com/. At the end of the quarter, I will be provided with a list of students and the number of studies they have participated to calculate the extra bonus (maximum of 2%). More instructions will be provided in class in this regard.

## Group Formation for Group Activities

Students should form groups of up to 3 students for the group activities (see Assignments and Exams Information section). Each group should elect a contact person, who is responsible for the communications with me on behalf of the group. The contact person should submit the group members' full names and DePaul emails along with their project proposal in a Microsoft Word file to the pertinent folder on D2L by the deadline indicated in the course schedule (at the end of this document).

## Assignments & Exams Information

- **Assignments (Individual Activity; Turnitin Assignments):**

  This course includes four case assignments related to Petrie Electronics. Petrie Electronics is a case study explained at the end of chapters in the textbook. For assignments, students need to answer the questions for this case study at the end of chapters 4 to 7 and separately submit them to the pertinent folder on D2L.

  These are Turnitin assignments to check for plagiarism. Assignments with higher than 20% similarity will not be graded (will receive zero credit). This excludes the similarity due to the questions.

- **Lab Assignment (Group Activity):**

  There is one hands-on lab assignment using a systems analysis case study that will be provided by the professor. The assignment will be focusing on developing process and conceptual models for an information system within a practical context. Students will be working in their groups on the assignment in the lab and should submit the results to D2L. Online students will work on the assignment virtually with their groups.

- **Closed Book Exam (Individual Activity):**

  There is a closed book exam in this course, as explained in the course schedule at the end of this course syllabus document. The exam will be administered online, via D2L, for all students.

  **For on-campus students (on-campus section):** the exam will be proctored in a computer lab located at CDM center (please note the location of the exam in the course schedule at the end of this document. This is a different location than the room for our weekly classes).

  **For online students (online section):** the exam will be administered on D2L and will be proctored using Examity online proctoring services. Examity is an online proctoring service that uses your webcam and microphone on your computer to proctor the online exam. ***Examity option is available ONLY to online students.*** Online students can register for online proctoring in Examity, at least one week prior to the exam date, using the link that will be posted to D2L. They will have several days to take the exam using Examity. Online students should note the followings for using Examity for online proctoring:

  (a) You must register for online proctoring of your exam by Examity at least one week prior to the exam date. The link will be posted to D2L at least a week before the exam date.

  (b) You must take the exam on a desktop computer or a laptop (but, NOT a tablet, NOR a smartphone).

(c) Your Internet speed must be at least 3Mbps download and 3Mbps upload to be able to take the online exam on D2L and be proctored by Examity. Determiner your Internet speed by running a test at: http://www.speedtest.net.

(d) The recommended web browsers to use for the online exams on D2L are Firefox and Chrome.

(e) You must have a working built-in or external webcam, a microphone, and working built-in or external speakers for the Examity proctor to proctor your exam online (they will communicate with you and watch you during the exam).

(f) Examity proctors will ask for your ID and a passcode that you should select when registering for online proctoring before letting you starting the exam. Ensure to have all the required information.

(g) Examity proctors will pan the room multiple times at the beginning and during the exam. Large monitors are not allowed as they are not equipped to pan the room.

(h) The Examity proctored exam cannot be taken in a public space, such as a library (unless you book a private and quiet room with a closed door in the library for the exam).

(i) Examity will record the whole exam session (voice and video), including your computer screen during the exam. All the recordings will be reviewed by a second person after the exam and will be flagged for suspicious activities. All the recordings and the flags will be shared with the professor for review and grading considerations.

(j) Internet searches and using books, notes, and any electronic devices are not allowed during the exam.

(k) Interacting with anyone other than the Examity proctor is not allowed during the exam.

- **Group Project on Systems Analysis (Group Activity; Turnitin Submissions):**

Students should find and submit a topic for their group project that meets the following criteria:

1. The project should address real-world systems (NOT a hypothetical systems) and be meaningful. I suggest that you search the Internet for business to customer (B2C) electronic/mobile commerce (online) systems that you can analyze by observing them online.
2. Each group should choose one of two options for the project: (1) selecting a current system (AS-IS system) and analyze it using system analysis techniques and propose improvements to the system (developing a TO-BE version of the system) using system analysis techniques; OR (2) comparing two similar systems (e.g., Uber and Lyft, or Walmart.com and Amazon.com) using systems analysis techniques and show their similarities and differences. Note that either way, you should essentially conduct systems analysis for two systems (either AS-IS and TO-BE version of the same system, or System 1 and System 2 that belong to the same category, such as Uber and Lyft).
3. For example, the followings are examples of types of systems that you can choose for your project:

(a) Online ticket purchase systems (airline, train, cruise, concert, or other).

