



## **PSYC6475 Scientific Research II Classroom**

### **New Orleans Baptist Theological Seminary Pastoral Ministry 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.***

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**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 integrates a semester length scientific research project with an investigation of multiple regression analysis, multiple discriminant analysis, MANOVA, and factor analysis. Specific attention is given to the basic methods of research, experimental control, validity, behavioral assessment, instrumentation and measurement techniques, sampling techniques, questionnaire strategies, various research designs, sources of error, research proposals and report development. A semester length research project is completed by each student in accordance with the Publication Manual of APA or Turabian. (*Prerequisite: PSYC6474, or equivalent*).

### **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.

## **Learning Objectives**

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:**

Passer, Michael W. *Research methods: Concepts and connections* (2014). New York, NY: Worth Publishers.

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* (5<sup>th</sup> ed.) New York, NY: Routledge.

### **Options for Purchasing the Textbook**

There are several choices for purchasing the textbook. The book can be purchased from a bookstore (most expensive - approx. \$175). The student can purchase the hardbound textbook from Amazon for \$153, a looseleaf version for \$117, a Kindle version for \$113, or \$73 (rental: 120 days). The book can also be purchased from Course Smart as a 6-month e-book (used with a computer, ipad, or cell phone):

(<http://www.coursesmart.com/research-methods/passers-michael/dp/9780716776819>) for \$87 (access: 6 months). The later choice provides immediate access.

### **Options for IBM SPSS Statistics Standard GradPack 22:**

This course requires using the statistical software *IBM SPSS Statistics Standard GradPack 22*. 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). There are several editions available: base, standard, and premium. The **standard** edition is the **edition needed for this course**. The **base** program does **NOT** include all the programs that a person will need. The **premium** program includes programs that a student will not need for this course. However, since it costs only a little more than the standard edition, a student might consider purchasing it. IBM Statistics **Standard** GradPack 22 rents for 6-months at a cost of \$58.49. A 12 month rental costs \$97.99.

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) **For immediate access to SPSS**, download a free trial version of SPSS Statistics 22. 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 on the file name that uses the operating system for your computer.

This is a good temporary solution since it will take a few days to download the rented file mentioned in option one.

## Course Methodology

Course content will be communicated using Blackboard, email, and phone conversations.

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.

Class discussions using Blackboard's Discussion Board 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.

Students will solve homework problems using the statistical computer program named SPSS. Using the program, students will learn the basics of how to solve statistical problems. This knowledge will prepare students for their own research project. Designing and implementing, and reporting on a research project is a major focus of this course.

## Class Schedule

Course content will be posted on Blackboard by Monday morning for each week of the course. Students are expected to complete each week's assignments by the due dates found in the course schedule.

### Important Note:

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

## Course Evaluation

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

ACTIVITIES	PERCENTAGE
10 Quizzes (Lowest 2 of 12 dropped)	25%
6 Homework Assignments (Lowest 1 of 7 dropped)	25%
Research Project	50%

### Quizzes (25% of total grade):

Twelve multiple choice quizzes will be 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.

### Homework (25% of total grade):

Seven 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 output files must be submitted together with the answers to the problems. The lowest homework grades will be dropped. **Homeworks are due on Sunday of the week following the lecture on the subject.**

**Research Project (50% of total grade):**

Students will design their study, collect the data, collate and analyze the data, and report on the findings. A more detailed description will be given on this major course component during the first week of class. The typed report of the research study is due on the last week of class.

Topics for the research study: It is preferred prefer that you conduct an experimental or quasi-experimental research study. Correlational designs are acceptable only with professor's approval. Each student is responsible to conduct an independent research project. Examples of past projects are listed below.

Various Family Health Issues:

- Family rituals and family health
- Accountability/Trust and family health
- Religious Practice and family health
- Community connectedness and family health
- Spousal Autonomy and Family Health
- Premarital History Factors and Family Health
- Spousal Time/Interests Together and Family Health

The effects of a Spiritual Life Review on the Life Satisfaction Inventory for senior adults

Relationship between physical fitness and spiritual well-being

Relationship between dogmatism and seminary students' major area of study (degree)

Stress responses in ministers

Correlation of attitude toward professional Christian counseling and ministry field

Relationship between pastoral tenure and personality styles of pastors

Effects of supportive versus cognitive treatments for depression

Effects of premarital counseling on healthy relationship beliefs

Relationship between cheek chewing and anxiety

Religiosity and obsessive-compulsive traits among seminary students

Family of origin factors as predictors of incarceration among females

For an example of the finished Research Project: See journal articles in such scientific journals as Journal of Clinical and Consulting Psychology and the Journal of Counseling Psychology. Note: a journal article is in a final form; your paper will be in the "proposal" format; see APA Manual.

