

Designing and Developing an Information System - I494/I495 Fall 2009 Course Syllabus

Course Description: Senior undergraduate students work on capstone projects in supervised teams. Teams select an appropriate project (preferably based on cognate specialty area), then learn to develop a plan that leads to success. Teamwork, communication, and organizational skills are emphasized in a real-world styled environment.

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The associate instructors will be located in Informatics 003.

Meeting Times:

T	2:30-3:45	Chemistry 001	(Lecture)
T	4:00-5:15	Business 201	(Lecture)
MW	1:25 – 2:15	Informatics Building 109	(Lab)
MW	2:30 – 3:20	Informatics Building 109	(Lab)
MW	3:35 – 4:25	Informatics Building 109	(Lab)
TR	10:10 – 11:00	Informatics Building 109	(Lab)

Lab Sections: The labs are used for a variety of activities, including discussion topics, technology training, project research, team meetings, employer events, career planning and resume preparation, and as a time and a place to work. We keep track of your attendance at the labs so that you get credit for being there, which is one form of participation.

Technology Training: There is no expectation that you already know everything that you will need to know in order to complete your project. On the contrary, you should expect to learn on demand, based on the specific needs of your project. You need to be prepared to do this next year, and for the remainder of your careers. Your project proposal should address technology training requirements, and develop a plan to address any deficiencies your team may have. See the new Lynda.com training through UITS at <http://ittraining.iu.edu/lynda/>.

Status Reporting: You must submit a weekly written status report that identifies your activities relative to the course. The reports are per project team with detailed sections for each team member. You will be provided with a template, or software to facilitate the reporting. Like the technology seminars you must submit a report every week in order to receive full credit. Your grade for each status report will be one of: exceeds expectations, acceptable, or not satisfactory. In all cases (even exceeding expectations) you can expect specific suggestions on how to improve your status reporting.

Team Formation: Each year we want to get the projects started earlier than the previous year. This year is no exception. We blend project selection and team formation. Some teams start by selecting a project or type of project, other teams form first and then search for the appropriate problem to solve. We like the students to participate in this process (if they want) by working with us on forming teams. If you have an idea for a project or a team talk to us right away.

Deliverables: The single most important thing that students should focus on is meeting due dates for deliverables – **according to a predefined plan**. We will provide guidelines for when the deadlines will occur. Your group will suggest the deadlines and we will review and approve them. Once a deadline is set you should not change a deadline without talking to us. You will report your progress towards the deliverables on your master project plan. If you are at risk of missing a deadline you must explicitly report this in your status reports, along with an explanation of why the situation has occurred and what you are doing to remedy the problem.

Presentations: There will be at least 1 (and hopefully more) electronic poster presentations during the year to allow everyone within the class to gauge their progress relative to the other teams. The final poster presentation is at the capstone fair on April 30th from 3:00PM-6:00PM.

Access Cards:

You will be provided an electronic access card for the Informatics building. The card will give you 24-hour access to the building and the capstone lab (Room 003) in the basement. Other rooms may also be used, based on specific group needs. When you get your card (unless you do not want one) you will be subject to the following expectations:

- 1) You will use the facilities for appropriate, course related activities
- 2) You will leave the facility as you found it
- 3) You will notify the facility manager and the instructors if a problem occurs
- 4) You will not allow an unauthorized individual use your card
- 5) You will return the card at the end of the course
- 6) Your use of the card is electronically monitored
- 7) You will notify us immediately if you lose your card
- 8) Lost and un-returned cards will result in a \$25 fee to your bursar account

The AIs will either be in this room or near it for office hours. The room may be used for overflow scheduling of interviews.

Grading:

Most of your final grade is derived from your project, the bulk of which is completed in the second semester. The following table provides a breakdown of the relative value of each phase of the project, as well as the values for each individual assignment or exam.

Project	
Requirements	15%
Training plan	5%
Design	15%
Implementation	15%
Process/reporting	15%
Exams (2)	20%
Lab exercise completion	10%
Participation	5%

You should note that “what” you deliver at the end of the year is less valuable than “how” you work towards delivery. You must provide evidence of sustained effort on your project.

The grade for the first semester is automatically an “R”, which means that you will receive one grade for the entire class at the end of the second semester. Except for rare cases, the first semester and second semester grade will be identical.

Your group will receive an unofficial/unreported grade estimate for the project at the end of the first semester. You should interpret the grade as a trajectory for the final project grade, and it implies that if your level of effort, and the results of the project stay consistent, you should expect to receive the interim grade as a final project grade. Note that a group project grade does not imply that all members on a group will receive that grade. In particular, low performing individuals should not be surprised to receive a grade much lower than the project grade.

Communications: We will utilize OnCourse for all course communications.
Home Page: www.informatics.indiana.edu/dgroth/courses/i450

Textbooks:

Readings will be assigned from online sources, and may include Books 24x7, which is linked from the course page or the library web page)

- (1) Dan Brandon, Project Management for Modern Information Systems
- (2) Alan R. Dennis, Barbara Haley Wixom, Roberta M. Roth, Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach, Third Edition
- (3) Steve McConnell, Software Estimation: Demystifying the Black Art
- (4) Rod Stephens, Beginning Database Design Solutions
- (5) Hans van Vliet, Software Engineering: Principles and Practice, Third Edition

Key Deliverables

Week	Expected Date	Deliverable
3	Sep 15	Project team identified
5	Sep 22	Project proposals
5	Oct 1	Training and education plan
6	Oct 8	Projects solidified
12	Nov 17	Requirements document, draft project plan
15	Dec 9,10	Electronic poster presentation for class members
18	Jan 18	Design document
19	Jan 25	Detailed project plan
23	Feb 24,25	Electronic poster presentation for class members
31	April 30	Capstone Fair – Friday, April 30, 3:00-6:00 PM
32	May 3	Last day to turn in reports, CD's, DVD's, documentation

