PSY 315: Behavioral Sciences Statistics

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Behavioral Sciences 109

Fall 2005 MWF 11:00a-11:50a Henry Hall 121

OFFICE HOURS: MW (3p-4p), F (noon-1p) Alternate times available by appointment only.

COURSE PREREQUISITES: None.

COURSE/CATALOG DESCRIPTION:

Introduction to the methods and rules for organizing and interpreting observations; descriptive and inferential statistics, including frequency distributions, hypothesis testing, simple analysis of variance, estimation, and Chi-Square. This course develops and assesses the skills and competencies for the program student learning outcome of the Scientific Method and its Application in the Field of Psychology.

The purpose of this course is to provide students with the fundamental building blocks necessary to conduct and analyze statistical research. Social science research, or the study of people and things around us, consists of many different parts—statistics is just one of these parts, albeit a very important one.

Ever-increasingly, functioning in today's society requires individuals to be proficient in interpreting and conducting statistical research; this course will enable students to become more skilled in these areas which by today's standards are not considered to be so technical anymore. Specific material to be covered throughout the course include: the analysis, presentation and interpretation of descriptive statistics including, measures of central tendency and variability, probability, sampling; and the analysis, presentation and interpretation of inferential statistics including items such as, t-tests, analysis of variance, significance, correlation, and regression analysis.

This course is the first of a two-part sequence in behavioral sciences research required of all majors in Psychology. The sequence intends to introduce the student to behavioral & social sciences research methods (i.e., research design and statistical analysis of data). In PSY 315, students will be introduced to the basics of data measurement, descriptive and inferential statistical techniques used to analyze research data, and proper interpretation and write-up of results.

The analysis of statistics is dictated by being able to manage and process data through the use of computers. Much of our understanding of the current world through statistics is just a button-click away, whereas a few decades ago, these same types of functions would have taken days and even weeks to perform. Thus, in order to better understand statistical methods, these concepts will be introduced in conjunction with statistical software. The "Statistical Package for the Social Sciences" (SPSS) software will be used for analyzing & interpreting quantitative data.

Students will create their own survey instrument in order to provide a hands-on experience in survey methods; the collected data will also serve as a backdrop for statistical analysis assignments using the SPSS program.

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will have a demonstrable understanding of:

- 1. The difference between populations and samples, and what is associated with each in terms of research issues and statistical techniques.
- 2. Variables types and levels of measurement.
- 3. The various types of descriptive statistics used in social science research, and how to produce these types of statistics in order to summarize and analyze data.

- 4. The various statistics and techniques used to assess relationships between variables.
- 5. The use and proper application and interpretation of inferential statistics in conjunction with hypothesis-testing.
- 6. The proper presentation and interpretation of data in graph and table form.
- 7. The application of SPSS in terms of proper data entry, coding of variables, performing statistical functions, and producing output for analysis.
- 8. The methods of writing-up research results in a logical manner and in a suitable format for the social sciences.

MARIANIST EDUCATIONAL VALUES

The five characteristics of a Marianist Education are:

1. Educate for Formation in Faith

Catholic Universities affirm an intricate relationship between reason and faith. As important as discursive and logical formulations and critical thinking are, they are not able to capture all that can be and ought to be learned. Intellectual rigor coupled with respectful humility provide a more profound preparation for both career and life. Intellectual rigor characterizes the pursuit of all that can be learned. Respectful humility reminds people of faith that they need to learn from those who are of other faiths and cultures, as well as from those who may have no religious faith at all.

2. Provide an Excellent Education

In the Marianist approach to education, "excellence" includes the whole person, not just the technician or rhetorician. Marianist universities educate whole persons, developing their physical, psychological, intellectual, moral, spiritual and social qualities. Faculty and students attend to fundamental moral attitudes, develop their personal talents and acquire skills that will help them learn all their lives. The Marianist approach to education links theory and practice, liberal and professional education. Our age has been deeply shaped by science and technology. Most recently, information and educational technologies have changed the way faculty and students research and teach. At Marianist Universities, two goals are pursued simultaneously: an appropriate use of information technology for learning, and the enhancement of interaction between students and teachers. As Catholic, Marianist Universities seek to embrace diverse peoples and understand diverse cultures, convinced that ultimately, when such people come together, one of the highest purposes of education is realized: a human community that respects every individual within it.

