IS 310: Systems Analysis and Design
Course Syllabus

	Contact Info	
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Office Hours in SSS 411 (my office)   M/W/F: 10 – 11 a.m.   T/R: 8:30 – 9:30 a.m.
OR by appointment in SSS 411 whenever you see an opening on my Outlook calendar. **Note**: you can always check to see when I'm available by using the "Scheduling Assistant" in Outlook / Webmail. Here are the directions for using Scheduling Assistant to request a meeting (use Internet Explorer for best results): https://www.uwec.edu/kb/article/email-schedule-a-meeting-with-outlook/. You can also schedule a Skype meeting before 7:30 p.m.

General Course Information

Meeting Time and Place   **Course Prerequisite**
IS.310.001: M/W/F from 9 - 9:50 a.m. in CENT 1917   IS 240

Course Description
Introduces theory and practice of systems analysis and design. Topics include determining business requirements, documenting organizational processes, analyzing information flows, and reengineering/designing information systems. Team project required.

Course Schedule is located at the end of the Syllabus

Final Exam
The final exam for this course is an applied exam. You will decompose epics into stories, elaborate the stories with acceptance criteria, specify tasks required to implement the stories, and estimate the team velocity.

Required Texts
We will be using the Agile Extension to the BABOK® Guide. It is published through IIBA. Next-to-recent versions can be located online and will be sufficient for our purposes.

Location of Course Materials
Course materials can be accessed primarily through Canvas.

Hardware/Software Requirements
This course requires every student to bring a laptop computer to class. A description of the College of Business minimum required laptop configuration can be found at https://www.uwec.edu/academics/college-business/laptop-requirement/. Bring and use your own laptop.

We will be using different applications within the Office suite. You can download free software provided by UWEC's Learning and Technology Services (LTS). You will receive an email after the second week of class containing a username and password for you to enter a site and download the software. Watch for the email!

Alternatively, you can use UWEC's Virtual Lab to connect remotely to any university lab. Download and install the software from https://www.uwec.edu/kb/article/software-lab-anywhere-virtual-lab/. Caution: applications tend to run much slower when running through the virtual lab.

IS 310 Learning Goals and Objectives

The aim of this course is to provide you with an opportunity to learn the basic *knowledge* (knowing) and *skills* (doing) to *design* a computer information system. The course will focus on the front-end of the system development life cycle (SDLC), by examining in detail some of the techniques, methods, tools, procedures, and methodologies employed by systems analysts in the analysis and design of organizational information systems. A major goal is for you to develop the needed communication and analytical skills to solicit, identify, analyze and refine loosely structured user requirements to produce a meaningful system design specification. We will be using an agile mindset and a Scrum framework.

IS 310 Student Learning Outcomes
After completing this course, you will be able to…
- Explain general system theory concepts in a general problem-solving context.
- Apply general system theory concepts in a general problem-solving context.
- Write business documents that contain appropriate content, are organized effectively, demonstrate professionalism, and follow conventions for standard business English. (Aligned with COB and IS Communication learning goals.)
- Collaborate in and lead teams in diverse environments. (Aligned with COB and IS Teamwork learning goals.)
- Apply appropriate Information Systems tools and techniques to create solutions to information systems problems. (Aligned with IS Technical learning goal.)
- Create a third-normal form entity relationship diagram that correctly implements relational database design rules.
- Decompose epics into stories, elaborate the stories with acceptance criteria, specify tasks required to implement the stories, and estimate the team velocity.

Instructional Methods and Activities

The format for the majority of this course is likely to be different from other courses you have taken. You will be expected to read the required readings, review *PowerPoint* presentations—including listening to the audio!—and complete a variety of learning activities **_prior to class_** so that you can engage in individual and group activities when you come to class. Given the accepted norm of 2-3 hours out of class for each credit hour of a class, you will want to schedule 6-9 hours per week outside of class on readings and individual learning activities, moving forward at your own pace, before contributing to the group activities in class. Class time will be spent on discussing and then applying information systems concepts and skills to typical and unique situations. This format will allow you to receive just-in-time feedback as you practice applying newly learned skills to different situations—both individually and within your group. The information that is applied during class activities will be directly related to the exam problems you will have to solve (via modeling), which are directly related to what you will be doing in industry, as well as to your end-of-semester design document. Therefore, your preparation for class and active participation in class are essential to your success. Additionally, part of your project grade is determined by how well your peers perceived your in-class contributions. **Bottom line:** come to class prepared!

