

**COLLEGE OF COMPUTING AND INFORMATION  
DEPARTMENT OF INFORMATION STUDIES**

**IST 608  
Introduction to Research Methods  
Summer 2008**

Instructor:

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Office Hours: 1:00 to 30; Monday or Wednesday, otherwise via email only

Class Hours: Tuesday and Thursday 2:00 pm to 5:30 pm

**COURSE DESCRIPTION:**

This course is designed to give students a working knowledge of principle of research planning and design, research methodologies, research proposal and basic understanding of the role of statistical analysis and testing in the research process. The course will focus on the critical evaluation of research results through a consideration of appropriate statistical sampling, research design, testing and overall analysis. The main emphasis in the course will be quantitative research techniques; however there will be an opportunity to examine qualitative approaches as well. The course content will also provide the opportunity to evaluate published research within LIS. The students will not only experience addressing the fundamental nature of scientific research but will also create a research proposal as a group to demonstrate their understanding.

**OBJECTIVES:**

1. To demonstrate an understanding of the fundamental nature of the scientific research method as an approach to problem solving and evaluation through creation of a research proposal (often referred to as a problem statement).
2. To calculate basic descriptive statistics, and describe the purpose of bivariate and multivariate techniques in applied and theoretic research in the field LIS research;
3. Know how to analyze data through the use of computational formulae and a computerized statistical package (SPSS, Excel or other of student's choice).
4. Examine several basic research methodologies frequently used in the field of LIS research and apply one to the methodologies to your own research proposal (or problem statement).
5. To prepare a research/grant proposal that draws upon both research design and statistical knowledge gained in this class.

**TEXTBOOKS:**

- i. Charles H. Brase & Corrine P. Brase. **Understandable Statistics: Concepts and Methods**. 8th edition. D.C. Heath and Company, Lexington, MA, 2005. (We don't use the CD. There is an online help site for the book.)
- ii. Ronald R. Powell. **Basic Research Methods for Librarians**. 2d, 3d, or 4th edition. Ablex Publishing Corporation, Norwood, NJ.
- iii. Sproull, Natalie. **Handbook of research methods: a guide for practitioners and students in the social sciences**. 2003. 2<sup>nd</sup> Edition. Scarecrow Press Inc. ISBN-10: 0810844869

**CLASS MEETINGS:**

The course will meet twice a week for 11 weeks. As a result, the students are required to attend every single class.

**CLASS ATTENDANCE:**

Attendance will be taken each class.

**HOMEWORK:**

All work is due at the time assigned for each home assignment or group project. Late submission will have the grade reduced by 5 points if no previous permission for lateness was obtained from the instructor. The group final project will be handed in Word Document processed, double-spaced, single sided. For the group project proposal, an "MLA style" citation is required.

**MATERIALS:**

Each member of the class should bring a calculator, a highlighter, and some graph paper to each session.

**STUDENT PERFORMANCE EVALUATION:**

Students are evaluated based upon the following weightings:

- 20% Group Project
- 10% Homework assignments
- 40% Quizzes (2 announced quizzes worth 13.3% each and one unannounced quiz)
- 10% Participation in class (e.g., no points if I never hear your voice in class discussion)
- 20% Final exam

**SCALE:**

A	96-100
A-	90-95
B+	86-89
B	80-85
C+	76-79
C	70-75
D+	66-69
D	60-65
E	Below 60

**E-MAIL:**

Each student is expected to have an e-mail account for this class. Students will need to check e-mail at least once a week. This is also the best method for communicating with the instructor.

**SPREADSHEETS:**

This class does require the use of spreadsheets software for some statistical calculations. Students in the class are expected to have some familiarity with spreadsheets, completing one assignment in a spreadsheet package of their choice (with Microsoft Excel the default package for students without a preference.) Spreadsheet programs allow for univariate, bivariate, and multivariate analysis. The spreadsheet software is on many of the computers in University of Albany's Draper basement user room.

**INCOMPLETES:**

Examinations will only be given on the announced days. Students who do not attend class during quiz #1 or #2 will have their averages computed with a quiz grade of 0.0. Students who do not turn their group final project on time should expect their grades will be averaged with a paper grade of 60%. Late homework assignments lose 5 points at the discretion of the professor.

**PLAGIARISM AND CHEATING:**

Due to the intensive nature of this course, students are encouraged to form study groups and to work together on assignments. Learn by interacting with one another—support and help one another. However, quizzes will clearly be expected to reflect individual effort—you are expected to neither give nor receive assistance from anyone. As a policy for this course, plagiarism, self-plagiarism or cheating will result in a failing grade for the course. High standards of academic honesty will be upheld in this class at all times. Plagiarism (in writing or code) will result in a zero for the assignment in which the plagiarism occurred, a zero for the course and a referral to the Dean of Undergraduate Studies. After two referrals to the Dean's office for plagiarism, students are automatically referred to the Office of Judicial Affairs.

