

In My Opinion: Introduction to Designing, Conducting and Analyzing Surveys
STA 1220
Fall 2015

Course Description:

This course teaches the methods and concepts behind creating and conducting surveys and the statistical tools needed to analyze data gathered from them. Students will participate in data collection from different sources for individual- and class-designed surveys. Analysis of survey data is carried out using survey methodology software.

Surveys are a common tool for making decisions in a variety of settings: government policy (where should tax dollars be spent?) marketing (which tastes better, Coke or Pepsi?) and tracking public opinion (who will you vote for?), to name a few. Poorly designed surveys lead to embarrassing negative publicity, while good surveys help individuals, businesses and governments plan and operate efficiently. In this class, we will discuss historical surveys (both good and bad), learn the statistical methods needed to analyze data from a variety of different types of surveys, and how to interpret these results. We will generate our own surveys and analyze them using software.

Lecture: Monday, Wednesday 9:05 – 9:55, HCB 215

Recitation: Friday 9:05 – 9:55, HCB 313

Instructor: Eric Chicken, OSB 210 A
Office hours: TBA

Teaching Assistant: Jeffrey Nielson
Office hours: TBA

Text: *How to Conduct Surveys*, Arlene Fink, 5th edition

Supplemental Text: *Sampling: Design and Analysis*, Lohr.

Prerequisites: None.

Course Objectives: This course is designated as both a *Scholarship in Practice* course and a Liberal Studies course in the area of *Critical Analyzers of Quantitative and Logical Claims*.

Scholarship in Practice Objectives. By the end of the course, students will demonstrate the ability to:

- SIP1. select, critically evaluate, and apply relevant areas of scholarship to produce an original analysis, project, creative work, performance or other scholarly work that reflects a body of knowledge relevant to the course;
- SIP2. articulate the process of producing a work, from initial plan, to critique, revision, and completion;
- SIP3. critique existing applications of scholarship in order to learn from past success and failures.

Critical Analyzers of Quantitative and Logical Claims Objectives. By the end of the course, students will demonstrate the ability to:

- Q1. analyze and address problems drawn from real-world scenarios by applying appropriate mathematical, statistical, logical, and/or computational models or principles;
- Q2. interpret and evaluate data and information as presented in a variety of modes (such as tables, graphs, and charts), using appropriate technology. They will also be able to clearly communicate a summary of their findings to peers.

More specifically, students will meet the general objectives SIP1 – SIP3, Q1 and Q2 above by demonstrating the ability to:

- (a) identify historically famous “good” and “bad” surveys and evaluate their conclusions;
- (b) name and give a description of the different types of surveys in common use;
- (c) list and describe the steps in the process of making a valid survey
- (d) enumerate the uses surveys are put to in everyday practice;
- (e) select a suitable sample of respondents for different types of surveys;
- (f) state the restrictions sampling places on interpretation of surveys;
- (g) write unambiguous survey questions related to a topic of interest;
- (h) gather informal survey data;
- (i) perform appropriate statistical analysis of survey data;
- (j) present the conclusions derived from a survey analysis.

These objectives will be evaluated via weekly quizzes and a written project.

Course Assignments and Evaluation:

There will be 15 weekly quizzes. Each quiz is worth 5% for a total of 75% of the course final grade. The final exam period may be used to replace a missing quiz for students with less than 15 quiz scores. The quizzes will reflect the general objectives SIP2, SIP3, Q1 and Q2 through the specific objectives (a) – (j):

<u>General Objective</u>	<u>Specific Objectives</u>
SIP2	(c)
SIP3	(a)
Q1	(b), (d), (i)
Q2	(f), (j)

Each student will complete a course written project. The project is worth 25% of the final grade and is described in more detail below. The project will be evaluated via objectives Q1, Q2 and SIP1. In addition, the final project will place special emphasis on the *presentation* of the analysis in objectives Q2 and (i). A rubric for the project is provided on page 4 of the syllabus.

Homework will be regularly assigned in support of the quiz and project material, but not collected. The quizzes will reflect the material practiced in homework assignments and material presented in class.

Project: Each student will create, conduct and analyze a survey. These surveys will follow a simple random sample design. Each survey will have one question of overall interest and several demographic questions. The student will gather the survey data informally from acquaintances. This written project must include:

- (1) a detailed description of the survey's goal;
- (2) a list of the questions related to the goal in (1) asked on the survey;
- (3) tabulation and description of the survey data collected;
- (4) a statistical analysis of the data, including the appropriate output from software;
- (5) interpretation of the results from the statistical analysis.

