



INFO 3307/5307

Systems Analysis & Design

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URL: <http://homepages.cob.isu.edu/parkerkr/courses/INFO3307/>

Prerequisite or co-requisite:

*For Informatics and CS majors:
INFO/CS 1181*

*For non-computing majors:
INFO 3303, junior status*

Textbook:

*Systems Analysis and Design: An Object-Oriented Approach with UML, 5th Edition
Dennis, Wixom, Tegarden (recommended)
ISBN-13 978-1-118-80467-4*

This course will use newer technology, so in order to do assignments at home you must have a computer capable of running Windows 10.

For class times, office hours, and textbooks, please see the online syllabus at the URL above.

Course Description

Systems analysis and design provides a general understanding of the systems development life cycle. Students will develop the analytical skills required to thoroughly understand a client's needs and formulate the optimal solution. Projects will require the student to use process modeling techniques such as data flow diagrams and use cases to assist in the analysis and design process.

The analysis and design of web-based systems will also be considered.

Topic List

- Developing an Information System
 - Process Models
- Planning Phase
 - Determining Feasibility
 - Requirements Determination
- Process-Oriented Paradigm
 - Analysis Phase
 - System Diagrams
 - Systems Proposal
 - Structured Design
 - Process Specifications
 - User Interface Design
 - System Implementation
- Object-Oriented Paradigm
 - OO Design Guidelines
 - Unified Process
 - Unified Modeling Language (UML)
 - Use cases, activity diagrams, class diagrams
 - sequence diagrams, communication diagrams, state diagrams, etc.
- Web Application Design and Development
 - Frameworks and Design Patterns (with MVC)
 - WISDM
 - Web Science, Web Engineering, WCMS

Course Objectives

- The student will be able to explain the fundamental concepts of systems analysis and design.
- The student will be able to list and explain the multitude of system development methodologies available to assist in developing complex systems.
- The student will develop an awareness of the complexities of requirements determination.
- The student will develop the analytical skills required to examine a situation in order to thoroughly understand the factors involved, to recognize any problems, and to derive potential solutions.
- The student will be able to use those skills to analyze system requirements and specify system processes and data flows, express requirements through various approaches, design user interfaces, and develop a systems proposal.
- The student will be able to employ appropriate systems design tools such as structure charts, process specifications, and dialog flow designers to design a system and its user interface.
- The student will be able to list and explain the fundamental concepts behind the implementation, testing, conversion, and maintenance of a system.
- The student will be able to assess and apply Object-Oriented analysis and design methods like use cases to express user requirements, UML modeling, and other OO approaches.
- The student will be able to explain alternative approaches like the Web-based Information Systems Development Methodology.
- The student will be able to assess alternative development approaches such as agile technologies.

Policies & Procedures

Grade Distribution

Grade	-		+
A	90.00 - 91.99	92.00 - 100.00	
B	80.00 - 81.99	82.00 - 87.99	88.00 - 89.99
C	70.00 - 71.99	72.00 - 77.99	78.00 - 79.99
D	60.00 - 61.99	62.00 - 67.99	68.00 - 69.99
F	00.00 - 59.99		

Final Grade Determination

Type	Points
Project/Exercises	40%
Exams	50%
Quizzes/Assignments	10%

Exams

You must have a 60% or higher average on class exams in order to be eligible to earn a C- or above grade for the course. In other words, unless you average a 60% or higher on the exams your course score will be at most a D.

Make-Up Quizzes or Exams

No make-up exams or quizzes will be given, regardless of the reason for absence. Instead, a comprehensive exam will be given at the end of the semester to those students who have missed an earlier exam. The grade on the comprehensive exam will replace at most one zero score for a missed exam. It may be possible to make arrangements to take an exam early if there is a valid reason. In lieu of makeup quizzes, the lowest quiz grade will be dropped.

Final Exam

The scheduled date for the final exam is shown on the online class schedule. You must take the exam on the scheduled date.

Assignments/Projects

Assignments and projects that are not submitted on the due date will be subject to grading penalties of 20% per day. Assignments and projects cannot be graded until all students have submitted their work, so prompt submission is essential. Once assignments have been graded, late submissions will not be accepted.

Group Project

Group work is required for those intending to enter any IT-related profession and is necessary to derive maximum benefit from courses. The prevalence of teamwork in industry makes it incumbent upon universities to better prepare students for real life projects. A major component of this course is a collaborative semester project designed to engage students in tasks that apply the skills and content learned in class within a real-world context for learning. Project-based learning requires students to deal with complex questions and undertake projects that involve considering and synthesizing real-world issues.

Peer Evaluations

Since work is not done individually, peer evaluations will be used. The members of your project team may not all receive the same project grade. While grades are assigned to the overall project, each individual's grade will be determined by weighting that project grade by the results of a confidential peer evaluation. Each team member will be required to assess the contributions of all members of the team with regard to the percentage contributed by each member toward the successful completion of all phases of the project, and the cumulative scores for each team member will be averaged. Students who fail to submit evaluations may be assessed a penalty of one letter grade on their project score.

Graduate Credit

Students taking this course for graduate credit are required to do additional work in the form of substantive research and video presentation about a topic related to Systems Analysis and Design but not covered in class.

The graduate topic needs to be researched and presented as if it was a regular class lecture. Presentations should be in the form of a video and will be made available to the undergraduate students.

Extra Credit

No extra credit will be given. Therefore, it is important to begin the semester with the knowledge that exams and assignments will constitute your entire grade.

Academic Integrity

Academic integrity is expected at Idaho State University and the College of Business. All forms of academic dishonesty, including cheating and plagiarism, are strictly prohibited, the penalties for which range up to permanent expulsion from the university with "Expulsion for Academic Dishonesty" noted on the student's transcript. If you are unclear as to what constitutes academic dishonesty, read the College of Business Policy on Academic Integrity and the ISU Academic Integrity and Dishonesty Policy.

