

Introduction to Assessment, Applied Statistics and Research

Fall, 2014

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Course Description: This course will provide an overview of basic concepts and issues involved in (1) testing & assessment, (2) applied statistics, and (3) research within the perspective and context of the role of human service professionals. The course will examine statistical concepts and terms related to evidence-based practice and evaluation, testing and assessment relevant for mental health professionals including school counselors, and applied social research procedures and practices. Attention will be devoted to increasing your practical understanding and consumer utilization of statistics, testing & assessment, and research.

Course Objectives: The course is designed to provide students with curricular experiences and demonstrated knowledge in basic statistics, testing & assessment, and research and program evaluation. As a result of this course students will have acquired knowledge and skills relevant to the Assessment (CACREP II K7 a thru i) and Research and Program Evaluation (CACREP II K8 a thru f) as defined by CACREP 2001 Standards.

ASSESSMENT - studies that provide an understanding of individual and group approaches to assessment and evaluation, including all of the following:

- 7a. historical perspectives concerning the nature and meaning of assessment;
- 7b. basic concepts of standardized and nonstandardized testing and other assessment techniques including norm-referenced and criterion-referenced assessment, environmental assessment, performance assessment, individual and group test and inventory methods, behavioral observations, and computer-managed and computer-assisted methods;
- 7c. statistical concepts, including scales of measurement, measures of central tendency, indices of variability, shapes and types of distributions, and correlations;
- 7d. reliability (i.e., theory of measurement error, models of reliability, and the use of reliability information);
- 7e. validity (i.e., evidence of validity, types of validity, and the relationship between reliability and validity);
- 7f. age, gender, sexual orientation, ethnicity, language, disability, culture, spirituality, and other factors related to the assessment and evaluation of individuals, groups, and specific populations;
- 7g. strategies for selecting, administering, and interpreting assessment and evaluation instruments and techniques in counseling;
- 7h. an understanding of general principles and methods of case conceptualization, assessment, and/or diagnoses of mental and emotional status; and
- 7i. ethical and legal considerations.

RESEARCH AND PROGRAM EVALUATION - studies that provide an understanding of research methods, statistical analysis, needs assessment, and program evaluation, including all of the following:

- 8a. the importance of research and opportunities and difficulties in conducting research in the counseling profession,
- 8b. research methods such as qualitative, quantitative, single-case designs, action research, and outcome-based research;
- 8c. use of technology and statistical methods in conducting research and program evaluation, assuming basic computer literacy;
- 8d. principles, models, and applications of needs assessment, program evaluation, and use of findings to effect program modifications;
- 8e. use of research to improve counseling effectiveness; and
- 8f. ethical and legal considerations.

Required Resources:

1. Texts:

Neukrug, E.S., Fawcett, R.C. (2010). *Essentials of Testing & Assessment* (2nd ed.). Belmont, CA: Brooks/Cole Cengage Learning.

Gravetter, F.J., Wallnau, L.B., (2002 – present). *Essentials of Statistics for the Behavioral Sciences* (4th-8th editions). Pacific Grove, CA: Wadsworth Thomson Learning.

**You do not need the current edition of Gravetter – any older edition will work. I use the 4th edition. You can find early editions on Amazon and ebay. A text is mandatory for reference but you will not have any assignments directly from it.

2. SPSS

There are several ways to gain access to SPSS. Please select a situation that is both cost and time effective for your particular circumstances. Note that access to SPSS is mandatory and we will start using the program immediately. If you are going to purchase a student version, there may be several hoops you need to jump through so please plan accordingly.