The course project is due in the final week of the class. However, it is expected that students will work on the project throughout the semester. To this end, milestones have been set to keep students on track. Only the final milestone is required, but students are strongly encouraged to keep to the schedule for the remaining milestones.

Milestone A	Question design complete	End of week 5
Milestone B	Data collection complete	End of week 7
Milestone C	Data analysis complete	End of week 13
Milestone D	Final written project due	End of week 15

The grading of the project is based on the rubrics on page 4.

Project Rubric

Competency SIP1	<i>students will be able to...</i> select, critically evaluate, and apply relevant areas of scholarship to produce an original analysis, project, creative work, performance or other scholarly work that reflects a body of knowledge relevant to the course;	Subscore: (Avg of 3, 6, 7, 8, 9 below)
Competency Q1	analyze and address problems drawn from real world scenarios by applying appropriate mathematical, statistical, logical, and/or computational models;	Subscore: (Avg of 1, 2, 3 below)
Competency Q2	interpret and evaluate data and information as presented in a variety of modes (such as tables, graphs, and charts), using appropriate technology. They will also be able to clearly communicate a summary of their findings to peers.	Subscore: (Avg of 4, 5, 8 below)

		High Achievement	Specific Objectives	Score (1 – 4)	Comments
1	Model Choice (Q1)	Addresses real world questions by choosing the correct statistical analysis technique that leads to meaningful solutions.	(b), (d)		
2	Assumptions (Q1)	Correctly states and verifies the assumptions for the chosen statistical analysis are met.	(i)		
3	Analysis (Q1, SIP1)	Produces clear statistical results from tabular data and computer data sets. An effective answer to the problem can be inferred from chosen statistical techniques.	(i)		
4	Interpretation (Q2)	Correctly interprets the results of a statistical analysis in clear and precise terms which may be understood by experts and non-experts alike. Results are stated in the context of the problem.	(j)		
5	Communication (Q2)	Clearly communicates a summary of the results of a statistical analysis to peers. The technical level is appropriate for the intended audience.	(j)		
6	Existing Knowledge and Viewpoints (SIP1)	Synthesizes in-depth information from relevant sources representing various points of view.	(e), (h), (i)		
7	Topic Selection (SIP1)	Identifies a creative, focused, and manageable survey that addresses potentially significant yet previously less-explored aspects of the discipline.	(e), (g)		
8	Conclusions (Q2, SIP1)	States a conclusion that is a logical extrapolation from the inquiry findings.	(j)		
9	Limitations and Implications (SP1)	Insightfully discusses in detail relevant and supported limitations and implications of the completed project.	(f)		

Course schedule:

<u>Week</u>	<u>Topic</u>	<u>Milestone</u>
1	Historical Surveys	
2	Types and Uses of Surveys	
3	Designing Survey Questions	
4	Bias and Errors in Surveys	
5	Sampling I	A
6	Sampling II	
7	Means and Proportions	B
8	Variances	
9	Confidence Intervals	
10	Tests I	
11	Tests II	
12	Interpreting and Presenting Results I	
13	Interpreting and Presenting Results II	C
14	Surveys I	
15	Surveys II	D
16	Makeup Quiz (optional)	

Course Website:

All pertinent information for this class will be posted on the course website at <http://campus.fsu.edu>. Go to this site for homework assignments, class announcements, important dates, etc.

Software:

We will use Excel in the course. Instructions on using Excel will be provided in class.

Liberal Studies and Scholarship in Practice:

The *Liberal Studies for the 21st Century Program* at Florida State University builds an educational foundation that will enable FSU graduates to thrive both intellectually and materially and to support themselves, their families, and their communities through a broad and critical engagement with the world in which they live and work. Liberal Studies thus offers a transformative experience.

This course has been approved as meeting the **Liberal Studies** requirements and thus is designed to help you become a critical analyzer of **quantitative and logical claims**.

This course has also been approved as meeting the requirements for **Scholarship in Practice** and thus is designed to help you become a flexible thinker, a productive member of society, and an independent learner.

In order to fulfill the State of Florida's College mathematics and computation requirement the student must earn a "C" or better in the course

University Attendance Policy:

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Academic Honor Policy:

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>.)

Americans With Disabilities Act:

Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
sdr@admin.fsu.edu
<http://www.disabilitycenter.fsu.edu/>

Free Tutoring from FSU:

On-campus tutoring and writing assistance is available for many courses at Florida State University. For more information, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options at <http://ace.fsu.edu/tutoring> or contact tutor@fsu.edu. High-quality tutoring is available by appointment and on a walk-in basis.

These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

Syllabus Change Policy:

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.