Week	Date	Topic / Activity
1	Sep 1	Course Introduction, Information Systems Components Project Basics, Development Models, Lifecycles Reading: van Vliet, Chapter 1
2	Sep 8	Team Organization, Dynamics, Personnel Issues Project Proposals Reading: van Vliet, Chapter 5 Reading: Dennis, et al, Chapter 2
3	Sep 15	Project planning IT Career Fair (September 15) Reading: Brandon, Chapter 2 Reading: Dennis, et al, Chapter 3
4	Sep 22	Functional Requirements Qualitative Requirements Reading: Dennis, et al, Chapters 4, 5
5	Sep 29	Requirements Elicitation Data Requirements Reading: Stephens, Chapter 5
6	Oct 6	Quality Requirements, Requirements Documentation Project Management Reading: Brandon, Chapter 10
7	Oct 13	Midterm Exam
8	Oct 20	Functional Design Reading: Dennis, et al, Chapter 10
9	Oct 27	Data Design Reading: Stephens, Chapter 5
10	Nov 3	User Interface Design, Prototyping Reading: Dennis, et al, Chapter 10
11	Nov 10	Process Analysis Reading: Dennis, et al, Chapter 7 Reading: McConnell, Chapters 1,2,3
12	Nov 17	Project Estimation Reading: McConnell, Chapters 4,5
13	Nov 24	Project Estimation Reading: McConnell, Chapters 6,7,8
14	Dec 1	Project Estimation Reading: McConnell, Chapters 9,10,11
15	Dec 8	Risk Management Reading: McConnell, Chapters 22
	Dec 15	Final Exam Chemistry 001 2:45-4:45 Business 201 7:15-9:15

Policies

Attendance. We expect that students will approach the course as they should a professional job - attend every class.

Job Search. Because most students will be searching for a job at some point during the year, we expect that students might miss class or lab due to interview schedules. We understand the importance of finding an excellent job, but hope you will not skip too many of your classes – not only this class.

Academic Integrity. As with other aspects of professionalism in this course, you are expected to abide by the proper standards of professional ethics and personal conduct. This includes the usual standards on acknowledgment of joint work and other aspects of the Indiana University Code of Student Rights, Responsibilities, and Conduct. Cases of academic dishonesty will be reported to the Office of Student Ethics, a branch of the Office of the Dean of Students.

Plagiarism. Plagiarism constitutes using others' ideas, words or images without properly giving credit to those sources. If you turn in any work with your name affixed to it, I assume that work is your own and that all sources are indicated and documented in the text (with quotations and/or citations). I will respond to acts of academic misconduct according to university policy concerning plagiarism; sanctions for plagiarism can include a grade of F for the assignment in question and/or for the course and must include a report to the Dean of Students Office.

Religious Observances. Indiana University respects the right of all students to observe their religious holidays and will make reasonable accommodation, upon request, for such observances. Such requests should be made in writing to the instructor by the end of the second week of the course. The IU religious observance accommodation request form may be found at <http://www.indiana.edu/~deanfac/download/holidayreq.html>

Students with Disabilities. The University provides reasonable accommodation and auxiliary services which facilitate the higher education of qualified students with temporary or permanent disabilities. The extent to which these services are supplied is based on an individual student's need and academic requirements. For more information, please contact the Office for Disability Student Services at Indiana University Bloomington (see <http://www2.dsa.indiana.edu/dss>).

Withdrawal. Wednesday, October 28, is the last day to drop a course or withdraw from all courses with an automatic 'W'. After that date, a student may withdraw only with the permission of his or her dean. This approval is normally only for urgent reasons related to extended illness or equivalent distress.

Incomplete Grade. An incomplete ('I') final grade will be given only by prior arrangement in exceptional circumstances conforming to university and departmental policy which requires, among other things, that the student must have completed the bulk of the work required for the course with a passing grade, and that the remaining work can be made up within 30 days after the end of the semester.

Group Work. Because the capstone project is a group effort we expect that each member of a group will perform their activities to the best of their ability. Each team member must submit peer evaluation forms twice during the second semester. The forms will be due at the midpoint and the end of the semester. The information on the forms is used to apportion the project grade based on each team member's contribution. This means that grades among team members may vary.

Removal From Group. In extreme cases of non-performance on the group project a team member may be removed from the group. This will not occur without proceeding through a notification process and face to face meetings with the team, the affected team member and the instructors. This is not an open invitation to dis-invite someone from the team based on personality conflicts. If a student is removed from a project, an alternative project will be assigned.

Special Note on Influenza. With the possibility of an H1N1 (Swine) flu outbreak on campus, we need to limit the spread of any highly communicable disease, it is very important that individuals (students, faculty, staff) with the flu *stay away* from classes, labs, and other gatherings, and that they do not go to crowded locations like health services or physicians' offices *solely* to obtain documentation of illness. If you are symptomatic you must take care of yourself. Send me a note so that I am aware of your condition. Likewise, if I develop symptoms I will cancel class, and develop alternative mechanisms for instruction. Luckily, we have great technology available, and I can deliver virtual lectures if necessary.

Projects we would like to see continued:

- 1) Little 500 (RFID/database/website)
- 2) WheresMyBus (GPS/database/website)

Projects proposed by outside entities so far:

- 1) Karst Playscape at Karst Farm Park (website)
- 2) Community foundation of Monroe County (website/database)
- 3) Middle Way House (IT development)
- 4) Woodland campus tour (smartphone app)
- 5) Baked! (website/database)