**CLASS COMFORT:**

Please turn off your cell phone. If absolutely necessary leave it on, but exit the room as quietly as possible (hard to do with the phone ringing somewhere in your backpack).

**GROUP ASSIGNMENT:**

During the course, the student will need to join with two students to develop their own research proposal. Outline for the proposal is found in page 5.

**WEEKLY COURSE OUTLINE: (Readings, Assignments to Hand In, In Class Quizzes)**

<b>Date</b>	<b>Topics</b>	<b>Read for Class</b>	<b>Homework Assignments</b>	<b>Turn in/Quiz</b>
July 7	Introduction	B&B: Chapters 1 and 2; Powell, Chapters 1 and 2		
July 9	Center and Spread; Spreadsheets and Grant Proposal	B&B: Chapters 2 and 3; Powell, Chapters 2 and 3	Homework assignment will be given after each class	
July 9	Introduction to probability	B&B: Chapters 4 and 5; Powell Chapter 4	Homework assignment will be given after each class	<b>First draft group outline proposal</b>
July 14	The Binomial Probability: Distribution and Related Topics	B&B: Chapter 5	Homework assignment will be given after each class	<b>First Quiz</b>
July 17	Normal distribution in data collection	B&B: Chapters 6, Sproull pp. 262-270	Homework assignment will be given after each class	
July 21	Estimation; analysis of data	B&B: Chapters 7, 8 and 9; Sproull Chapter 13	Homework assignment will be given after each class	
July 24	Hypothesis testing; plus proposals	B&B: Chapters 9 and 10 and Sproull Chapters 2 and 3	Homework assignment will be given after each class	
July 31	Validity and Reliability	Powell: Chapter 6; and Sproull, pp. 65-91;	Homework assignment will be given after each class	<b>Second Quiz</b>
Aug 4	Ethics, human subjects and institutional review	Read: Powell; Chapter 6 and Shamoo (2003). Chapter 9, 10, 11	Homework assignment will be given after each class	
Aug 6	Correlation, Regression; Research reports	B&B: Chapter 10; Powell: Chapter 11; Sproull pp. 152-155 and 294-296	Homework assignment will be given after each class	
Aug 11	Chi square and wrap up	B & B: Chapter 11	Homework assignment will be given after each class	
Aug 14	Summary		Homework assignment will be given after each class	<b>Final Exam plus Group Research proposal is due</b>

## FINAL PROJECT PROSPECTUS AND OUTLINE DESCRIPTION

The group project has three parts:

1. A **prospectus** for the project—one to two double-spaced pages.
2. An **outline** of the final paper which will summarize the major sections of your group paper, including literature themes, methodology, population, variables, budget, limitations, data collection, and data analysis methods, as well as a final section on hypothesized findings and future research.
3. A final written **proposal**—seven to ten double-spaced pages, plus letter, bibliography, and attachments as appropriate.

*Please note that in this proposal you WILL NOT collect data for your project. Second, the verb tense in your research proposal needs to be written in the future tense, and NOT past tense.*

### THE PROSPECTUS

In one to two double-spaced, typed pages, describe your research project that you might undertake and for which you are writing a grant proposal. You will choose any population and any data gathering method(s), even if really doing the project would be too costly in time, talents, or funds. Keep in mind that one section of the paper is for a project budget. You may want to select a topic (as close as you can) that will really be your research project for a project at your work/internship.

The prospectus should include:

- The research problem and question(s). Why does this research need to be done? What light will it shed on what information science problem theoretic or practical?
- At least two research projects (based upon journal articles) that have already addressed this or a related issue. What theory have these research projects drawn upon? What questions did they address? How will your research be similar or different to these? Please cite these journal articles appropriately in the text of your prospectus, and give complete citations in footnotes or endnotes.
- Proposed population. You will need to address the question who is your population and why you have chosen this population?
- List of the variables that you will probably measure in your research.
- Proposed methods that you will use to collect and analyze your data.
- Strengths and limitations of this research and possible future, follow-up research.
- A one-paragraph section on what you expect your research to find (although you might be surprised).

### THE OUTLINE:

The outline will follow the format of “The Paper” below, requiring 2 to 3 **double-spaced** pages of headings that define the organization of your paper at this stage of your thinking. Thus:

- the outline for a letter to the agency from which you are asking for money
- a working title
- a three-part abstract (one paragraph with three parts: problem, methodology, selected hypothesized findings)

- a statement of the research problem including themes from the literature
- a statement of the purpose of your research
- a statement on why the agency would want to fund this research
- a methodology outline including your proposed population, sample, list of variables and measures, data collection, and data analysis
- strengths and limitations of your study
- strengths and limitations of the method you are using to collect data
- a start at the budget
- subheadings for hypothesized findings
- subheadings for future research
- your bibliography of ten (minimum) articles for the literature review
- appended measurement instrument(s) are optional at this point although your group **MUST** have one in the final paper.