3. Educate in Family Spirit

Known for their strong sense of community, Marianists have traditionally spoken of this sense as "family spirit." Marianist educational experience fosters the development of a community characterized by a sense of family spirit that accepts each person with loving respect, and draws everyone in the university into the challenge of community building. Family spirit also enables Marianist universities to challenge their students, faculty and staff to excellence and maturity, because the acceptance and love of a community gives its members the courage to risk failure and the joy of sharing success.

4. Educate for Service, Justice, and Peace

The Marianist approach to higher education is deeply committed to the common good. The intellectual life itself is undertaken as a form of service in the interest of justice and peace, and the university curriculum is designed to connect the classroom with the wider world. In addition, Marianist universities extend a special concern for the poor and marginalized and promote the dignity, rights and responsibilities of all people.

5. Educate for Adaptation to Change

In the midst of rapid social and technological change, Marianist universities readily adapt and change their methods and structures so that the wisdom of their educational philosophy and spirituality may be transmitted even more fully. "New times call for new methods," Father Chaminade often repeated. The Marianist university faces the future confidently, on the one hand knowing that it draws on a rich educational philosophy, and on the other fully aware for that philosophy to remain vibrant in changing times, adaptations need to be made.

Selected from *Characteristics of Marianist Universities: A Resource Paper*, Published in 1999 by Chaminade University of Honolulu, St. Mary's University and University of Dayton

Each of these characteristics is integrated, to varying degrees, in this course.

READING MATERIALS:

Gravetter & Wallnau. Essentials of Statistics for the Behavioral Sciences, 5th ed. Wadsworth. 2005.

Kirkpatrick & Feeney. <u>A Simple Guide to SPSS for Windows: For Versions 12.0 & 13.0</u>. With the Student Version of SPSS 12.0 CD. Wadsworth. 2005.

Additional required reading material will be assigned throughout the term.

COURSE APPROACH:

This course will be presented using a variety of methods, primarily through lecture, group discussions and exercises, and group/individual presentations. The course will employ instructional aids like PowerPoint and other audio/visual material.

COURSE REQUIREMENTS:

- **Eight (8) written assignments.** These assignments will range between 1-3 pages. The assignments will generally focus on interpretation and analysis of data performed using SPSS. Assignments are due every two weeks and will correspond with materials covered in class the week before. The assignment will be handed out during the week in which the materials are covered. Assignments, unless noted otherwise, must include the SPSS printout associated with the analysis and interpretation. Write-up of results must be typed and formatted.
- Seven (7) quizzes. These quizzes are non-cumulative and will be administered every two weeks and will usually cover two chapters of material at a time.
- Three (3) exams. These exams are non-cumulative and will only include materials covered in the specified sections. The exam contents will correspond highly with materials covered and tested in the quizzes.
- **Regular class attendance.** As a policy, if a student misses <u>4</u> classes throughout the term, a deficiency notice will be sent to the registrar's office. In cases where <u>4</u> absences occur, it will result in one of two consequences: (1) a grade deduction of, but not limited to, <u>one full letter grade</u> or (2) for those with extenuating circumstances, an incomplete (to be made up no later than 30 days after the final exam). "Extenuating circumstances" will be determined on a case-by-case basis, but the standard for this sort of exception is considered as circumstances beyond one's control (e.g., medical illness, family emergency). In such cases, you will be asked to provide appropriate documentation to support your absence(s).
- Regular classroom participation. Besides simply coming to class, students will be asked to
 contribute to lecture, group discussions and exercises, and informal presentations. Contributions
 to group and individual in-class exercises will be assessed through participation (e.g., extent and
 depth of discussion), completeness of in-class work turned in, etc. This also means that students
 will come to class prepared, being able to respond to questions posed from the instructor.

TERMS OF COURSE REQUIREMENTS:

- 1. Late assignments/projects will be discounted 10% per day after the due date. All late assignments must be turned in within **1** week, otherwise loss of **all** credit will occur.
- 2. Unless otherwise specified, assignments are due at the beginning of class.
- 3. *Exams are to be taken on the days that they are administered.* Exceptions are to be granted only in extenuating circumstance, otherwise loss of all credit will occur. If you are given the opportunity to take an exam after given in class, you will be given a different exam which may be more comprehensive than the initial one given.

