

# Designing and Developing an Information System - I450/I451 Fall 2004 Course Syllabus

**Course Description:** System design and development present both technical and managerial problems with which students will be familiar from their undergraduate course work. This course puts these lessons into practice, as students work in teams to develop an information system. Examples of course projects include design and development of a database for a business or academic application, preparation and presentation of an interactive media performance or exhibit, or design and implementation of a simulated environment (virtual reality).

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Office Hours:      Monday 9:30-11:30 and by appointment.

**Lecturer:** Matt Hottell      Email: [mhottell@indiana.edu](mailto:mhottell@indiana.edu)  
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Office Hours:      Tuesday 11:00-12:00,  
Thursday 3:30-4:30 and by appointment.

**Associate Instructors:** Ben Murphy      Email: [bmurphy@indiana.edu](mailto:bmurphy@indiana.edu)  
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Office Hours:      Wednesday 10:15-11:15,  
Thursday 12:30-1:30 and by appointment.

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Informatics 301      Phone: TBA  
Office Hours:      Wednesday 1:00-2:00,  
Friday 11:00-12:00 and by appointment.

**Meeting Times:** TR 2:30 – 3:20      Ballantine Hall 310      (Lecture)  
W 11:15 – 12:30      Informatics Building 109      (Lab)  
W 4:00 – 5:15      Informatics Building 109      (Lab)  
R 11:15 – 12:30      Informatics Building 109      (Lab)

**Technology Seminars:** Throughout the year we will be developing, and delivering topical seminars (during the scheduled labs and other scheduled times) on a variety of technologies/techniques. The need for these seminars has arisen from our past experience with the diverse range of skills and interests of students in the course. The emphasis of the seminars is on learning how to use a specific technology – ideally aimed at solving a problem related to your project. You are encouraged to suggest topics that you are interested in learning. You must attend and successfully complete at least 14 seminars (or equivalent) during the year to receive full credit for this portion of your course grade. Extra credit may be earned by attending more than 14 seminars.

**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. In the second semester the reports will be per project, with the expectation that you are communicating individual status within your team.

**Personal Objectives:** Part of becoming a professional involves the setting of personal goals and objectives. The instructors are committed to helping you be successful, but we want you to assume some responsibility in becoming self-directing. You will be asked to submit a written list of measurable objectives that you will work towards over the course of the year, report on your progress towards satisfying your objectives on your weekly status report, and a final report at the end of the year.

**Deliverables:** The single most important thing that students should focus on is meeting due dates for deliverables. 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 may only change a deadline if we approve the change. 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.

**Grading:**

Half 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%
Design	10%
Implementation	15%
Process	10%
Examinations (2)	20%
Technology Seminars	20%
Personal Objectives	5%
Participation	5%

You should note that “what” you deliver at the end of the year is less valuable than “how” you work towards delivery.

**Communications:**

We will utilize OnCourse for all course communications and Sharepoint for team communications.

**Home Page:**

[www.informatics.indiana.edu/dgroth/courses/i450](http://www.informatics.indiana.edu/dgroth/courses/i450)

**Textbooks:**

- (1) *Software Requirements*, Karl E. Wiegers, Microsoft Press, 1999.  
(Recommended – but available online at Books 24x7 from the course homepage)
- (2) Other materials will be available on Books 24x7 or the course web page.

Week	Date	Deliverable
2	Sep 10	Project team identified
4	Sep 24	Project proposals
8	Oct 22	Projects selected
12	Nov 19	Requirements document
14	Dec 2	Training and education plan
18	Jan 21	Design document
19	Jan 28	Detailed project plan
23	Feb 21-24	Electronic poster presentation for class members
31	Apr 27	Capstone Fair – Wednesday, April 27, 3:00-7:00 PM
32	May 2	Last day to turn in reports, CD's, documentation

## Lecture Topics

<b>Week</b>	<b>Date</b>	<b>Topic / Activity</b>
1	Aug 31, Sep 2	Course Introduction, Information Systems Components Project Basics, Development Models, Lifecycles
2	Sep 7, 9	Team Organization, Dynamics, Personnel Issues Project Proposals
3	Sep 14, 16	Project Planning Requirements Analysis
4	Sep 21, 23	Functional Requirements Qualitative Requirements
5	Sep 28, 30	Requirements Elicitation Data Requirements
6	Oct 5, 7	Quality Requirements Project Management
7	Oct 12, 14	Midterm Exam – October 12 Functional Design
8	Oct 19, 21	Functional Design
9	Oct 26, 28	Data Design
10	Nov 2, 4	User Interface Design Tool Selection Prototyping
11	Nov 9, 11	Process Analysis Project Risks
12	Nov 16, 18	Project Estimation Project Planning
13	Nov 23	Validation Techniques
14	Nov 30, Dec 2	Test Plans Detailed Specifications
15	Dec 7, 9	Managing Change Multi-platform Issues
16	Dec 16	Final Examination Period, 5:00 – 7:00 PM

## **Policies**

### **Attendance.**

We expect that students will approach the course as they should a professional job - attend every class. Lecture outlines will be provided to assist you in following and organizing the course material, but are by design not a verbatim transcript of what is covered in the lectures. If you cannot attend class we would appreciate your notifying us that you will not be present - an email is sufficient.

### **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.

### **Withdrawal.**

Friday, October 29, 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.