PSYC6474 Scientific Research I
Classroom Class - Hardin 293
Wednesday 12:30 - 3:20 PM

New Orleans Baptist Theological Seminary
Church and Community Ministries Division

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The mission of New Orleans Baptist Theological Seminary is to equip leaders to fulfill the Great Commission and the Great Commandments through the local church and its ministries.

Class Blackboard - Students will be enrolled by the professor after class begins.

VERY IMPORTANT: If a student communicates with the professor by email, note clearly in the subject line the course name and the purpose of the message. Due to junk email, if the purpose of the email is not clear, the message may be deleted without ever being read.

This is a fast-paced course, students will need to be disciplined in their reading in order to keep pace with readings and lectures. Historically, students who achieve good grades and learn the major concepts of this course devote a minimum of 5 or more hours per week, are part of a study group, and complete the homework assignments. A lack of a strong history in math, algebra, or statistics has not been observed to place a student at a disadvantage in this course. The emphasis of this course is **NOT** memorizing formulas but on how to solve statistical problems using a statistical program named SPSS.

Course Description

This course is designed as a graduate-level study of statistics for research. Students learn how research proceeds from forming the research hypothesis through collection, organization, description, analysis, and interpretation of data. Measures of central tendency, dispersion, relative standing, linear regression, correlation and hypothesis testing are studied. Probability and decision making, sampling distributions, inferential statistics, decisions, error, power, independent and correlated groups, Oneway ANOVA, Two-way ANOVA, Multiple comparisons: Scheffe's Test and Tukey's HSD, interaction between levels, multiple regression, Chi Square, and randomized block designs are examined.

This course is prerequisite to PSYC6475 Statistics II and PSYC6278 Appraisal of the Individual. This course is also designed for students who plan to pursue the Ph.D. degree.

Core Values:

The seminary's core values are: (1) doctrinal integrity, (2) spiritual vitality, (3) mission focus, (4) characteristic excellence, and (5) servant leadership. The core value for NOBTS this year is **spiritual vitality**.

Curriculum Competencies

The seminary has established the following curriculum competencies:
1. Biblical Exposition
2. Theological & Historical Perspective
3. Servant Leadership
4. Interpersonal Relationships
5. Discipleship Making
6. Worship Leadership

Learning how to conduct quantitative research will enable the student to discover new and important information regarding history, servant leadership, interpersonal relationships, disciple making, and worship leadership.

Student Learning Outcomes

1. Students will study and develop an understanding of the key concepts of the scientific language of statistics.
2. Students will gain a working knowledge of descriptive statistics, measures of central tendency, correlation coefficients, t-tests, analysis of variance, multiple regression analysis, chi-square, and hypothesis testing.
3. Students will gain knowledge in understanding the statistical analysis sections of professional research journal articles in order to keep abreast of research findings in their discipline.
4. Students will be learn and be able to discuss theoretical distributions, inferential and treatment effect tests.
5. Students will be able to demonstrate skill in selecting and using appropriate statistical techniques given specific research questions and sample/population demographics
6. Students will have a working knowledge and be able to use SPSS statistical software to analyze data appropriately, using the statistics introduced in this course.

Course Resources

Required Resources:

Szafran, Robert (2013). *Answering questions with statistics*. Los Angeles, CA: Sage Publications.

International Business Machines (2013). *IBM SPSS Statistics Standard GradPack 22.0 for Windows or Mac*. Armonk, New York: IBM.

Optional Resources:

Aldrich, James O. And Hilda M. Rodriguez (2013). *Building SPSS graphs to understand data*. Los Angeles, CA: Sage Publications.

Brace, Nicola, Richard Kemp, and Rosemary Snelgar (2012). *SPSS for psychologists* (5th ed.) New York, NY: Routledge.

Options for Purchasing the Textbook

There are several choices for purchasing the textbook. The student can purchase the textbook through a bookstore (paperback price: $83). An internet provider (Amazon) sells the paperback edition for $74 plus postage, a Kindle version for $69, and a 120 day rental, Kindle version for $33.

Course Smart provides an 180 day rental, e-edition for $$43. Their internet site is: http://www.coursesmart.com/answering-questions-with-statistics/robert-szafran/dp/9781412991322

Options for Statistical Software SPSS 22.0 Graduate Pack:

This course requires using the statistical software *IBM SPSS Statistics 22.0 Base Graduate Pack*. Three options for using this software package are available to the student:

(1) Rent a copy of the software from e-academy (**http://www.onthehub.com/spss**, then click on IBM SPSS Statistics 22). If the plan is to enroll only in Scientific Research I, the student can get the 6 month rental of IBM Statistics **Base** GradPack 22 for $45.

(2) If a student plans to take the next statistics course, Scientific Research II, in another semester, consider getting a 12 month subscription of IBM Statistics **Standard** GradPack 22 for a cost of $101. The Standard software includes statistics procedures that are needed in the second course that are not needed in the first course.

(3) A third option would be to rent a 6 month edition of IBM Statistics **Base** GradPack 22 for $45 and in another semester rent IBM Statistics **Standard** GradPack 22 for 6 months for $60 for a total annual cost of $105.

A copy of a student's ID card or similar information must be faxed to the company in order to prove student status and obtain an ID and password. Windows, Mac, and versions are available. **Note:** By default, students are provided with two downloads to successfully install the product. The second download is available as a back-up in case it might be needed to re-install the software. The software can be downloaded once the fee is paid. When given the option to download the file or run the set-up program from the web site, choose to download it. During the registration process, you will be asked to submit proof of eligibility (e.g. Student ID card) via file upload or fax. Once proof has been verified, a student will receive an email confirming a verified status. **NOTE:** This may take up to 1-2 business days due to the manual verification process.