- 4. Regular attendance is a must given the amount of material covered in the course. Four absences or more, not including medical emergencies, etc., will incur a minimum letter-grade reduction (the more absences up and beyond four, will affect your grade further in terms of lost letter grade). If you know you will be missing a class in the future due to legitimate reasons, be sure to tell me in advance and provide any necessary paperwork; this will allow me to keep you up-to-date on material you will be missing.
- 5. Students will be expected to have read materials prior to each class session and completed appropriate assignments. It is especially important that students read and do work outside of the classroom due to the breadth of materials covered in such a relatively short period of time. *Inclass quizzes may be administered periodically in order to assess progress and attention given to weekly readings/exercises.*
- 6. I have an open-door approach when it comes to helping students understand the material and do well in the course. If you would like to meet with me, visit me during my office hours or call/e-mail me to set up an appointment for an alternative time if those hours don't work for you. DON'T HESITATE to talk to, call, or e-mail me!
- 7. Any instances of academic dishonesty will result in an "FD" (failure for dishonesty) grade for the course and will be subject to the policies and procedures for the college. If you are at all unclear about what constitutes academic dishonesty, refer to catalogued materials.
- 8. As a policy, opportunities for extra credit WILL NOT be available. All students begin the course with perfect scores, and will have every opportunity to maintain this score.
- 9. Chaminade will provide assistance for any student with documented disabilities. Any student who believes he/she may need accommodations in this class must contact Dr. Don Kopf, 735-4845 or Dr. June Yasuhara, 739-4603, at the Counseling Center (office next to Security) in order to determine if the student meets the requirements for documented disability in accordance with the Americans with Disabilities Act. It is important to contact them as soon as possible so that accommodations are implemented in a timely fashion.
- 10. The instructor reserves the right to change the schedule of the syllabus when deemed necessary.

CLASSROOM ETIQUETTE

In general, have respect for your fellow students, the instructor, guest speakers, and the learning process. All behaviors and actions are magnified in a small classroom environment. The following "rules of engagement" outlines some expected and unacceptable student conduct in this classroom:

- 1. Disruptive Talking: In addition to you, the person you are talking to, others around you, and I are also privy to conversations you have while class is going on. Believe me, I can hear talking all the way up at the front of the classroom. I am teflon and these things usually don't stick to me, but if I can hear it, the others around you will definitely hear it. Do not make me talk over you or be disrespectful of others who are trying to listen to lecture, watch videos, and/or present materials. Hint: if you are talking in class while I or one of your classmates is going over or watching class material and I look at you in an acknowledging way (raising my eyebrows or giving you a nod), this means that I can hear you or you are being disruptive. Don't get me wrong, processing materials with others around you is totally acceptable, but if you feel the need to share your ideas, write it down or do the quick "lean, look, and whisper" method. If you're not into the material on that day, remember that looking interested is the next best thing to actually being interested.
- 2. Moaning & Groaning: If I had a dollar for every time I heard someone sigh, roll their eyes, or ask "do we really have to do this?" when it came to doing some sort of classroom activity, I'd probably be ten years closer to retirement. I'm not telling you that you have to love every thing we do in class or how we go about doing it, but give it a chance. If you complain or are negative, you've set the wheels in motion for a self-fulfilling prophecy that is, you say or think "I'm not going to like this" or "this is stupid", and you ultimately end up not liking it or feeling that it was stupid. Your

negativity will often rub off on others in the class and will make me really sad (okay, I'm exaggerating on the second part, but I honestly will probably be a little perturbed). Hint: Don't complain or be negative, give things a chance. At a minimum, don't let me hear you complain or be negative (see the above rule on the "lean, look, and whisper" method). One way to kind of complain while still looking positive is suggesting that we approach a certain classroom activity or exercise in a different manner – who knows, I might just take you up on your suggestion.

