DEPARTMENT OF COMPUTER INFORMATION SYSTEMS
Robinson College of Business
Georgia State University

CIS 9320: Design Research Methods in Information Systems
Fall 2008 (CRN: 86770)

The course syllabus provides a general plan for the course; deviations may be necessary

INSTRUCTOR:
Name: Vijay Vaishnavi
Office: 902, RCB (35 Broad Street)
Phone: 404-413-7381 (office)
Office Hours: By appointment
E-Mail: vvaishna@gsu.edu

COURSE:
Time: Thursdays, 12:00-2:30 PM
Location: RCB 900
URL: http://www3.cis.gsu.edu/vvaishnavi/9320vv/9320index.html

CATALOG DESCRIPTION
The course develops skills needed for conducting research whose aim is to invent methods and techniques that make information systems more effective and efficient. Students will also acquire skills in developing research proposals that follow the design research paradigm and will learn how to publish such research.

DETAILED COURSE DESCRIPTION
The course develops skills for implementing and evaluating the techniques and methods that are used in the various phases of design research. After an exposure to the characteristics that differentiate design research from other types of research, research methods and techniques used in the various phases of such research will be discussed in the context of exemplars of such research. The exemplars will be from a number of information systems areas such as software engineering, data base and knowledge base systems, and communication systems.

LEARNING OBJECTIVES
At the conclusion of the course, student should be able to:
• Define and describe the essential characteristics of design research and to differentiate it from other types of research;
• Discuss in oral and written form the key ideas and intellectual currents underlying design research and its methods;
• Present a well-developed argument, in written and oral forms, for the importance of a selected research topic within the theme of the course (design research) and articulate a proposal for studying the research topic.
• Conduct design research and write a paper that with refinement could be submitted to a scholarly conference and expanded into a journal submission;

CONDUCT OF THE COURSE
The course will be conducted as a seminar. Each student is expected to participate in every class and read the assigned material before the class. The grade will be determined in part, on the basis of the quality of the student's preparation and participation (short presentations, leadership of class discussion, and participation in class discussions).

COURSE REQUIREMENTS AND GRADING
Class participation and discussion: 15%
Take home test: 25%
Team project: 20%
Individual research proposal and paper: 40% (proposal: 5%)

The final grade will be determined by computing your total weighted score out of 100, rounding off to the nearest integer value according to the following scale. A: 94 or above, A-: 90 to 93, B+: 87 to 89, B: 83 to 86; B-: 80 to 82; C+: 77 to 79; C: 73 to 76, etc.

CLASS ATTENDANCE AND PARTICIPATION
Students are expected to attend all classes (and to arrive on time!), except when precluded by emergencies, religious holidays, or other extenuating circumstances. If you will be absent from class for any reason, please notify the instructor in advance whenever possible.

In evaluating class participation, both the quantity of comments (i.e. how many times a student speaks) and, more importantly, the quality of the comments will be taken into account. The quality of the students’ comments will be evaluated using the following criteria:
• Does the comment demonstrate that the student is ready to contribute to the discussion or does the comment show that the student is unprepared for the discussion?
• Is the point made concisely, or is it buried in a long, rambling, diatribe?
• Does the comment move the discussion to an important area or does it just rephrase what has already been said?

TAKE HOME TEST
The take home test will be similar to the design research proposal portion of comprehensive exams. The students will be given an existing paper, and then have two weeks to develop a design research proposal that is related to and extends on the research presented in the paper.

The proposal should include a description of the problem, research issues and/or questions, the importance of the problem and the research questions/issues, the approach to be followed in conducting the research, the methodology to be used and its appropriateness, and the expected significance of the research. The proposal should
include literature review in the context of the problem and its importance or in other contexts.

Students will be evaluated on their ability to make a reasonable case for the importance of the research proposed, the thinking that is exhibited in advancing an approach for the problem, justification for the appropriateness of the approach and the methodology, and the intellectual and broad contribution that the research is expected to make. Students will also have to show that the proposed research will make a contribution to knowledge.

**RESEARCH PROPOSAL AND PAPER**

Each student will develop an actual design research paper in an area within the theme of the course and in a topic area that may be chosen from a set of suggested topic areas provided by the instructor or other topic areas. This paper, after some refinement, should be suitable for submission to a conference such WITS (Workshop on Information Technology & Systems) or DESRIST (International Conference on Design Research in Information Systems and Technology), and the expanded version of the paper should have the potential for submission to a scholarly journal.

As a first step toward carrying out the research project, each student is required to produce a short research proposal. As a template for this proposal, we will use the Robinson College of Business (RCB) format for faculty summer research release proposals. A sample proposal will be made available. You should adhere to the 6-page limit and format of the sample proposal per RCB guidelines. Any additional material can be attached if needed as an appendix to the proposal.