This course is designed to provide you with a meaningful learning environment and to empower you to become an active participant in the learning process. To this end, you will be expected to reflect on and monitor both the processes and results of your learning and adjust your learning strategy as necessary to ensure success. My role as your instructor will be intentionally decentralized and made explicitly more multifaceted (as a model, facilitator, coach and referee). I will be available, both during and outside class hours, to assist you in better understanding what you have read and practiced individually.

Assignments

Individual Pre-class Assignments. You are to read through *and listen to* the audio on the instructional *PowerPoint* slides *before* completing your pre-class assignments. Many slides contain audio explanations to guide you. Consult the course schedule to see which pre-class assignment is due before each class. All of the assigned pre-class assignments will be collected via Canvas assignments. Each pre-class assignment is graded on a scale of 2 (best effort), 1 (minimal effort), or 0 (no submission). That is, you get credit for applying your best effort—even if you don't get the assignment right. The pre-class assignments are worth 10% of your overall grade (see the grading table below.)

On most class days, you will bring up your individual work in quad view on your pod's screen. Your group will compare the different, individual approaches you each took to completing the pre-class assignment. You will then select one person's submission for the group to flesh out for possible display to the full class. I'll display 3-4 that illustrate different approaches and/or typical errors. I will also be moving among the groups to answer questions and challenge your approach to solving the problems.

Individual Homework Assignments. The individual homework assignments help you prepare for both the exams and the group project. The intent is to provide you with two "practice" opportunities (the pre-class and homework assignments) before you apply your learning to either an exam or the group project.

Collaborative Group Project

You will work collaboratively in an agile team environment (usually of four to five students) to complete iterative versions of designs for an information system requested by a community client. The final iteration must include appropriate relationships to previous iterations. You will work on your client project in "sprints," each of which must produce incremental value added to the previous sprint.

You will want to compare your work against the corresponding grading rubrics before you submit anything. I will upload to your Canvas assignment both the grading rubric and any commented files. For your feedback, look for the **bolded** words/phrases on the grading rubric and any comments on your submitted files.

Note: I use "concept grading" when grading your assignments. That is, I mark and grade two errors for each concept, then I stop checking for that type of error. You are responsible for learning from those two errors so that you don't make the same errors on the exams or future iterations of your client project. Unmarked errors on one iteration could be marked and graded on future iterations. Additionally, I might find errors on a later submission that I didn't see on a previous version. Bottom line: follow the rubric to increase quality of submission.

Note: team participation is a critical component of your success. Your individual grade on the team project will be influenced (either positively or negatively) via peer evaluation of your efforts *both inside and outside the class*. You will want to complete your pre-class assignments and contribute meaningfully to class activities as well as out-of-class team work on the project. Although "ATTENDANCE" is not a formal part of your grade, attendance factors into the "in-class participation" on which your peers will evaluate you.

Note: a scrum team is responsible for self-organizing their own work and ensuring that everybody in the team is supported sufficiently to contribute meaningfully. Individual, siloed work will result in a poor grade for the team.

Late-assignment Policy

All assigned work is required to be submitted at the specified time, unless previously arranged with the instructor. No late submissions are accepted without *prior* permission from the Instructor. You are responsible for managing your own time. *Just as in business, you are expected to plan ahead.* Plan your time well, using the full-course schedule provided to you on Day 1 of this class. If you need to miss a class for any reason, please take the initiative to obtain from a classmate any notes, handouts, assignment descriptions or other materials related to that class period.

Exams

The exams demonstrate very clearly your <u>*individual*</u> mastery of the concepts and skills learned in this class as well as your critical thinking skills. Your exam scores demonstrate your individual IS knowledge, analytical and applications-based skill abilities. Our recruiters are looking for excellence in these areas, so demonstrate your excellence. You will have two major exams: a relational database modeling exam (the week before finals) and a sprint-planning exam (during finals). Conceptual information is assessed via Canvas quizzes.

Grading Scale

	Final grades will be assigned based on the following 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	63% - 66%			
			B-	80% - 82%		C-	70% - 72%		D-	60% - 62%			

Grade Item	Point	Overall Weight
Pre-class assignments	**2 points each**	*10*
	lowest 2 dropped	
Quizzes	Variable points/quiz	*10*
Exams		*35*
Data Modeling Exam	Tbd *(40% of Exams)*	
Sprint Planning Exam	Tbd *(60% of Exams)*	
Assignments		*47*
Systems & Me	15	
Bus Process & Supporting Info Systems	15	
User Personas	20	
Sprint 1	64	
Sprint 2	69	
Sprint 3	74	
Total		**100***
In-class extra-credit opportunities	Distributed equally	**+2% to overall grade**
	(Not to exceed 100% for the course)	

* Canvas requires the 2% extra-credit be added to a graded item even though Canvas will apply extra-credit points earned to the overall grade. Students traditionally have higher scores on the pre-class assignments, so the students before you chose to put the 2% there.