The research project report is to be typed according to standards of the Publication Manual of APA or Turabian. The final report should be written as a proposal for publication according to the Publication Manual of APA or Turabian. It is hoped that several students will be able to submit their final report for publication with a professional journal.

### **Important Notes:**

Length of the research paper may vary. Most published journal articles are 4 to 12 published pages. Normally 3-4 typed pages equal one final published page, hence most papers are between 12 and 48 typed pages.

Students are required to use **at least one multivariate technique** plus at least one other statistical procedure such as t-test, Pearson r, and ANOVA. Students must also provide all necessary demographic data and utilize appropriate measures of central tendency to describe accurately the subjects in the study.

Form, content, and correct use and interpretation of statistics will be evaluated in the final paper.

Each student is to submit their own paper; work is to be done independently. Assistance may be used during the experimental phase (i.e. gathering subjects, conducting the experiment, etc.). The statistical analysis and the writing is to be done by each student independently.

The course is designed to be a preparatory for a Ph.D. dissertation. Very high standards are expected. **The project is due on the date established for final exams during final exam week.**

### **VI. Project Outline:**

This course is designed to follow standard research steps: Most steps will be required for the student to complete his or her research project:

#### THE RESEARCH PROCESS:

1. Preliminaries
  - a. Explore questions: Does a research problem exist?
  - b. Review research ethics
2. Determine the variables and operational definitions
3. Determine the research questions or hypotheses
4. State hypothesis (begin process of hypothesis testing: steps 5-14 below)
5. Determine levels of measurement, validity and reliability
6. Review the related literature
7. Determine the sampling method and procedures
8. Select the research design
9. Determine the data collection methods
10. Determine the instruments to measure the variables
  - a. Designing questionnaires or interview schedules
  - b. Selecting/using other types of instruments
11. Select the statistical test(s)
12. Plan data handling and reduction
13. Conduct the pilot study and complete proposal
14. Conduct the research and write the report (state conclusions)

### **Papers and Assignments**

\*All assignments are to be typed in either Times New Roman 12 or Courier 10. Any deviation in this will result in the deduction of points.

\*Papers or homework/assignments turned in after the due date will be considered late. Late assignments will result in a deduction of four points per calendar day. No paper or assignment will be accepted after seven calendar days and a grade of zero will be given.

\*Assignments must be emailed to the professor (bday@nobts.edu). The time and date of submission will be noted.

\*All counseling students will write papers in accordance to standards set in the style manuals.

### **Plagiarism**

\*A high standard of personal integrity is expected of all students. Copying another person's work, submitting downloaded material without proper references, submitting material without properly citing the source, and submitting the same material for credit in more than one course is prohibited. Although anything cited in three sources is considered public domain, we require that all sources be cited. Such forms of dishonesty is strictly forbidden. **ANY INFRACTION WILL RESULT IN FAILING THE COURSE.**

### **Blackboard:**

**Dr. Day will enroll students into Blackboard at the end of the registration period and after all fees have been paid.**

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.

## Selected Bibliography

### General Statistics

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- Babbie, Earl R., Halley, Frederick S., Wagner, William E. & Zaino, Jeanne S. (2010). *Adventures in social research* (7<sup>th</sup> ed.). Thousand Oaks, CA: Pine Forge Press, Sage Publications.
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- Gravetter, F. J., & Wallnau, L. B. (2010). *Essential statistics for the behavioral sciences* (7<sup>th</sup> ed.). Belmont, CA: Wadsworth/Thomson Learning.
- \_\_\_\_\_ (2008). *Statistics for the behavioral sciences* (8<sup>th</sup> ed.). Belmont, CA: Wadsworth Publishing.
- Greene, J., & D'Oliveira, M. (2005). *Learning to use statistical tests in psychology* (3<sup>rd</sup> ed.). Philadelphia, PA: Open University Press.

- Greer, B., & Mulhern, G. (2011). *Making sense of data and statistics in psychology* (2<sup>nd</sup> ed.). New York: Palgrave MacMillan.
- Hamilton, L. C. (1996). *Data analysis for social scientists: A first course in applied statistics*. Belmont, CA: Wadsworth Publishing.
- Healey, J. F. (2011). *Statistics: A tool for social research* (9<sup>th</sup> ed.). Belmont, CA: Wadsworth Publishing.
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- Heiman, G. W. (2004). *Essential statistics for the behavioral sciences*. Boston, MA: Houghton Mifflin.
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- Huff, D. (1993). *How to lie with statistics*. New York: W.W. Norton and Co.
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## Basic Books on SPSS

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