

IS 421 Winter 2021

Systems Analysis

Section 801/810 (on-line) meets W 17:45 – 21:00 in Zoom Virtual Room (URL TBA)

Dr. Steve Rubinow

Email: srubinow@depaul.edu (see email guidelines below)

Office hours: W immediately before or after class or by appointment

Office location: Zoom

Course information can be found on D2L: <https://d2l.depaul.edu/>

SUMMARY OF THE COURSE

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.

PREREQUISITES

None.

LEARNING OUTCOMES

Students will be able to:

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

REQUIRED TEXTBOOKS

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

CONTACT INFORMATION

Instructor Contact Info/Email Guidelines:

- Email is the primary mode of off-line communication with the class
- Please make certain that your preferred email address is correctly listed on Campus Connect
- When emailing, please write the subject of your email as follows: IS 421 – *purpose of email*

ASSIGNMENTS AND GRADING

All work must be submitted either in class, or on D2L, as specified.

Only exception to the rule: If you are having trouble submitting on D2L, you may email your work. This will indicate that you completed the work on time.

Grading: Detailed instructions for all assignments will be posted on D2L.

Value	Assignment	Comments
40%	Assignments (4 assignments, 10% each)	<p>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 submit them to the pertinent folder on D2L.</p> <p>Please study “Individual Assignments Instructions” file on D2L (within Course Assignments content area) for specific details about each assignment. Each assignment is worth 10% credit (total of 40% credit for 4 assignments). All assignments are <i>Turnitin</i> submissions, which means that they are automatically checked for plagiarism.</p>
30%	Group Project (Group Assignment): <ul style="list-style-type: none"> • Group Project Proposal (2%) • Group Project Presentation (10%) • Group Project Report (18%) 	<p>GROUPS: Students will be assigned groups for the group activities. Students should use the online discussion forum created for this purpose on D2L to communicate with other students in their group. 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). Students without a group after the deadline will be randomly assigned to new or existing groups.</p> <p>Peer Evaluation Survey — To ensure all group members are assessed based on their full extent of participations in group activities, a peer evaluation survey will be sent to all group members at the end of the quarter to evaluate the contributions of every member of group. Completing the survey is mandatory for all students. Group members who, according to a majority of group members, have not fully contributed to the group activities will be penalized accordingly. Therefore, make sure you seek feedback from your group members during the quarter and ensure you meet the expectation of group.</p> <p>GROUP PROJECT ON SYSTEMS ANALYSIS (GROUP ACTIVITY): Students should find and submit a topic for their group project that meets the following criteria:</p> <ol style="list-style-type: none"> 1. The project should address real-world systems (NOT 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: <ol style="list-style-type: none"> (a) 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 (b) comparing two similar systems (e.g., Uber and Lyft, or Walmart.com and Amazon.com) using systems analysis techniques and show their similarities and

Value	Assignment	Comments
		<p>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).</p> <p>3. For example, the following are examples of types of systems that you can choose for your project:</p> <ul style="list-style-type: none"> (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. <p>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.</p> <p>4. Submit a proposal in a PDF file for your selected system by the deadline (see course schedule). The proposal should not be more than 2 pages and should include:</p> <ul style="list-style-type: none"> (a) group information (b) description of the system(s) selected for the project and why (c) (suggested areas of improvements you see in the system (for option a) OR the differences between the two systems that you want to discuss in your project (for option b). I will review the proposals and will give comments to consider in doing the project. <p>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.</p> <p>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</p>

Value	Assignment	Comments
		<p>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.</p> <p>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.</p> <p>8. Prepare a presentation video of your topic, upload it to a cloud service (e.g., YouTube, Vimeo.com), and submit its link to the discussion forum and your PowerPoint slides to the submission folder on D2L (more details about the time of presentation will be announced via D2L; see course schedule for the deadline).</p> <p>Note: Slides are not meant to be read but viewed. Don't read out of the slides or your script; talk to the audience and explain the topics the way you have understood them. Make sure to include references properly. Use quotations to cite someone's verbatim words.</p> <p>Online students will need to record their group presentation and submit the link to D2L 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 solutions are Panopto (https://depaul.hosted.panopto.com), which is accessible via D2L and Zoom (https://depaul.zoom.us).</p> <p>Ensure you provide clear details about the systems being analyzed in the project, along with pertinent DFDs and ERDs. More details about the time-limit for presentations will be posted on D2L at least a week prior to presentations.</p> <p>9. Prepare a final report for your project in a word document (double-space, approximately 20 pages (including everything except the diagrams and Figures), with 11-point Times New Roman font, 1-inch margin all around). Submit your report to D2L (see course schedule for the deadline). 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.</p>