(b) Online shopping systems (e.g., Amazon.com, Walmart.com, eBay.com, AliBaba.com)

(c) Online banks and financial institutions systems

(d) Online insurance purchase systems (life, medical, homeowner, and others)

(e) Rentals systems (car, video, audio, and others)

(f) Sharing economy online/mobile systems (e.g., Uber, Lyft, Airbnb).

(g) You can also use traditional (brick-and-mortar) companies if you can get the required permissions from the appropriate people (it is students' responsibility to ensure all permissions are properly received before starting the project). You can work on their offline systems if you have the access and appropriate permissions.

- *Note: In each category, you can also select more than one company and compare their processes and systems using systems analysis concepts and models you have learned in this course.*

4. Submit a proposal in a word file for your selected system by the deadline (see course schedule). The proposal should not be more than 2 pages and should include: (1) group information, (2) description of the system(s) selected for the project and why, (3) suggested areas of improvements you see in the system (for option 1) OR the differences between the two systems that you want to discuss in your project (for option 2). I will review the proposals and will give comments to consider in doing the project.
5. For the system(s) you have chosen, identify the major functions that a visitor/customer can perform on the system by navigating through it. (e.g., navigating through the systems you have selected for your project and familiarize yourself with all aspects of the systems needed for your analysis). You may have to register at the sites or the systems (or get special permissions, if it is not a publicly-available system) to get access to the more important functions of the system.
6. Document each function. Figure out the processes used in each function, the inputs used, and the outputs generated. For example, the contents of web pages that you see will give you information on these. However, web pages alone will be inadequate. You have to use your knowledge about the users, industry, company, functions to identify other data used by the systems. For this, you need to do some research to gain the knowledge needed. This is an important part of any system analysis project. Identify problems or limitations (e.g., areas of improvements) related to the systems. They could be new functions that could be useful to a potential customer or improvements over existing functions. The problems should be related to system analysis and NOT be related to aesthetics or speed of the website.
7. Develop the data flow diagrams (for at least two levels below context diagram) and entity relationship diagrams (and any other diagrams you see necessary, such as Use-Case diagrams) for the system using the concepts learned in the course. Analyze the models and diagrams and propose improvements to the systems, using the models and diagrams.
8. Prepare a presentation for presenting your project to the class using PowerPoint (details about the time-limit for presentations will be posted on D2L at least a week prior to presentations). Submit your PowerPoint slides for your presentation to D2L (see course schedule for the deadline).
    - *Note: Slides are not meant to be read but viewed. Don't read off of the slides or your script; talk to the audience and explain the topics the way you have understood them.*
    - *Online students will need to record the video of their group presentation. The video file in .mp4 format should then be submitted to the D2L folder for "Group Project Presentation" by the deadline (see course schedule). Groups need to ensure that each of the group members present part of the work and one member records the video of the session. For this, the best and easiest solution is Zoom (https://zoom.us). This is an online video conference application that allows you to easily setup an online meeting with your group members, share screens, present your work, and record the whole session. Only one member needs to record the session. Zoom will save a .mp4 file locally on the computer of the person who has recorded the session. That .mp4 file needs to be submitted to D2L folder for presentation.*
        - *Zoom is a free and popular application for this purpose. If you have problems or questions regarding how to use it, you can refer to its FAQ page: https://support.zoom.us/hc/en-us/articles/206175806-Top-Questions.*
9. Prepare a report for your project in a word document (single-spaced, not less than 6 pages, with 11-point Times New Roman font, 1 inch margin all around). Submit your report to D2L (see course schedule for the deadline).
    - *Reports will be checked for originality using Turnitin. Reports with similarity rate of more than 15% will not be accepted.*
    - *Make sure to include all models and diagrams as appropriate in your report and clearly explain the system you analyzed, the areas of improvements you identified, and the changes you are suggesting. You must have proper data and entity diagrams in support of your system and suggested improvements.*