(2) Use one of the four SPSS designated computers in the seminary's computer lab. There is no cost for using one of these computers. However, the downside is that the student must use the computers while the ITC offices are open.

(3) Download a **free trial version** of SPSS Statistics 22.0. The demo version will expire approximately 21 days after it is downloaded. This option will provide a

temporary fix until a student decides what option to choose. The demo file is 305 MB in size and will take several minutes to download using a DSL/Cable connection. Downloading the file is not recommended using a dialup (56Kb). The web site for downloading the file is:
http://www14.software.ibm.com/webapp/download/search.jsp?pn=SPSS+Statistics
On this site, click **IBM SPSS Statistics Desktop** and then the operating system for your computer (Windows or Mac). This is a good temporary solution since it may take a few days to download the rented file mentioned in option one.

How to Use SPSS - Videos

Videos will be posted on Blackboard that will help students to learn various SPSS procedures. The student is encouraged to use these videos to supplement the textbook instructions.

Course Methodology

Lectures of the professor will be a major resource material for the course. Lectures along with textbook materials will enable the student to understand basic statistics and understand its application to solving personal problems and enhancing everyday life.

In class discussions based on questions raised through the assigned reading and course lectures will help the student develop a more comprehensive understanding of research. Discussions will enable students to clarify misunderstandings and help the student develop a more holistic perspective.

Student's will solve homework problems using the statistical computer program named SPSS. Using the program, students will learning the basics of how to solve statistical problems. This knowledge will prepare students for their own research projects.

Class Schedule

Classes will convene on campus on the following days and times:

Wednesday: 12:30-3:20 PM. (Central Time)

A 50 minute SPSS laboratory will be scheduled to assist students with homework problems.. Two of the laboratory classes will be scheduled 11:30 - 12:20 PM and 3:30 - 4:20 PM. Other classes will be scheduled if needed. In order to fit student schedules, specific times will be decided on the first day of class

Course Evaluation

The requirements for the course and the contribution of each towards the final grade are as follows:

ACTIVITIES	PERCENTAGE
10 Quizzes (2 of 12 lowest dropped)	25%
10 Homework Assignments (2 of 12 lowest dropped)	25%
2 Tests	50%

Quizes (25% of total grade):
Twelve multiple choice quizzes will given (open book and notes) according to the printed schedule. Quizzes will be submitted using Blackboard. Quizzes cover lecture material from the preceding week and textbook material (Note the course schedule). The two lowest quiz grades will be dropped . **Quizzes are due on Sunday of the week following the lecture on the subject.**

Homework (25% of total grade):
Twelve SPSS homework assignments (open book and notes) will involve solving problems using SPSS. The problems will be related to the Blackboard postings of the previous week. Homework should be emailed to the professor. All computer printouts must be submitted together with the answers to the problems. The two lowest homework grades will be dropped. **Homeworks are due on Sunday of the week following the lecture on the subject.**

Lab: Besides the classroom lectures, this course includes a lab component. Students that have SPSS on their laptop computer are encouraged to bring them to the lab. Students that do not have SPSS on a laptop can use one of the four ITC computers with SPSS installed which located in a room across the hall from the classroom. Ideally everyone in the class will be able to attend the lab either the hour before or the hour after the lecture class. However, the professor is prepared to schedule other lab times as is necessary to fit student's schedules. The alternative times will be established on the first day of class.

Tests (50% of total grade):
All tests will be open book and notes. Each test will cover selected chapters. Questions will be multiple choice, true/false, and solution of problems. The tests should be mailed or emailed to the professor. All computer printouts must be submitted together with the answers to the problems. **The first test is due on Sunday one week after it is given to the student. The final exam is due on the date established for the course during final exam week.**

Important Note:
If the student has difficulty meeting a deadline, contact the professor. Prior approval will be necessary to avoid penalty

Blackboard:

The professor will enroll each student into Blackboard.
Lecture notes, PowerPoint files, links to helpful web sites, etc. will be posted throughout the semester. Students are encouraged to check Blackboard on a regular basis.
Each week the professor will post detailed PowerPoint lectures on the subject of the week.

All quizzes are open book and open notes. Each quiz on Blackboard is multiple choice and has two parts - Quiz X for Practice and Quiz X for Submission. Quiz X for Practice is in pdf format and allows the student to determine which answers he/she would like to submit. Quiz X for Submission allows the student to enter his/her answers and submit them for grading. Upon submission, the student will receive an immediate grade. If the student fails to answer all questions correctly, the grader will inform the student which questions were answered incorrectly.

Homework will involve solving problems using SPSS. The problems will be related to the Blackboard postings of the previous week. Homework should be emailed to Dr. Day (bday@nobts.edu) and the grader, Ai Kyung Ra (Dr. Daygrader@yahoo.com). All computer printouts (in landscape format) must be submitted together with the answers to the problems (in Word or WordPerfect format).

All tests will be open book and notes. Each test will cover selected chapters. Questions will be multiple choice, true/false, and solution of homework type problems. The tests should be emailed to Dr. Day (bday@nobts.edu) and the grader, Ai Kyung Ra (Dr.Daygrader@yahoo.com). All SPSS computer output files must be submitted (in Landscape format) together with the answers to the problems (in Word or WordPerfect format).

Selected Bibliography
General Statistics

Aron, A., Aron, E. N., & Coups, E. J. (2010). *Statistics for the behavioral and social sciences: A brief course* (5th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

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Basic Books on SPSS

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