Some examples of dishonest behavior include, but are not limited to

- Working on individual assignments with other students.
- Copying material from a source without attributing the source.
- Allowing another student to copy your work and then submit it as his/her own.
- Allowing someone else to complete your assignments for you and then passing off the work as your own.
- Bringing unauthorized material or devices to an exam. Note that you do not have to be caught using them - just having them is an offense.
- Copying from another student's exam.
- Communicating with someone other than the professor during an exam.
- Removing the exam from the classroom.
- Acquiring exam or assignment answers or questions.
- Taking an exam for someone else or having someone take an exam for you.
- Performing any act designed to give unfair advantage to a student or the attempt to commit such acts.

Professional Demeanor

Part of receiving an education from a professional college is learning about your chosen field. Another part is learning to act like a member of that field. Professional Demeanor is in many ways the most important part of the learning process. How you act affects not only how others perceive you, but can also result in rewards or, alternatively, negative consequences. It will also affect your class grade.

The grade that you receive in this class will consist of two parts: the objective portion that is a calculated average of all assignments, quizzes, exams, etc., and a subjective portion that is based on your professional demeanor.

$$\text{Final Grade} = \text{Calculated Grade} * \text{PDM}$$

The professional demeanor multiplier (PDM) can range from 0.85 to 1.00, and will be multiplied by your calculated average. Students will be assigned a PDM of 1.0 unless behaviors are exhibited that signify unreadiness for the workforce.

Students will demonstrate professional demeanor and commitment in a variety of ways: energetic and respectful participation in class, willing acceptance and completion of obligations; punctuality; and not whining. Professional demeanor includes several subjective items such as attendance, positive attitude, preparation, appropriate language and respectfulness to other students and the professor. Students are expected to come to class prepared, participate in activities and discussions, and treat others with respect in the classroom, which includes listening interactively to classmates and the professor, and respecting others' viewpoints.

Do not text, check social media sites, or eat meals during class.

Some students enroll in a course already having experience in the subject area, and while contributions to discussions are welcomed, arrogance and unwillingness to learn or comply with professor directions will not be tolerated.

Attendance

Attendance in class is integral to the learning process. Students are expected to attend every class. Some material may only be covered in class and not made available on the course website. Students should notify their instructors by voicemail or email when they are absent from class.

Students are responsible for all material covered and announcements made within classes, even when absent from classes. Students should rely on classmates and online materials for any course content that is missed.

More than three absences may result in the reduction of one letter grade on the final grade. If a student misses the equivalent of three weeks or more of class, no credit may be received for the course. It is the student's responsibility to contact the professor to check on their status if more than three classes are missed.

Students are expected to remain for the entire duration of the class.

Tardiness

Students are expected to arrive for class and be in their seats by the scheduled beginning of class. Repeatedly coming to class late disrupts the teaching/learning environment in the classroom and adversely affects the other students in the class.

Digital Device Policy

Increasing numbers of students are using digital devices to take notes in class. To maintain an atmosphere conducive to learning in the classroom and to avoid distracting others set your device so that no audible signal can be heard.

Restrict use of digital devices to note taking or class-related web sites. Random browsing, social networking, playing games, and exchanging email are discouraged. If you engage in unauthorized communication or entertainment as described above you will be marked absent. Repeated violations of this policy will result in letter grade reductions.

If a guest speaker comes into the class, please give the person your full attention and close all digital devices.

ICS Facebook Page

The Informatics and Computer Science Facebook page can be joined at www.facebook.com/groups/5643817087/. The page is where we post major announcements as well as information about guest speakers and internships for Informatics and CS majors.

Student Organization

There are both immediate benefits and long term benefits to getting involved in the student organization, including career preparation, networking, learning things not taught in class, and giving back to your fellow students. Visit <http://www.facebook.com/groups/59810306279/> for the Student Organization Facebook page.

Reading Materials

Students are responsible for thoroughly reading the course syllabus and understanding its content.

Students are expected to read the assigned materials (textbooks or online notes) prior to the class day with which it is associated and to actively participate in class discussions. Unannounced quizzes may be given over reading assignments if students don't appear to be reading the material in advance.

Student Notification

All students are responsible for checking the web page and their email on a regular basis, preferably daily, for notification of any class scheduling changes or assignment clarification. Notice of quizzes or assignment clarifications may be posted late at night.

Instructor Availability

The instructor will be available during posted office hours, but additional efforts are made to increase accessibility to the students. If the instructor is not available at the telephone number above, the student can leave a detailed voicemail message. However, the instructor's email is checked throughout the day and often the student will get an immediate response to questions submitted by email. Email is usually the most reliable means of contact.

Email Etiquette

As noted, email is the best way to contact the professor, but please DO NOT use chat or SMS shorthand in your messages. Use full words. While shorthand is fine for casual messages, you are in a professional environment and need to present yourself as such.

Course Fees

Course fees are utilized to pay for lab assistants who can tutor, review work, explain concepts, assist in grading, and perform other duties to help students be successful in their classes.

Special Needs

Our program is committed to all students achieving their potential. If you have a disability (physical, hearing, vision, psychiatric, or learning disability) that may need a reasonable accommodation, please contact the ADA & Disabilities Resource Center located in the Rendezvous Complex, Room 125, 282-3599, as early as possible.

Closed Week Policy

Information about the ISU Closed Week Policy can be found online. Note that the policy does not prevent the presentation of new material during closed week.

Technology assistance

For technology assistance contact the Help desk at 282-4357 or <http://help.isu.edu/>

Tutorial assistance

Contact <http://www.isu.edu/departments/university-tutoring> to request a tutor.