Each student is expected to communicate the progress of the project to the instructor every two weeks through e-mail and in person when needed. In addition each student may be asked to discuss the progress of the project in class.

**TEAM PROJECT**

The focus of the team project is:

- Justify why each of the five sample design research exemplars (papers) and each of the seven new research exemplars (papers) should be treated as a research project and why it should be or should not be considered as a design research project. (The papers have been selected such that not all the papers can necessarily be considered as design research papers.)

- For each of the papers that you consider to be a design research exemplar, identify and justify in detail the research patterns that were used (or could have been used) in conducting the research. This part of the project should follow the structure used for each of the sample cases in Part III of the text (Vaishnavi and Kuechler, 2007).

- Please see the Schedule of Lectures section for deadlines on submissions of different parts of the team project. The final revised report for the entire project is due on November 13.

**COURSE READING MATERIALS**
Text

Session 1: Introduction and Course Overview
[1.1] Text (Chapter 1).

Session 2: Understanding Design Research
[2.1] Text (Chapters, 2 and 3).

Session 3: Sample Design Research Exemplars

Session 4: Proposal Writing; Using patterns to illuminate research practice
[4.1] Text (Chapters, 4 and 5).
[4.3] RCB Research Proposal Guidelines

Session 5: Creativity
[5.1] Text (Chapter 6).

Session 6: Problem Selection and Development; Literature Search
[6.1] Text (Chapters, 7, 8, and 12).

Session 7: Suggestion and Development
[7.1] Text (Chapters, 9 and 12)

Session 8: Evaluation and Validation; Publishing
[8.1] Text (Chapters, 10, 11, and 12)

Session 9: Design Research Dissertation Exemplars

New (Design and Non-Design) Research Exemplars


**SCHEDULE OF LECTURES:**

The following scheduled list of topics **is subject to change.**

<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1</td>
<td>August 21</td>
<td>Introduction and Course Overview</td>
<td>[1.1]*, [1.2], [1.3], [1.4], [1.5]</td>
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<td>2</td>
<td>August 28</td>
<td>Understanding Design Research</td>
<td>[2.1], [2.2], [2.3], and [2.5]</td>
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<td>3</td>
<td>September 4</td>
<td>Sample Research Exemplars</td>
<td>[3.1], [3.2], [3.3], [3.4], [3.5], [10.1], [10.2], [10.3], [10.4], [10.5], [10.6], [10.7]</td>
<td><strong>Team Submission</strong></td>
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<td>(1) Justification for a Paper to be considered as a research paper;</td>
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<td>(2) Justification for a paper to be considered as a Design Research or a Non-Design Research Paper: Submission* and Presentation</td>
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<td>4</td>
<td>September 11</td>
<td>Proposal Writing</td>
<td>[4.1], [4.2], [4.3], [4.4]</td>
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<td>Using patterns to illuminate research practice</td>
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<td>5</td>
<td>September 18</td>
<td>Creativity</td>
<td>[5.1], [5.2]</td>
<td><strong>Short Research Project Proposals Due</strong></td>
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<td>6</td>
<td>September 25</td>
<td>Problem Selection and Development; Literature Search</td>
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<td>Patterns: Submission** and presentation</td>
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<td>7</td>
<td>October 2</td>
<td>Suggestion and Development</td>
<td>[7.1]</td>
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<td>Patterns: Submission** and presentation</td>
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<td>8</td>
<td>October 9</td>
<td>Verification and Validation; Publishing</td>
<td>[8.1]</td>
<td><strong>Team Submission</strong></td>
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<td>Patterns: Submission** and presentation</td>
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<td>9</td>
<td>October 16</td>
<td>Design Research Dissertation Exemplars</td>
<td>[9.1], [9.2]</td>
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<td>*Take Home Test Given</td>
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<td>10</td>
<td>October 23</td>
<td>Information Integration Lab at Georgia State: Current</td>
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<td>11 October</td>
<td>October</td>
<td>Research Overview</td>
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<td>30</td>
<td>11</td>
<td>Current Research Exemplars</td>
<td>Take Home Test Due</td>
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<td>Take Home Research Proposal Presentations</td>
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<td>13 November</td>
<td>November</td>
<td>Review of Design Research Patterns</td>
<td>Team Project Due</td>
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<td>14 November</td>
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<td>Individual Research Project Presentations</td>
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<td>4 December</td>
<td>December</td>
<td>Course Review and Discussion</td>
<td>Student Papers Due</td>
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*See Course Reading materials

†For sample as well as new Research Exemplars

**For new Design Research Exemplars; the patterns are for the topic of the session
Official CIS Department Class Policies

1. Prerequisites are strictly enforced. Students failing to complete any of the prerequisites with a grade of “C” or higher will be administratively withdrawn from this course with loss of tuition fees. There are no exceptions.