### **FINAL PAPER DESCRIPTION AND CHECKLIST**

In order to help you and your group with the preparation of the final copy of your group research proposal, the following checklist highlights required items for that paper. The group does not need to turn this checklist in at the end of the semester. Use it to keep track of your group project.

\_\_\_\_\_ 1. **Letter** to the institution that sent out the RFP (request for proposal). This will be one page, single spaced, introducing yourself, your project, the final budget amount, and some rationale about why you have selected this institution. Your group may find an actual organization that grants funds or make one up.

\_\_\_\_\_ 2. **Title** that reflects the research being conducted.

\_\_\_\_\_ 3. 200 word **abstract** in one paragraph including problem, method, hypothesized findings. An abstract of the proposed research (approximately 200 words). This should be one or two paragraphs and single-spaced.

\_\_\_\_\_ 4. **Statement of the research problem**--what you want to clear up, discover, prove. A statement of the research problem including a statement of themes and theory that are associated with the problem.

\_\_\_\_\_ 5. **Purpose statement**. You could do a single purpose or multiple bullets of purposes. This section should state why you believe the funding institution should give you money to complete this project—the “so what?” of the paper.

\_\_\_\_\_ 6. **Literature review**. This will be the area to cite at least ten research articles that form background and basis for your research—from your bibliography. Use the articles to support points made in your statement. Your final description needs to divide the literature review into subject areas, theoretic areas, and avoid "he/she said" paragraphs. Remember: each subject area should have a separate heading in your final paper.

- \_\_\_\_\_ 7. **Methodology** section that includes
- a. Population: a description of the population under study and why it was chosen
  - b. Sample and sampling method including why this sample was chosen
  - c. Human subjects review considerations and accommodations
  - d. Variables and how they will be measure (with each variable mapped to survey or interview questions
  - e. Data collection method(s)
  - f. Data analysis methods

Items (a) through (e) will each have their own subheadings in the methodology section.

\_\_\_\_\_ 8. **Strengths of your proposal study.** Here you can include issues of bias, validity and reliability. Discuss issues with the work that you propose to do.

\_\_\_\_\_ 9. **Limitations of your proposal study.** Here you can include issues of bias, validity and reliability. Discuss issues with the work that you propose to do.

\_\_\_\_\_ 10. **Strengths of your method(s).** Here you should discuss the strengths of surveys, interviews, focus groups, or whatever method you are using to collect data.

\_\_\_\_\_ 11. **Limitations of your method(s).** Here you should discuss the limitations of surveys, interviews, focus groups, or whatever method you are using to collect data.

\_\_\_\_\_ 12. **The budget.** This is the dollar amount that you are asking for cost in time, labor, and materials to complete this project. This is the spreadsheet of costs with formulas that add up the columns (with some attention to the visual appeal) that you created for problem set #4. Include it as a table, with discussion, in your final paper.

\_\_\_\_\_ 13. **Hypothesized findings** should deal with your educated appraisal of what you will find (based upon your readings, the theories of others, and your knowledge of the subject area). In an actual research paper, reporting findings, the hypothesized findings would be up front in the form of null and research hypotheses that you were testing either qualitatively or quantitatively.

\_\_\_\_\_ 14. **Future research possibilities** (if you or someone else were doing it)

\_\_\_\_\_ 15. **Bibliography** of at least 10 articles you referenced in your literature review.

\_\_\_\_\_ 16. **Appended materials** such as (you MUST have at least one collection instrument):

- a. draft survey instrument or
- b. interview script or
- c. letters to potential interviewees etc.

## REFERENCE:

Brown, Amos and Mink. *Statistical Concepts: A Basic Program*. 3rd edition. New York: Harper & Row, 1994.

Dillon, M. and Wenzel, P. Retrieval Effectiveness of Enhanced Bibliographic Records. *Library Hi Tech*, 31(3): 43-46.

Katzer, Cook and Crouch. *Evaluating Information: A Guide for Users of Social Science Research*. 3rd edition. New York: McGraw-Hill, Inc., 1991.

"What research tells us about the importance of school" *Teacher Librarian*. Oct. 2002:76(3). InfoTrac: Expanded Academic ASAP

Neuman, W.L. *Social Research methods: Qualitative and Quantitative approaches*. Pearson company: New York, 2006.

Shamoo, Adil E. *Responsible conduct of research*. Oxford University Press, Inc. 2003.

Trochim, William M. K. *The Research Methods Knowledge Base*. . 2<sup>nd</sup> edition. Cincinnati, OH: Atomic Dog Publishing, 2001. ISBN 0-9701385-9-8

Williams, Frederick. *Reasoning with Statistics: How to Read Quantitative Research*. 4th edition. New York: Harcourt Brace Jovanovich, 1992.

## RESERVE READINGS

Grazier, M. H. "Critically Reading and Applying Research in School Media Centers," *School Library Media Quarterly*10:135-146, 1982.

Hartwig and Dearing. *Exploratory Data Analysis*. Beverly Hills, CA: Sage Publications, 1979, pp. 9-31.