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15%	Closed Book Exam (there will be no make-up exam)	There is one closed book exam in this course (chapters 1, 2, 3, 4, 5, 6 and 7) as explained in the course schedule. The exams will be administered online, via D2L. Note the date and time for the exams in the course schedule.
10%	e-Lab Assignment (One Group Assignment)	There is one hands-on lab assignment using a systems analysis case study that will be provided by the instructor on D2L. 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 virtually and should submit the results to D2L.
5%	Class Participation	<p>The class participation credit will be calculated based on the participation in group assignment and project and attendance in class sessions (depending on the section that the student is registered in). Students who are registered in 801 section of the course are required to attend all live Zoom sessions. However, attendance in live Zoom for students who are registered in 810 section of the course is optional (they must watch the recorded video of the session if they decide not to attend the live session). All students are accountable for material covered and assignments/announcements made in any class sessions that they miss.</p> <p>AND</p> <p>Virtual in-class work and professionalism:</p> <ul style="list-style-type: none"> • Do the reading/viewing before class. Please be prepared to engage in meaningful and respectful class discussion. The entire class will benefit greatly if all voices are heard. • Handle in-class assignments professionally and respectfully. • Do not use electronic devices in-class (see policy below). • Arrive on time and stay in the classroom until the class is over. • Group work and group evaluations. <p>Students are expected to be active learners. Students are expected to attend each class and to remain for the duration. The overall grade for participation drops one-third after any absence. Three absences for any reason, whether excused or not, may constitute failure for the course.</p>

TENTATIVE COURSE SCHEDULE

Week	Date	Class Focus & Content	Deliverables	Due at 11:59 PM (CT) (See the Due Dates below)
1	6 Jan	<ul style="list-style-type: none"> Introduction to the Course System Development Environment – Chapter 1 		
2	13 Jan	<ul style="list-style-type: none"> Sources of Software – Chapter 2 	<ul style="list-style-type: none"> Submit Your Group Members Information (PDF File) 	17 Jan
3	20 Jan	<ul style="list-style-type: none"> Systems Planning and Design – Chapter 4 System Requirements – Chapter 5 	<ul style="list-style-type: none"> Assignment 1: Petrie Electronics Case for Chapter 4 (answer all questions in a PDF file) 	24 Jan
4	27 Jan	<ul style="list-style-type: none"> System Requirements – Chapter 5 Agile Methodologies – Appendix B Process Modeling: Chapter 6 (Part A) 	<ul style="list-style-type: none"> Group Project Proposal Assignment 2: Petrie Electronics Case for Chapter 5 (answer all questions in a PDF file) 	31 Jan
5	3 Feb	<ul style="list-style-type: none"> Process Modeling: Chapter 6 (Part B) Appendix A (pages 369-373) 	<ul style="list-style-type: none"> Assignment 3: Petrie Electronics Case for Chapter 6 (answer all questions in a PDF file) 	7 Feb
6	10 Feb	<ul style="list-style-type: none"> Conceptual Data Modeling – Chapter 7 	<ul style="list-style-type: none"> Assignment 4: Petrie Electronics Case for Chapter 7 (answer all questions in a PDF file) 	14 Feb
7	17 Feb	<ul style="list-style-type: none"> Hands-on Lab Assignment (students will work with their groups virtually) 	<ul style="list-style-type: none"> Hands-on Lab Assignment (answer all questions in a PDF file) 	28 Feb
8	24 Feb	<ul style="list-style-type: none"> Managing the Information Systems Project – Chapter 3 		
9	3 Mar	<ul style="list-style-type: none"> Closed Book Online Exam from Chapters 1 to 7 and Appendices A (p. 369-373) and B. (No Class) 	<ul style="list-style-type: none"> Group Project Video Presentation Link 	7 Mar
10	10 Mar	<ul style="list-style-type: none"> Display and Discussion of Students' Presentation of Group Projects (submit the links to your presentation videos) 		
11	17 Mar	<ul style="list-style-type: none"> Group Project Report (No Class) 	<ul style="list-style-type: none"> Group Project Report 	14 Mar