2. Students are expected to attend all classes and group meetings, except when precluded by emergencies, religious holidays, or bona fide extenuating circumstances.

3. Students who, for non-academic reasons beyond their control, are unable to meet the full requirements of the course should notify the instructor, by email, as soon as this is known and prior to the class meeting.

4. A “W” grade will be assigned if a student withdraws before mid-semester if (and only if) he/she has maintained a passing grade up to the point of withdrawal. Withdrawals after the mid-semester date will result in a grade of “WF”. See the GSU catalog or registrar’s office for details.

5. Spirited class participation is encouraged and informed discussion in class is expected. This requires completing readings and assignments before class.

6. All exams and assignments are to be completed by the student alone with no help from any other person.

7. Collaboration within groups is encouraged for project work. However, collaboration between project groups will be considered cheating.

8. Copying work from the Internet without a proper reference is considered plagiarism and subject to disciplinary action as delineated in the GSU Student Handbook.

9. Any non-authorized collaboration will be considered cheating and the student(s) involved will have an Academic Dishonesty charge completed by the instructor and placed on file in the Dean’s office and the CIS Department. All instructors regardless of the type of assignment will apply this Academic Dishonesty policy equally to all students. See excerpt from the Student Handbook below on Academic Honesty: (Abstracted from GSU’s Student Handbook Student Code of Conduct “Policy on Academic Honesty and Procedures for Resolving Matters of Academic Honesty” - http://www.gsu.edu/~wwwreg/ugcat2000/academic/honesty.htm)

As members of the academic community, students are expected to recognize and uphold standards of intellectual and academic integrity. The University assumes as a basic and minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. Both the ideals of scholarship and the need for fairness require that all dishonest work
be rejected as a basis for academic credit. They also require that students refrain from any and all forms of dishonorable or unethical conduct related to their academic work. Students are expected to discuss with faculty the expectations regarding course assignments and standards of conduct. Here are some examples and definitions that clarify the standards by which academic honesty and academically honorable conduct are judged at GSU.

**Plagiarism.** Plagiarism is presenting another person’s work as one’s own. Plagiarism includes any paraphrasing or summarizing of the works of another person without acknowledgment, including the submitting of another student’s work as one’s own. Plagiarism frequently involves a failure to acknowledge in the text, notes, or footnotes the quotation of the paragraphs, sentences, or even a few phrases written or spoken by someone else. The submission of research or completed papers or projects by someone else is plagiarism, as is the unacknowledged use of research sources gathered by someone else when that use is specifically forbidden by the faculty member. Failure to indicate the extent and nature of one’s reliance on other sources is also a form of plagiarism. Any work, in whole or part, taken from the Internet or other computer based resource without properly referencing the source (for example, the URL) is considered plagiarism. A complete reference is required in order that all parties may locate and view the original source. Finally, there may be forms of plagiarism that are unique to an individual discipline or course, examples of which should be provided in advance by the faculty member. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly or creative indebtedness, and the consequences of violating this responsibility.

**Cheating on Examinations.** Cheating on examinations involves giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include the use of notes, texts, or “crib sheets” during an examination (unless specifically approved by the faculty member), or sharing information with another student during an examination (unless specifically approved by the faculty member). Other examples include intentionally allowing another student to view one’s own examination and collaboration before or after an examination if such collaboration is specifically forbidden by the faculty member.

**Unauthorized Collaboration.** Submission for academic credit of a work product, or a part thereof, represented as its being one’s own effort, which has been developed in substantial collaboration with another person or source or with a computer-based resource is a violation of academic honesty. It is also a violation of academic honesty knowingly to provide such assistance. Collaborative work specifically authorized by a faculty member is allowed.

**Falsification.** It is a violation of academic honesty to misrepresent material or fabricate information in an academic exercise, assignment or proceeding (e.g., false or misleading citation of sources, the falsification of the results of
experiments or of computer data, false or misleading information in an academic context in order to gain an unfair advantage).

**Multiple Submissions.** It is a violation of academic honesty to submit substantial portions of the same work for credit more than once without the explicit consent of the faculty member(s) to whom the material is submitted for additional credit. In cases in which there is a natural development of research or knowledge in a sequence of courses, use of prior work may be desirable, even required; however the student is responsible for indicating in writing, as a part of such use, that the current work submitted for credit is cumulative in nature.