University Policies

Diverse Learners: Individual Differences, Social Group Identities, and Campus Support

We value the diversity of learners within this class. We desire to use approaches that support success among all types of learners. We believe that each of you has a meaningful contribution to make in your small group and large group interactions. While you may sometimes feel like you are a different type of learner and thus have less to contribute to discussions, we want to emphasize that is the reason why your contributions are so important. Therefore, we encourage you to share your way of thinking about concepts within small and large group discussions, as they may be the key to supporting other diverse learners. If you are willing to let that happen, all students of diverse learning types will benefit.

Diverse perspectives could be influenced by English language proficiency, parental or other caregiving responsibilities, cultural and/or gender identities, veteran status, immigration status, mental health needs, or other factors. Value each other's perspectives. Encourage everyone in your team to speak up and contribute. Doing so generally results in a higher quality final project. You will also prepare yourself better for working in a diverse workplace. All students are encouraged to contact the instructor about any individual needs and social group identities (such as indicated above) that may be relevant to the quality of their class experience. As an instructor, I am committed to helping all students connect with campus support and to maintaining a supportive class environment for all.

Accommodation for Students with Disabilities

Any student who has a documented disability and requires classroom accommodations may schedule an appointment with the instructor. Please bring your current VISA (Verification of Individual Services and Accommodations) to your appointment. To maintain the confidentiality of your request, please do not approach the instructor before or after class to discuss your accommodation needs. For additional information, please contact the Services for Students with Disabilities (SSD) office at 715-836-5800 or at Centennial Hall 2106 or visit the website at www.uwec.edu/ssd.

Ethical Conduct

To pass this course, you are to behave in accordance with defined norms of professional ethics as defined by the Blugold Code (https://www.uwec.edu/DOS/upload/Blugold-Student-Conduct-Code-2016.pdf) and the College of Business student code of conduct (http://www.uwec.edu/academics/college-business/about/mission-vision-goals/). In part, these actions include submitting assignments and arriving to class on time; doing your own work on assignments, reports, quizzes, and tests; attending all class sessions; dressing appropriately; behaving collegially; and obeying the law. Misconduct information is available on the Dean of Students webpage at https://www.uwec.edu/kb/article/blugold-student-conduct-code/ . It is expected that you will continue to maintain the same level of ethical standard and professionalism after you complete this course.

What constitutes plagiarism?

While you may discuss the assignment questions with your classmates, the final assignment solutions must be your own work. This means you must be able to demonstrate that you understand the questions and give an explanation why you have answered the questions the way you did. The assessment work you submitted must truly represent your **own work**. It cannot be a copy, in whole or in part, of another person's work, without full acknowledgement. This means a team cannot work together and produce a single solution file and then COPY the same file several times to submit it as each individual's work. Every separate submission MUST be created from scratch by the person making the submission.

Plagiarism is strictly prohibited. Because it is difficult to distinguish between them, both the copier and the copyee will get zero points. Therefore, you should be very careful with your assignment solutions. Do not carelessly leave them around unattended. If you are not sure whether what you did violates the plagiarism rules,

check with the instructor first, because the penalty for plagiarizing can be very severe, including the consequence of academic misconduct at the University level.

Authorized Absences
The University policy regarding authorized absences is located at https://www.uwec.edu/kb/article/class-attendance-and-authorized-absence-policies/.

Please note that *it is not the practice of the Dean of Students Office to document short-term illness, medical reasons, or personal reasons that have caused a student to miss class for less than three days.* If the student is absent fewer than three days, it is their responsibility to contact their instructors personally, or leave a message with the academic department associate. The Dean of Students Office will notify instructors when the student is absent for fewer than three days if the reason for the absence is exceptional, such as family or personal emergency or a death in the family.

Testing Accommodations for whom English is not the Primary Language
If English is not your primary language, you may request additional test time. If you are an international student, use the link to the eform found here. If you are a permanent resident/citizen, please use the form link on this page.