- 3. Cell phones, Newspapers, MP3 players, PDAs, etc: Before class OK, after class OK, but during class NOT OK. If you're able to pull off some sort of James Bond-MacGyver trick, more power to you, but just remember that I am a former CIA operative and will usually root out and foil such attempts. As in the first rule, if I look at you in an acknowledging way while you're doing something like this, it means that you've been made and you'll either be arrested and imprisoned or turned into a snitch (not really, but don't make me think of something to do to address it). Hint: Don't do it.
- 4. Tiredness, Exhaustion, & Sleepiness: I'm a firm believer in being in class under any circumstances. But, understandably, some of us are burning the candle at both ends with other classes, work, family, boyfriends/girlfriends, and having a life outside of school. I will try to keep you up, but sometimes even myself or even an intravenous feed of caffeine wouldn't do the trick. Hint: Try to keep your head up the "concentrating hard on your notes" method is a good approach. I don't want you to hurt yourself, so if you think you're going to fall over or knock yourself out on your desk, sit in the back of the room and rest your head (I do not suggest snoring or drooling though since it could lead to an embarrassing situation for you).
- 5. Maid Service, Hunger & Thirst: I won't say much about this except to clean up after yourself when you leave the classroom. Universities across the country, including Chaminade, have jumped on the latest fad of trash cans; they are your friend. Adhere to the famous words of Woodsy the Owl, "Give a Hoot, Don't Pollute." And about food, bringing in something that you'd eat in a cafeteria or a restaurant probably isn't smart; you may be asked to share since we're all probably hungry (me especially) and your fragrant food could distract us enough to knock you down and take it from you.
- 6. Taking Exams & Doing Your Own Work: Employ the "prison food", "Seabiscuit" and "bobbing bird" methods. Hint: Don't test my secret CIA operative training. I've seen it all, so unless you've come up with some new technique, I'd suggest you not risk it. Take your own exam, write your own papers, and do your own work; don't cheat yourself! Remember, too, as easy it is for someone to lift stuff off the internet, it's just as easy for someone to check for originality off the same internet. I also keep copies of past papers, so don't go there either.





8 QUESTIONS NOT TO ASK A PROFESSOR (BORROWED AND ADAPTED FROM NATALIE GRINNELL, WOFFORD COLLEGE)

1. Did I miss anything important in class?

The problem with this question is that it implies that classes aren't always "important." Please try to remember that professors plan and work hard when designing a course; if you want to have a productive relationship with them, you should at least pretend to appreciate this work by assuming that every class and every class activity is important.

A better way to phrase this question is: "Did we do anything not covered by the syllabus that I need to make up?"

2. Could you tell me what we did in class?

When you put it this way it sounds as if you are asking your professor to re-teach the class, privately, for your benefit. Many professors will be hurt by this attitude; it implies that you have a lack of respect for the value of their time and energy.

If you miss a class, you should make sure you have completed any assigned reading or writing, then find another student in your course who is willing to give you his or her notes. Then, you go to your professor and politely ask for copies of any missed handouts. After checking the syllabus and the notes, you can ask to meet to ask questions about things that you don't understand.

Some professors provide copies of their class notes, either on-line or at the library, but you should remember that you don't have the right to expect this from every professor. Some consider effective note-taking a skill that you should acquire.

3. Will this be on the exam? or Can you tell us what's going to be on the exam?

This question is the universal joke among professors; we're well aware how the pressure of competition combined with outright disinterest produces students more interested in scoring well than learning. But we love our work and our subjects, and it's frustrating to be confronted by students who neither share that love nor respect those who do.

With the exception of jokes or anecdotes, you should learn everything your course covers, <u>unless</u> <u>your professor specifically tells you that certain material is not important</u>. You *may* ask about the format, length, or conditions of the exam.

4. My plane flight/ride home/family vacation is scheduled on "X", so is it possible for me to take the final exam early?

There are professors who are willing to re-schedule exams for this reason, but some do not. Here are the reasons why:

- a. Giving more than one exam for the same course requires the professor to make up an entirely new version of the test; it would be irresponsible not to, and I don't have that much extra time during finals week.
- b. Most students would like to take all of their exams early and go home. It seems unfair to let random numbers of students move their exams at will, while others cannot due to conflicts.
- c. The conditions of the exam should be equal for everyone, and if that includes being tired or frustrated at the end of the week, then at least everyone is in it together, and no one has an advantage.
- d. Social plans are supposed to be made around obligations, such as school.

If a professor does agree to move an exam, you should be properly grateful--and you shouldn't try to use this favor to manipulate another professor into doing the same thing.

5. I have two exams scheduled on the same day. Can I take yours at another time?

I know this circumstance seems overwhelming to some of you, but to be old-school about it, I worked multiple jobs as an undergraduate and frequently had multiple exams and papers due in one day, too. What I discovered is that this is only a major problem if you have not retained knowledge throughout the semester, but are only learning it the few days before the exam. Since the point of exams is not to test how much you can learn in a week, but how much you have learned over the semester. It is advised to not employ the "binge and purge" technique; it's painful and you'll ultimately be left unsatisfied.

6. I really need to bring up my G.P.A.; which of these professors is the easiest?

Any professor who calls another professor's course "easy" is insulting a colleague. Any student who takes a course to boost his or her G.P.A. could insult an instructor and, at a minimum, shows that the student is not serious about learning.