- 1) There is no need to purchase SPSS because it is available all over the University in most of the community computing labs on campus (ie: the College Ave lab located behind Brower Commons, all of the libraries also have a lab). If you are going to use this option please call ahead to the lab to make sure they have SPSS on their computers and their hours of operation. The GSE has a computing lab on the second floor which has SPSS. Hours are 8:30 – 4:30 but sometimes classes are scheduled in that room, so call before for the schedule.
- 2) You can download a version of SPSS called “SPSSGradPack.” Onthehub.com offers a 6 month download of SPSS for \$55. If you are taking more stats in the future, they offer longer rental plans as well as purchasing options.
- 3) The University will sell you a license for SPSS as well as the disks.
<https://software.rutgers.edu/search.php?q=spss>

3. EXCEL

Rather than walk through our calculations using paper and pencil, I perform all calculations using Excel. I find it very easy for students to follow along and takes messy handwriting out of the equation. As with SPSS, Excel is available all over the University. If you are using Microsoft Word, you probably already have it. There are other spreadsheet programs out there. I only support Excel.

Weekly Schedule

Each week starts at 12am Monday.

By Wednesday at noon, you must respond to the discussion question.

Wednesday – Sunday is time for you to actively participate in discussions.

Final replies to your discussions are due on Sunday at midnight

Your statistics homework is due on Sunday at midnight

Calculation of Grades:

Syllabus Agreement, Quick Bio	5%
Weekly Statistics Homework assignments	50%
Weekly participation in Discussion Question	45%

Submitting Assignments

Please make sure to only submit assignments in the drop box on our ecollege website (located on the top navigation bar). If you submit an assignment in any other manner (another location on our site, via email) I cannot provide feedback and it becomes difficult for me to grade.

Submitting assignments at the last minute never goes particularly well.

Should you submit an assignment after the due date, your grade will drop by 25% for each day late. Prior approval for a late assignment to receive full credit needs an acceptable reason: illness (with note from physician), family emergency, or religious holiday. In these cases, arrangements should be made with me as soon as possible for alternative due date. I realize that certain unexpected life situations are stressful, so the sooner I am informed of an unusual circumstance the greater my chances are of helping you navigate the course.

Please follow all directions for both completing and submitting assignments. Send only required information.

Grading:

A: 90-100 B+: 87-89 B: 80-86 C+: 77-79 D: 60-70 F: <60

All assignments are graded out of 100 and then final grades are computed on ecollege using the weights listed above.

Office Hours

As this is an online course, I have set-up a discussion area on our ecollege website called "Virtual Office Hours." Rather than email me questions regarding the course, please start a discussion thread and I will answer your questions right online so everyone can benefit from your inquiry.

Of course, if your question is personal in nature (you would like explanation of a specific grade, you have a personal issue) please privately email me.

All questions will be answered within 24 hours.

Please make sure that ecollege has your most updated email address. I frequently use email to communicate with students and pull email address directly from the ecollege system each time.

Technology Requirements

You need very reliable access to the internet to successfully complete this course. Please make sure to have a reliable back-up plan in place (local library, friend's house, coffee shop) in case your primary access is not available when you plan to work on the class. Rutgers has a plethora of options for access on terminals (libraries, computing centers) and most buildings have wireless access for a laptop. The final project must be completed in powerpoint with a voiceover. Please make sure that you have access to powerpoint as well as the ability to record your voice.

Surviving the Course:

- 1) What you get out of this course (knowledge and your grade) depends on what you put into it. My best advice to you is to go in seeking knowledge and a good grade will follow.
- 2) I understand how hard it is to juggle many of life's demands of graduate school and the time you will need to put into our course to be successful. In my experience, students who put in about 15 total hours of work per week (reading, preparing, actively participating in online discussions and completing homework assignments) are the most successful. I make it as easy as possible as all work can be completed on your own time and there are no mandatory check-in times. However, there are deadlines for assignments and discussions.
- 3) We need to assume that we are all very very busy. I understand and can relate to those of you who work (full-time or part-time), have children, are taking other classes, caring for family members (and juggle other things) and have developed the course with that in mind. If your schedule is packed, I suggest developing a master plan of your time for our four weeks together.
- 4) If you find yourself dealing with an unexpected personal situation, please let me know so we can work out a plan for you to complete the class. Please do not disappear for a length of time. And please do not push it with excuses, "I had too many parties to attend this weekend" or "you have no idea what it is like to be a busy student" will not go well.
- 5) Please do not wait until the last minute to ask questions if you are confused, find contradictory information, or if you think something is missing. Additionally do not wait until the last minute to get work completed.
- 6) You need very reliable access to the internet to successfully complete this course. Please make sure to have a reliable back-up plan in place (local library, friend's house, coffee shop) in case your primary access is not available when you plan to work on the class. Rutgers has a plethora of options for access on terminals (libraries, computing centers) and most buildings have wireless access for a laptop.
- 7) Please understand that I am not qualified in any way to help you resolve any technical difficulties you may experience with ecollege. It is always best for you to contact the ecollege student hotline for assistance (most problems usually occur when students attempt to submit assignments and posts at the last minute).