Week	Date	Day	Content/Activity	Due
1	9/4	W	Figure out how the class "works"; start on the "systems" lesson	Team Role
1	9/6	F	Describe Systems Around You * Start identifying systems around you; be able to describe systems via system concepts and characteristics	
2	9/9	M	Identify Business Processes; Differentiate between Influence and Causality * Finish defining systems via their characteristics; identify system interdependencies; generate a list of business processes and supporting systems. * Transition from identifying systems to identifying influences on systems; Identify different business processes and their supporting systems; differentiate between influence and causality. * Meet your team	
2	9/11	W	Identify Business Processes and Supporting Information Systems illustrate system IPO(F) and relationships; Identify typical systems, relationships, IPO(F)	Systems Perspectives and Me Assignment
2	9/13	F	Create a Workflow Diagram Describe business systems by their workflows; Practice creating a workflow diagram	
3	9/16	M	Explore/describe different systems development life cycle (SDLC) methodologies	
3	9/18	W	SDLC online discussion/critique (cont.)	Team Agreement
3	9/20	F	Introduction to the Agile Mindset and the Scrum Framework	

Week	Date	Day	Content/Activity	Due
4	9/23	M	Practice Sprint 1: groom the Practice product backlog; start to decompose epics to stories	Business Processes and Supporting Information Systems
4	9/25	W	Practice Sprint 1: Sprint Planning: elaborate stories: SMART and INVEST; define tasks, acceptance criteria, "done"; estimate points	
4	9/27	F	Define Personas: conducting a user analysis; practice empathic listening	
5	9/30	M	Sprint 0: Introduce client project and Product Owner; discuss product backlog; quarterly and sprint planning	
5	10/2	W	Sprint 1: start to groom the backlog, define stories and tasks, define acceptance criteria and "done"; estimate points;	
5	10/4	F	*Liberty Mutual Guest Presentation: Agile, Scrum, and UX*	
6	10/7	M	Sprint 1: continue to groom the backlog, define stories, estimate points; define tasks, acceptance criteria, "done"; define sprint backlog and sprint goal; assign/assume tasks	Client User Personas
6	10/9	W	Spike: Learn about data flow diagrams (DFD 1)	
6	10/11	F	Spike: Learn how to define business rules for an entity relationship diagram (ERD 1)	Sprint 1 Points Estimation
7	10/14	M	Spike: Learn how to create an entity relationship diagram (ERD) (2)	
7	10/16	W	Sprint 1: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
7	*10/18*	F	Sprint 1: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
8	10/21	M	Sprint 1: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
8	10/23	W	Sprint 1-2: Complete sprint reflective; add one high-priority process improvement to the next sprint backlog; start to groom the product backlog.	**Sprint 1 and Peer Eval 1 Due**
8	10/25	F	Sprint 2: continue to groom the backlog, define stories and tasks, estimate points; define acceptance criteria and "done"	
9	10/28	M	Spike: Learn about data flow diagrams (DFD 2)	Sprint 2 Points Estimation
9	10/30	W	Spike: Learn about data flow diagrams (DFD 3)	
9	11/1	F	Spike: Learn how to create an entity relationship diagram (ERD) (3)	
10	11/4	M	Spike: Learn how to create an entity relationship diagram (ERD) (4)	
10	11/6	W	Sprint 2: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
10	11/8	F	Sprint 2: Complete assigned/assumed tasks, including appropriate diagrams/mockups	

Week	Date	Day	Content/Activity	Due
11	*11/11*	M	Sprint 2: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
11	*11/13*	W	Sprint 2: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
11	11/15	F	Sprint 2-3: Complete sprint reflective; add one high-priority process improvement to the next sprint backlog; start to groom the product backlog.	**Sprint 2 and Peer Eval 2 Due**
12	11/18	M	Sprint 3: continue to groom the backlog, define stories and tasks, estimate points; define acceptance criteria and "done"; define sprint backlog and sprint goal; assign/assume tasks	
12	11/20	W	Spike: Learn about data flow diagrams (DFD 4)	Sprint 3 Points Estimation
12	11/22	F	Spike: Learn how to create an entity relationship diagram (ERD) (5)	
13	11/25	M	Spike: Learn about normalization	
13	11/27 11/29	W F	Happy Thanksgiving!	
14	12/2	M	Sprint 3: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
14	12/4	W	Sprint 3: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
14	12/6	F	Sprint 3: Complete assigned/assumed tasks, including appropriate diagrams/mockups	
15	12/9	M	Sprint 3: Complete sprint review and sprint reflective; start on the scenarios for the data modeling exam practice	**Sprint 3 and Peer Eval 3 Due**
15	12/11	W	Walk through a practice data modeling exam with the instructor using a think-aloud protocol	
15	12/13	F	**Data Modeling (ERD) Exam**	**Data Modeling (ERD) Exam**
16	12/16	M	**Sprint Planning Exam (Final) in Schneider 204 with desktop computers**	**Sprint Planning Exam (Final)**