LATE WORK POLICY

- In order to maintain 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, unless an extension/exception is announced.
- Late assignments will be subject to a 10% penalty for each day of late submission (i.e., from one second to 24 hours late). Assignments that are more than three (3) days late will not receive any credit; no work will be accepted after the last day our class meets.
 - This policy is strictly enforced, unless informed of a documented emergency at least 24 hours before the deadline (i.e., all health problems should be supported by a proper doctor's note).

- The only exception is the Hands-On Lab Assignments, where NO late submission will be accepted.
- It is students' responsibility to know when the assignments are due (see the course schedule)
- The assignment submission folder on D2L will automatically close three (3) days after the submission deadline. Once a folder is closed, no submission will be accepted.

GRADING SCALE

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

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.

RESPECT FOR DIVERSITY AND INCLUSION AT DePAUL UNIVERSITY AS ALIGNED WITH OUR VINCENTIAN VALUES

At DePaul, our mission calls us to explore “what must be done” in order to respect the inherent dignity and identity of each human person. We value diversity because it is part of our history, our traditions and our future. We see diversity as an asset and a strength that adds to the richness of classroom learning. In my course, I strive to include diverse authors, perspectives and teaching pedagogies. I also encourage open dialogue and spaces for students to express their unique identities and perspectives. I am open to having difficult conversations and I will strive to create an inclusive classroom that values all perspectives. If at any time, the classroom experience does not live up to this expectation, please feel free to contact me via email or during office hours.

ELECTRONICS/BEHAVIOR POLICY IN THE CLASSROOM

- Out of respect for others in the class, please remember to turn off all electronic devices (except computer for class) during class. Failing to follow this policy results in penalties toward class participation credit.
- The class is discussion based. Thus, students are expected to prepare for class, arrive on time and remain in the classroom until the class is over, attend every class to progress satisfactorily towards course objectives, and behave in a respectful manner. 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.
- Failure to comply will affect your class participation grade.

RELIGIOUS OBSERVATIONS

Accommodations will be made to allow students to fully express their faith. Please provide notice in advance by email if you will be absent, or need extensions on assignments, due to religious observations.

SCHOOL ACTIVITIES

Every effort to accommodate student participation in school activities, such as athletic competitions, will be made. Please provide notice in advance by email if you will be absent, or need extensions on assignments, due to school activities.

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 collaborate with the Dean of Students Office to assist in managing such issues.

RESOURCES FOR STUDENTS WITH DISABILITIES

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately, during office hours, 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: Student Center, LPC, Suite #370 Phone number: (773)325.1677; Fax: (773)325.3720; TTY: (773)325.7296.

ACADEMIC POLICIES/ABSENCES

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:

<https://www.cdm.depaul.edu/Current%20Students/Pages/Enrollment-Policies.aspx>

In the case of illness, or other excused absences, a student may contact the Dean of Students to request a formally approved absence. Upon receipt of documentation, the dean's office will notify all instructors of the student that an approved absence has occurred. The notification will maintain student privacy by not including the reasons for the absence. Contact information may be found at:

<http://studentaffairs.depaul.edu/dos/contactus.html>

UNIVERSITY POLICIES

Incomplete Grades

An incomplete grade is given only for an exceptional reason such as a death in the family, a serious illness, etc. Any such reason must be documented. Any incomplete request must be made at least two weeks before the final and approved by the Dean of the College of Computing and Digital Media. Any consequences resulting from a poor grade for the course will not be considered as valid reasons for such a request.

Academic Integrity Policy

This course will be subject to the faculty council rules on the [Academic Integrity Policy web site](#).

Plagiarism

The university and school policy on plagiarism can be summarized as follows: Students in this course, as well as all other courses in which independent research or writing play a vital part in the course requirements should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work a report, examination paper, computer file, lab report, or other assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

Posting work on online sites

All students are expected to abide by the University's Academic Integrity Policy which prohibits cheating and other misconduct in student coursework. Publicly sharing or posting online any prior or current materials from this course (including exam questions or answers), is considered to be providing unauthorized assistance prohibited by the policy. Both students who share/post and students who access or use such materials are considered to be cheating under the Policy and will be subject to sanctions for violations of Academic Integrity.