Participation

As with any graduate level course, discussions are a critical part of your learning experience. You are expected to be an active participant in all discussion threads by bringing issues, questions, concerns, and experiences to all online discussions. There are no seats in the back of room!

Discussions will prompt you to first read some specified material and then ask you to post a single response to a question. Your goal is to demonstrate that you have read and pondered the material. For each discussion please contribute one original post to these discussions and answer any follow-ups your original post receives (from me or your classmates) by Sunday at midnight. You should spend some time reading and commenting on the posts of your classmates. At the conclusion of each discussion I highly recommend you revisiting and reading all submissions as the ideas will be of great help to you. You will notice that many of our discussions are directly related to your final paper and the ideas of your classmates will be invaluable as you complete that project. Please be respectful and professional when responding to others.

****Important tip**** I highly recommend composing your posts in a word processing program first, then cutting and pasting on the discussion thread in ecollege. Writing directly to ecollege presents the risk of a technology failure or lock-up.

Each discussion has a deadline for your original post. All substantive comments (by me or your peers) to your original post need to be addressed when the week closes out. Late entries are not accepted. After the deadline each discussion should be in a "read only" state so you can review. Each discussion will be graded on a scale of 0-100. Full credit is given for original responses which demonstrate that you have read, studied and pondered the information and topic/question. I search for evidence that you have digested the applicable information. Initial posts should be no more than 300 words and all deadlines must be met. Your classmates and I may pose a question/comment under your original which must be addressed by the end of the week.

COURSE SCHEDULE

Date	Assessment Topic	Statistic Topic
Week 1	Intro to Assessment	Introduction to Statistical Concepts
Week 2	History of Assessment	Central Tendency SPSS/Excel
Week 3	Types of Assessments	Graphs and Charts
Week 4	Assessment in Counseling	Distributions
Week 5	Administering Assessments z-scores/transformations	Variability
Week 6	Planning for Assessment	Transformations Basic Probability
Week 7	Available assessments	z-scores
Week 8	Administering Assessments	Transforming z-scores Probability with z-scores
Week 9	Interpreting Data Reporting Results	Inferential Statistics vs. Descriptive statistics
Week 10	Interpreting Results Diagnosis	Hypothesis Testing with z
Week 11	Reliability	Z vs t tests Confidence Intervals
Week 12	Validity	Hypothesis testing with t
Week 13	Legal and ethical considerations	Scatterplots Correlation
Week 14	How Assessment can improve Counseling effectiveness	Simple linear regression
Week 15		Interpreting regression
Week 16		Final Homework Due

Students with Special Needs

If you have special needs as addressed by the Americans with Disabilities Act and require academic accommodations or modifications, please notify me immediately. I will make every effort will be made to support your work and success in this class.

Here is the official University policy:

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>."

Academic Integrity

I expect that you have read and will comply with the university's standards on academic integrity. Appropriate action will be taken should you be caught submitting dishonest work. All assignments are to be completed on your own unless specified as a group activity. All references to another's work must be properly cited.

I have read and understand all requirements of Assessment, Applied Statistics, and Research. I understand it is my responsibility to find reliable internet access and to manage my schedule to accommodate all deadlines.

Signed:
