R. Nickerson

BUS 895: Research Project in Business
ISYS 895: Research Project in Information Systems or Electronic Commerce

Course Syllabus

This syllabus gives general background on how I run BUS/ISYS 895. A syllabus with details about a specific semester will be available to students shortly before the semester begins.

Course Description

This course is designed to provide you with background and experience in business research. You will be required to undertake an independent research project culminating in a written report and an oral presentation.

Prerequisites

BUS 895 must be taken by MBA students. The prerequisites are 12 units from the 800-level CoB courses.

ISYS 895 must be taken by MSBA students concentrating in Information systems or Electronic commerce. The prerequisites is three 800-level courses in the student's emphasis (Information systems or Electronic commerce).

All students must have passed the GET or passed BUS 514 before starting the course.

All prerequisites must be completed prior to taking BUS/ISYS 895.

Course Process

My goal in this course is to help you complete your 895 project in one semester so that you will be able to graduate as soon as possible. To accomplish this goal, I hold group meetings six or seven times during the semester during which we discuss different aspects of doing an 895 project. These meetings will give you specific guidance on such topics as project selection, information sources, research methodology, report writing, and oral presentation technique. The meetings will be scheduled one evening a week starting at 6:30 or 7:00, depending on student preference. The exact dates and room of these meetings will be announced later, but the first meeting will be during the first week of class. Each meeting should last one and a half to two hours. These meetings will also give you an opportunity to discuss your project with me and the other students, and to enter into discussion of other students' projects, all of which will help you complete your project more easily and faster. Some short outside reading will be assigned for discussion during the meetings and you will have a few very short written assignments (a few sentences each) designed to help you with your projects. None of the outside work will be very time consuming, however, so as not to detract from you work on your project.

I will be asking you to turn in first drafts of parts of your report at specific times during the semester. This is so that I can give you feedback on your report during the semester. These first drafts will not be graded, however. A final draft of your entire report will be due late in the semester. You will also have to give a copy of the final draft to the second reader. Actual due dates for drafts will be distributed at the beginning of the semester. The final copy of your report (which comes after the final draft) will be due at the time of your oral presentation. You will need a final copy to turn in to the College of Business, one for me, one for your second reader,

and one to keep for yourself. Your oral presentation will be scheduled for a Saturday near the end of the semester, with the exact date announced later.

Grading

Grading will be on a plus/minus letter grade basis. I have designed the course in such a way that if you follow the approach outlined in the course, and meet the deadlines and other requirements of the course, you are likely to finish successfully and on time. My role is to provide you with direction and assistance, and to help you as much as I can to complete the course. I do not feel that is in your best interest to continue the course beyond one semester. If you cannot complete the course in one semester, I will help you with draw from the course so that can start over again another semester. Therefore, I do not give incomplete grades, SP grades, or any other grade that allows continuation of the course beyond the end of the semester, except for "unforeseen, but fully justified, reasons" (SFSU Bulletin), such as a medical emergency.

Selecting a Research Project

Your first step toward successful completion of 895 is to select a project. Because you have a time limit for completing the project, it is very important that you decide on your project early and get my approval of your project.

Selecting a research project can be very difficult. The most important thing is to select a project in which you are interested, because if you are not interested in the project you will not want to put a lot of effort into it. In addition, the project should be in an area in which you already have some knowledge. Although you can do a project in an entirely new area, doing so will take more time because you first will have to familiarize yourself with the basics of the subject. Finally, the project should be capable of being completed in the time available.

Research Problem or Question

Your project must involve the investigation of a *research problem* or *research question*. This problem or question is the central issue that you investigate in your project and must be of general interest in your field. That is, it must be something that is of interest to other people in your field. It is not the same as a *business problem* faced by a specific business. For example, a certain business may want to develop a particular type of e-commerce system and thus has a business problem of how to develop the system. This problem is only of interest to the specific business and not of general interest to others involved with e-commerce. Thus it would not be an acceptable research problem for your project (although it could be used as the basis for a case study that is part of your project). On the other hand, developing a general procedure for deciding how to develop and e-commerce system for any type of business is of general interest to those involved in e-commerce and thus could form the basis for a research problem or research question for your project.

Research Methodology

Your project must involve both secondary research and primary research. *Secondary research* is investigation into the research done by others on your research problem or question. It usually involves internet research into your problem or question to locate articles written by others about your problem. *Primary research* is original research that you do on your research problem or question. It involves gathering your own data and analyzing the data to reach your own conclusions.

One of the most important decisions in project selection is what type of primary research methodology you are going to use to investigate your research problem or question. Some common methodologies used by students are listed here, but there are other approaches.

Interviews of key informants. This form of research involves identifying and interviewing a small number (usually 4-6) of individuals who are very knowledgeable in the area of your research (called *key informants*). The interviews must be well-planned with the same questions of all individuals. The responses received from these interviews are then analyzed to gain insight into the research problem or question. If you do this type of project, you must do secondary research into the problem area you are investigating before conducting the interviews.

Survey. Survey research involves gathering data from a number of sources in order to reach a conclusion. The survey could involve questions asked of people through an online survey, written questionnaires, telephone interviews, or face-to-face interviews. It could also involve surveying products, tools, or methods. Sometimes this form of research involves stating one or more hypotheses, gather the appropriate data, and finally draw conclusions about the hypotheses by analyzing the data, often using statistical techniques. If you do this type of project, you must do secondary research into the problem area you are investigating before doing the survey. Then you can do your survey and analyze the data that you gather.

Experiment. Experimental research involves gathering data in a controlled environment, such as a computer lab. Often people are used as subjects of the experiment. As with a survey, you may have to state one or more hypotheses. Then you gather data by running the experiment and analyze the results, usually using statistical techniques, to reach a conclusion. You must do other secondary research into your problem area before setting up the experiment.

Case study. Case study research involves examining one situation, usually in a business. This type of research is often an applied project in which you use some technique or tool in a real-world situation and draw a conclusion about the effectiveness of the technique or tool. The case could involve many different things. For example, you could do a case study of how a particular business handles a certain an information system or e-commerce situation. You could also do a case study in which you design an information system or an e-commerce system for a business. Developing a software application for a particular business is also a form of case study. In all these examples you are doing something in a real business or organization. You will have to do secondary research to thoroughly investigate the problem area in which you are working before doing the case study.

Model or methodology development. In this form of research, you develop a model, methodology, conceptual framework, or similar approach to a problem. The approach you develop is based on secondary research. You will need to test the approach, which can be done in a number of ways, such as a case study or an experiment. You reach a conclusion about your approach based on the test that you did. This type of research is often combined with one of the other types.

Other methodologies. A number of other research methodologies can be used besides those listed here. Often the actual approach is a combination of several methodologies. You do not have to select one of the methodologies listed here for your project.

Of least interest are the details of your research methodology, such as the details of how a survey was conducted, an experiment run, or a case study undertaken, although these details must be

included in your report so that others can see what you did. Of most interest are the *general concepts* that you learn, the *analysis* that you do, and the *general conclusion* that you reach.

Characteristics of an Acceptable Project

You can undertake many types of research projects in information systems or electronic commerce. The following are some characteristics of an *acceptable* project:

1. You present a research problem or research question that is of general interest in your field.
2. You do secondary research into your problem or question in which you learn more about it than you learned in other courses.
3. You do primary research to gather data related to your problem or question in some appropriate way, such as through interviews of key informants, a survey, an experiment, or a case study.
4. You analyze your data to draw a conclusion about the solution to your research problem or answer to your research question.

Several types of projects are *not acceptable*. One is a pure literature research project in which you simply summarize the literature on a subject, as you might have done for another course. Literature or other secondary research is part of a successful project, but it cannot be the only thing in a project. Another type of unacceptable project is a purely applied project, such as developing a computer application, in which there is no secondary research. There are many other acceptable and unacceptable projects. I will be glad to discuss with you your ideas for a project and guide you in the selection of an acceptable, interesting project.

The project that you undertake must not be a repeat of a project you did or are doing in another course. For example, if you took ISYS 871, you cannot simply develop an e-commerce system like you did in that course. You can, however, go beyond the topics of a course. Thus, you could investigate alternative ways of developing an e-commerce system, apply one or more of these methods in a new situation, and analyz the results. A project can be an extension of something that you did in another course, but it should not be a repeat of it.

BUS 895 students may do a project in information systems/information technology or in electronic commerce, or in another area of business. ISYS 895 students should do a project in the information systems field or the electronic commerce field.

You should not assume that I will be able to help you with the details of your project. I am not an expert in all aspects of the information systems and electronic commerce fields. You will have to work independently and solve most of your problems yourself. But I will be available to give you advice and to guide you throughout the semester.

Report Content and Organization

Your report can be organized in several ways, although usually it is divided into chapters covering the topics listed below. You do not have to number or title your chapters in this manner, however. Still, your report should cover the topics listed.

Chapter 1: Problem statement

Introduction, statement of the research problem or research question, background information about the problem/question area, explanation of why the problem/question is

important, purpose of the project, overview of the research methodology, summary of the remaining chapters.

Chapter 2: Literature review and topic development

In depth review of the problem/question including a review of the relevant literature and other secondary research sources. Development of background needed for research.

Chapter 3: Research and analysis

Description of your primary research methodology, the data you gathered, your analysis of the data, your results, etc. Note: This material sometimes requires more than one chapter.

Chapter 4: Summary, conclusion, implications, and recommendations

Summary of your results. Your conclusion about your research problem or question. The implications of your conclusion. Recommendations for further research (optional).

Research Handbook

I have written a short "handbook" on how to do an 895 project in information systems or e-commerce. It is the "textbook" for the course and we will refer to it often during the semester. The current edition of the handbook is available at the following web site, but I expect to update it before the class begins: http://online.sfsu.edu/~rnick/handbook.pdf

Suggested Problem Areas

You can work in many areas in the information systems/information technology and electronic commerce fields. The following are some of the problem areas in which I am particularly interested. I have listed the problem areas by category. The topics range from managerial and organizational to technical. My expertise in the problem areas listed varies considerably so do not assume that just because an area is listed here that I know a lot about it. You do NOT have to select one of these problem areas. Following this list is a brief summary of my recent and current research projects and interests.

Information Systems

1. Wireless information systems
    a. Wireless applications taxonomy
    b. Wireless applications in specific industries (e.g., healthcare)
    c. Characteristics of wireless information systems
    d. Nomadic computing
    e. Impact of wireless on the enterprise\
    f. Wireless networks
2. Global information systems:
    a. Issues and needs at U.S.-based multinational corporations
    b. Issues and needs at non-U.S.-based multinational corporations
3. Collaborative computing:
    a. Collaborative applications
    b. Groupware
4. Database systems:
    a. XML databases and database management systems
    b. Object-relational databases
    c. Data warehouses, data marts, data mining
    d. Database design methodology
    e. Database design models (e.g., UML)
    f. Enterprise data management
5. Strategic information systems:

a. Identification of strategic information system opportunities
b. Alignment of business strategy and information systems

6. System development:
    a. Object oriented analysis and design
    b. Unified Modeling Language (UML)
    c. New application development methodologies

Electronic and Mobile Commerce

1. Electronic commerce systems
    a. Electronic commerce system architecture
    b. Electronic commerce system development methodology
2. Alignment of business strategy and electronic commerce system strategy
3. Global electronic commerce
    a. Electronic commerce in Europe
    b. Electronic commerce in Asia
    c. Comparison of electronic commerce in the U.S. with other countries
    d. Electronic commerce in other regions of the world
4. Mobile commerce
    a. Mobile commerce system architecture
    b. Mobile commerce applications and case studies
    c. Mobile payment
5. Industry specific electronic commerce
    a. Electronic commerce in the wine industry
    b. Electronic commerce in other industries
6. Adaptation of information system models and methodologies for electronic and mobile commerce systems

My Research Interests

My research interests revolve around five main areas. These are summarized here with some of the projects I have worked on recently or am working on currently. I am always interested in having students do projects in one of these areas and have given a few ideas for projects, but there are many more possibilities. I also have a document that I can give you with specific project ideas. For various reasons I do not want to post this document on the web but I will send it to you by email if you send me an email requesting it, or you can pick up a copy in my office.

Wireless/mobile systems. The principle area in which I am focusing my efforts right now is the wireless/mobile area, which includes mobile e-commerce (m-commerce). A few years ago I published a paper on issues in m-commerce and will be extending this research. I am working on a multi-national study of attitudes about mobile phone use in social settings and have published three papers related to this study. I am just starting a project in mobile systems in tourism. Recently I was involved in a project that investigated wireless technology in health care. I have been co-chair of sessions (called mini-tracks) at national conferences for the past several years on wireless mobile topics. I have been involved with a forum that focuses on wireless issues in the U.S. and Europe, and I was co-chair of a workshop on wireless strategy. I am very interested in having students do projects in the wireless/mobile area. These projects can be either technical or non-technical.

Electronic commerce. Professor Sengupta and I have been working for some time on a project to investigate e-commerce and the wine industry. This project was funded by a Business and International Education (BIE) grant from the U.S. Department of Education. You can find more

information about the grant and the projects in it by going to Professor Castaldi's web site. He was the overall director of the grant. Professor Sengupta and I would like to have several students do 895 projects in this area. There are many possible projects including, but not limited to, investigating how e-commerce is currently used in the wine industry (domestically or internationally), conducting case studies of specific e-commerce companies in the wine industry, examining how the wine industry views e-commerce, and investigating specific issues (ranging from regulatory issues to technical issues) related to e-commerce and the wine industry. There is even the possibility of looking into the use of wireless technology in this area. Our principle interest is B2B although projects can be done in B2C. I am also interested in e-commerce system models and have written a paper on this topic. Testing this model could be a project. An earlier 895 project analyzed e-commerce systems in certain European countries. I would be interested in having a student update this study and do a similar analysis of U.S. and/or Asia e-commerce systems and compare the results with the European data.

Global information systems. I have been working for some time on a project to investigate the alignment of a business's global business strategy and its global information systems. I have two papers published in this area that were the result of an 895 project a few years ago. An interesting project would be to investigate the alignment of e-commerce strategy and business strategy.

Database systems. I am interested in methodologies and models for database design. I have not published in this area yet, however. I am interested in having students do projects in this area. I am working with Professor Chao in trying to define new ways of viewing data in a database. We have published several papers already. This would be a fairly technical project. I am also interested in enterprise issues related to data management. This would be a non-technical project.

Collaborative applications and groupware. I have done some work investigating the characteristics of different collaborative applications and studied groupware that implements these applications. I have published a short paper describing a taxonomy of collaborative applications.

Project Proposals

The project for this class is a lot of work. The sooner you get started, the more likely you are to have a successful project. As soon as you have a project idea, you can see me about it in my office or send it to me by e-mail. You may want to discuss with me or send me several project ideas to get my feedback on each of them. Before I sign your proposal you will have to tell me three things:

1. The research problem or research question that you plan to investigate.
2. What you think your primary research methodology will be.
3. What you expect will be the result or outcome of your project.

After we have agreed on these things for your project, I will sign the proposal form for the Graduate Studies Office.

During the semester you should put more thought into your project and do some reading on it. You can meet with me during the semester to discuss your project if you want. By the end of the semester, you should have a much better idea of exactly what you are going to do.

During the break between semesters you should put considerable effort into your project. You should do background reading in your problem area to gain a better understanding of it. You should refine your project proposal until you have a clear understanding of what your problem is

and how you plan to investigate it. This preliminary work will make it much easier for you to finish your project on time.

E-mail
I will be using email to contact you often, so please check your email regularly. You should only send documents to me as text in the body of an e-mail message, not as attachments, unless I tell you otherwise.

Contact Information
Office: BUS 206D
Phone: 415-338-7477 (office), 415-338-2140 (IS Dept office)
E-mail: RNick@sfsu.edu
Web site: http://online.sfsu.edu/~rnick

In-person Office Hours
See my web site for my current office hours. You can also make an appointment to see me at a different, but mutually-convenient time.

Electronic Office Hours
You can contact me by e-mail at any time during the week, including days that I am not on campus. I view this time as office hours in the same sense as my in-person office hours, only held electronically.

Information Form
Please print and fill out the BUS/ISYS 895 Information Form on the next page and turn it in to me at the time you bring your proposal form to me to sign, or earlier. You can complete the form by hand.

BUS/ISYS 895 INFORMATION FORM

Name: _____ _____
(last name) (first name on SFSU records) (preferred first name if different)

E-mail Address: _____

Degree Sought: [ ] MBA [ ] MSBA **Enrolling in:** [ ] BUS 895 [ ] ISYS 895

Concentration:
[ ] Information Systems
[ ] Electronic Commerce
[ ] General MBA
[ ] Other: _____

Courses completed: Check all courses that you will have completed by the time you take 895. Only include GAP courses (i.e., courses other than 780s, 510, 512, 514, etc.).

[ ] ISYS 814	[ ] ISYS 812
[ ] ACCT 831	[ ] ISYS 863
[ ] FIN 819	[ ] ISYS 864
[ ] DS 856	[ ] ISYS 865
[ ] MKTG 860	[ ] ISYS 868
[ ] MGMT 842	[ ] ISYS 871
[ ] IBUS 815	[ ] ISYS 882
[ ] _____	[ ] MKTG 869
[ ] _____	[ ] _____

Have you passed the GET or BUS 514? ___ Yes ___ No

Courses schedule: List the courses you plan to take during the semester in which you take 895. Include day and time for each course.

Work schedule: If you plan to work during the semester in which you take 895, list your anticipated work days and hours.