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. They are a requirement of the course and are key to providing you with the highest quality of teaching. 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 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 complete the evaluation online in Campus Connect.

Students with Disabilities

Students seeking disability-related accommodations are required to register with DePaul's Center for Students with Disabilities (CSD) enabling them to access accommodations and support services to assist with their success. There are two office locations:

- Loop Campus (312) 362-8002
- Lincoln Park Campus (773) 325-1677
- Email: csd@depaul.edu

Students who register with the Center for Students with Disabilities are also invited to contact Dr. Gregory Moorhead, Director of the Center, privately to discuss how he may assist in facilitating the accommodations to be used in a course. This is best done early in the term. The conversation will remain confidential to the extent possible. Please see <https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx> for Services and Contact Information.

Online Exam Accommodations for Spring Quarter

While CSD staff will work remotely from home, the CSD campus office locations will be closed. This means that when students have been approved for extended time for their exams, instructors will need to adjust the amount of time allotted for the student. Please contact your instructor to verify the extra

time allotted for your exams. If students have additional or other exam accommodations and you are not certain how to proceed, please contact the CSD directly.

MAY BE REQUIRED FOR ONLINE EXAMS: RESPONDUS MONITOR (RESPONDUS LOCKDOWN BROWSER AND A WEBCAM)

This course may require the use of LockDown Browser and a webcam for online exams. The webcam can be built into your computer or can be the type that plugs in with a USB cable. Watch this short video (<https://web.respondus.com/lockdownbrowser-student-video/>) to get a basic understanding of LockDown Browser and the webcam feature. A student Quick Start Guide (<https://web.respondus.com/wp-content/uploads/2019/08/RLDB-Quick-Start-Guide-D2L-Student.pdf>) is also available.

The privacy policies of both LockDown Browser and Monitor can be found at the links below:

Monitor: <https://web.respondus.com/privacy/privacy-additional-monitor/>

LockDown: <https://web.respondus.com/privacy/privacy-additional-lockdown-browser/>

If you have not downloaded and installed the LockDown Browser, you will be prompted to do so when you take a locked quiz.

Please take the Respondus Monitor Practice Exam in your D2L course to download the LockDown Browser and ensure that the required technology works before taking your midterm and/or final exams.

To ensure LockDown Browser and the webcam are set up properly, do the following:

- Start **LockDown Browser**, log into <https://D2L.depaul.edu> and select this course.
- Locate and select the **Help Center** button on the **LockDown Browser toolbar**.
- Run the **Webcam Check** and, if necessary, resolve any issues.
- Run the **System & Network Check**. If a problem is indicated, see if a solution is provided in the **Knowledge Base**. Troubleshooting information can also be sent to our help desk (<https://helpdesk.depaul.edu>).
- Exit the **Help Center** and locate the **Respondus Monitor Practice Exam** in **Quizzes**.
- Upon completing and submitting the practice quiz, exit **LockDown Browser**.

When taking an online exam that requires LockDown Browser and a webcam, remember the following guidelines:

- Ensure you're in a location where you won't be interrupted
- Turn off all other devices (e.g. tablets, phones, second computers) and place them outside of your reach
- Clear your desk of all external materials not permitted — books, papers, other devices
- Before starting the test, know how much time is available for it, and that you've allotted sufficient time to complete it
- Remain at your computer for the duration of the test
- If the computer or networking environment is different than what was used previously with the Webcam Check and System & Network Check in LockDown Browser, run the checks again prior to starting the test
- To produce a good webcam video, do the following:
 - Avoid wearing baseball caps or hats with brims
 - Ensure your computer or tablet is on a firm surface (a desk or table). Do NOT have the computer on your lap, a bed, or other surface where the device (or you) are likely to move
 - If using a built-in webcam, avoid tilting the screen after the webcam setup is complete
 - Take the exam in a well-lit room and avoid back lighting, such as sitting with your back to a window or lamp

Remember that LockDown Browser will prevent you from accessing other websites or applications unless specifically allowed by your instructor within the exam environment.