## Submission Timeline and Deadlines (Important Note)

- All submissions in this course must be in an electronic format and should be submitted to the pertinent folder on D2L. Also, always keep a copy of your assignments for yourself in case they are not submitted correctly. **No hardcopy and/or emailed submission is accepted**.
- In order to maintain a good performance in this course, it is crucial to submit the deliverables on time. Deliverables are due on a specified date and time, as stated in the course schedule, at the end of this document, unless an extension/exception is announced.
- Late assignments will be subject to 10% penalty for each day of late submission (i.e., from one second to 24 hours late). Assignments that are more than THREE days late will NOT receive any credits.
    - This policy is strictly enforced, unless I am informed of a documented emergency at least 24 hours before the deadline (i.e., all health problems should be supported by a proper doctor note).
    - The only exception is Group Project Presentation and Report, where NO late submission will be accepted.
    - It is students' responsibility to know when the assignments are due (see the course schedule, at the end of this document).
    - The assignment folder on D2L will automatically close three (3) days after the submission deadline. Once a folder is closed, no submission will be accepted.

## Academic integrity and plagiarism

- There will be **ZERO tolerance** for any type of plagiarism in this course.
- The use of others' publication, software and/or web content (text, graphics, codes) is regarded as plagiarism without giving credit.
- When you directly quote someone's work, you must put it in quotation marks followed by its reference.
- The use of materials prepared for purposes other than this course needs the instructor's prior permission.
- Please familiarize yourself with the university's academic integrity policy: http://academicintegrity.depaul.edu.

## Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a major change occurs, it will be addressed during class and posted via Announcements in D2L.

## Online Course Evaluations

- Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students.
- The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation.
- Students will complete the course evaluation online in Campus Connect.

## Academic Policies

- All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar.
- Information on enrollment, withdrawal, grading and incompletes can be found at: http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx

## Civil Discourse

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability

to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

## Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: csd@depaul.edu.
Lewis Center 1420, 25 East Jackson Blvd.
Phone number: (312)362-8002
Fax: (312)362-6544
TTY: (773)325.7296

## Tentative Course Schedule (subject to change)

| Week | Date | Class Focus & Content | Deliverables<br>*Due at **11:59 PM (CT)***<br>*(See the Due Dates below)* | |
|---|---|---|---|---|
| 1 | 3 Jan | 1. Introduction to the Course<br>2. System Development Environment – Chapter 1<br>*Note: No class, Watch the recorded lecture* | | |
| 2 | 10 Jan | 1. System Development Environment – Chapter 1 (continue)<br>2. Sources of Software – Chapter 2 | Submit Your Group Members Information (Word File) | Due: 16 Jan |
| 3 | 17 Jan | 1. Systems Planning and Design – Chapter 4<br>2. System Requirements – Chapter 5 | | |
| 4 | 24 Jan | 1. System Requirements – Chapter 5<br>2. Process Modeling: Chapter 6 | 1. Assignment 1: Petrie Electronics Case for Chapter 4 (answer all questions in a word file)<br>2. Group Project Proposal | Due: 30 Jan |
| 5 | 31 Jan | 1. Process Modeling: Chapter 6<br>2. Appendix A (pages 369-373) | Assignment 2: Petrie Electronics Case for Chapter 5 (answer all questions in a word file) | Due: 6 Feb |
| 6 | 7 Feb | Conceptual Data Modeling – Chapter 7 | Assignment 3: Petrie Electronics Case for Chapter 6 (answer all questions in a word file) | Due: 13 Feb |
| 7 | 14 Feb | **Meet at CDM 819 (computer lab)**<br>Hands-on Lab Assignment | Assignment 4: Petrie Electronics Case for Chapter 7 (answer all questions in a word file) | Due: 20 Feb |
| 8 | 21 Feb | 1. Managing the Information Systems Project – Chapter 3<br>2. Agile Methodologies – Appendix B<br>3. Review for the Exam | Hands-on Lab Assignment (answer all questions in a word file) | Due: 27 Feb |
| 9 | 28 Feb | **Meet at CDM 819 (computer lab)**<br>Closed Book Exam from Chapters 1 to 7 and Appendices A (p. 369-373) and B. | Group Project Presentation (PowerPoint Slides) | Due: 6 Mar |
| 10 | 7 Mar | Students' Presentation of Group Projects | | |
| 11 | 14 Mar | Group Project Report (**No Class**) | Group Project Report | Due: 14 Mar |