Some students seem to think that being "honest" about things like this should be appreciated by professors (the other frequent "honest" admission is being too hung over to attend class or complete assignments). This type of "honesty" reveals a lack of respect for my profession and the belief that everyone should accept your behavior and laugh it off. Quite frankly, I'd rather you lie, but remember that I've heard almost every excuse so at least be original.

7. Is there anything I can do to raise my grade? Can I do extra credit?

It's not the question that's a problem, but its timing. Students usually come to me during the last three weeks of class, and are really asking for an extra assignment to make up for previous poor performance. Most professors will not give you extra credit when you have not demonstrated the ability to master the basic material. Such "extra" work is grossly unfair to the other students in your class.

If, however, you are disappointed with a grade on a paper or exam and don't understand how to improve, you should certainly come to your professor with questions. Phrase the question this way, "I would like to go over this assignment because I'm sure that I could do better next time if I understood where I went wrong." You may also ask for study hints or places to go for tutoring or extra help. Your professors will be glad to respond to these questions.

Occasionally, a student will call to "discuss" a grade after the semester is over. Unless the grade has been miscalculated (which sometimes happens--we all make mistakes), you cannot "raise" such a grade after the fact. Bottom line: show some concern during the entire semester, and not only when it's convenient to your case.

8. Professor "X" gave me a D on this paper; could you read it and tell me what you think?

You should never attempt to have one professor interfere with the way another professor handles his or her courses. If you have valid objections to the way a professor runs a course, the appropriate procedure is for you to first speak with the professor in question. If that fails to resolve the matter, take your objections to the Chair of the Department or the Academic Dean. You may also express your feelings on course evaluations.

GRADING SYSTEM:

The class will be graded on a curve, based on the highest score received on each exam, paper, presentation, participation, and attendance. For this curve, a standardized grading system will be used:

F = <65%

A = 93-100% (of highest point total received) B = 84-92% C = 75-83% D = 66-74%

Point Distribution & Scoring System:	% of Final Grade	Points	
8 Writing Assignments	32%	32	
7 Quizzes	28%	28	
3 Exams	30%	30	
Classroom Participation & Attendance	10%	10	
	100%	100	

As a policy, the curve for this class will not <u>exceed</u> a straight 90-80-70-60 curve. For example, if a student scores 100% on an exam, the curve will revert downward to a standard 90-80 . . . etc. curve. It will not be 93%/84%, etc. Based on overall class performance, the instructor will adjust the curve accordingly if anomalies occur.

COURSE SCHEDULE

Week	Date	General Topic	Read for Week
1	8/22	Introduction	G & W: Ch. 1
	8/24	Assignment #1 Due Friday, 8/26	K & F: Ch. 1
	8/26	No Class – Fall Spiritual Convocation	
~	8/29	Frequency Distributions	G & W: Ch. 2
2	8/31	• Quiz #1 on Friday, 9/2	K & F: Ch. 2
	9/2 9/5	No Class – Holiday (Labor Day)	
3	9/7	Measures of Central Tendency	G & W: Ch. 3
5	9/9	 Assignment #2 Due Friday, 9/9 	K & F: Ch. 3 & 5
	9/12		
4	9/14	Variability	G & W: Ch. 4
	9/16	• Quiz #2 on Friday, 9/16	K & F: Ch. 6
	9/19	z-Scores & Standardized Distributions	
5	9/21	• Exam #1 on Wednesday, 9/21 (Ch. 1-4)	G & W: Ch. 5 K & F: tba
	9/23	Assignment #3 Due Friday, 9/23	
	9/26	Probability	G & W: Ch. 6
6	9/28	• Quiz #3 on Friday, 9/30	K & F: tba
	9/30		
	10/3	Probability & Samples	G & W: Ch. 7-8
7	10/5	Constructing & Testing Hypotheses	K & F: tba
	10/7	Assignment #4 Due Friday, 10/7	
	10/10	No Class – Holiday (Discoverers' Day)	
8	10/12	Constructing & Testing Hypotheses (cont'd.)	G & W: Ch. 9
	10/14	• t Statistic	K & F: tba
	10/17	Quiz #4 on Friday, 10/14	
9	10/17	 t Test for Two Independent Samples Exam #2 on Wednesday, 10/19 (Ch. 5-9) 	G & W: Ch. 10
3	10/13	 Exam #2 on Wednesday, 10/19 (Ch. 5-9) Assignment #5 Due Friday, 10/21 	K & F: tba
	10/24		
10	10/26	t Test for Two Related Samples	G & W: Ch. 11
	10/28	• Quiz #5 on Friday, 10/28	K & F: tba
	10/31	Estimation	G & W: Ch. 12
11	11/2	• Assignment #6 Due Friday, 11/4	K & F: tba
	11/4		
	11/7	ANOVA	G & W: Ch. 13
12	11/9	Quiz #6 on Wednesday 11/9	K & F: tba
	11/11	No Class – Holiday (Veterans' Day)	
10	11/14	Two-Factor ANOVA	G & W: Ch. 14
13	11/16 11/18	Assignment #7 Due Friday, 11/18	K & F: tba
	11/10	Correlation & Regression	
14	11/23	Quiz #7 on Wednesday 11/23	G & W: Ch. 15
14	11/25	No Class – Thanksgiving Recess	K & F: tba
	11/28		
15	11/30	Chi-Square	G & W: Ch. 16
	12/2	Assignment #8 Due Friday, 12/2	K & F: tba

****FINAL EXAMINATION (Exam #3): Week of 12/5, Day & Time TBA****

DO NOT PUT YOUR NAME ON THIS PAPER

This is a questionnaire about how much knowledge or understanding of this subject that you think you have before taking this class. Please take the time to really consider each question and what it is asking.

You are not being graded on these questions and your responses are anonymous!!!! So, please answer the questions as truthfully as possible. You are not expected to have a lot of knowledge in this area at this point, so lack of knowledge is not a bad thing and will not count against you. Your responses will assist us in assessing the instructional outcomes for this course. We will revisit these questions at the end of the semester and you will be asked to reconsider these items then.

Please circle the number that best reflects how you feel about the following items.

	Please circle the number that best reflects now you feel about each statement.	Strongly Disagre e	Disagre e	Neutral	Agree	Strongly Agree
1.	I understand difference between populations and samples, and what is associated with each in terms of research issues and statistical techniques.	1	2	3	4	5
2.	I understand the variables types and levels of measurement.	1	2	3	4	5
3.	I understand the various types of descriptive statistics used in social science research, and how to produce these types of statistics in order to summarize and analyze data.	1	2	3	4	5
4.	I understand the various statistics and techniques used to assess relationships between variables.	1	2	3	4	5
5.	I understand the impact and extent of contemporary institutional responses to juvenile delinquency, like juvenile court adjudications and juvenile waiver.	1	2	3	4	5
6.	I understand the use and proper application and interpretation of inferential statistics in conjunction with hypothesis- testing.	1	2	3	4	5
7.	I understand the proper presentation and interpretation of data in graph and table form.	1	2	3	4	5
8.	I understand the application of SPSS in terms of proper data entry, coding of variables, performing statistical functions, and producing output for analysis.	1	2	3	4	5
9.	I understand the methods of writing-up research results in a logical manner and in a suitable format for the social sciences.	1	2	3	4	5

Post-Class Knowledge Assessment

DO NOT PUT YOUR NAME ON THIS PAPER

This is a questionnaire about how much knowledge or understanding of this subject that you think you have after taking this class. Please take the time to really consider each question and what it is asking.

You are not being graded on these questions and your responses are anonymous!!!! So, please answer the questions as truthfully as possible. Your responses will assist us in assessing the instructional outcomes for this course.

Please circle the number that best reflects how you feel about the following items.

Please circle the number that best reflects how you feel about each statement.		Strongly Disagre e	Disagre e	Neutral	Agree	Strongly Agree
1.	I understand difference between populations and samples, and what is associated with each in terms of research issues and statistical techniques.	1	2	3	4	5
2.	I understand the variables types and levels of measurement.	1	2	3	4	5
3.	I understand the various types of descriptive statistics used in social science research, and how to produce these types of statistics in order to summarize and analyze data.	1	2	3	4	5
4.	I understand the various statistics and techniques used to assess relationships between variables.	1	2	3	4	5
5.	I understand the impact and extent of contemporary institutional responses to juvenile delinquency, like juvenile court adjudications and juvenile waiver.	1	2	3	4	5
6.	I understand the use and proper application and interpretation of inferential statistics in conjunction with hypothesis- testing.	1	2	3	4	5
7.	I understand the proper presentation and interpretation of data in graph and table form.	1	2	3	4	5
8.	I understand the application of SPSS in terms of proper data entry, coding of variables, performing statistical functions, and producing output for analysis.	1	2	3	4	5
9.	I understand the methods of writing-up research results in a logical manner and in a suitable format for the social sciences.	1	2	3	4	5