PSYC 600: Introduction to Measurement and Statistics
Fall 2018

Instructor

Course Description

This course will provide an introduction to measurement and statistical tools used in conducting research. Specific topics include: reliability and validity; research methods and statistical analysis; quantitative and qualitative methods; needs assessment and program evaluation; use of technology; and legal and ethical issues of research.

Learning Goals

How do you know if your program is doing what you think if should? Are your clients achieving the outcomes you expect given your interventions? What evidence do you need to be able to say your program is "successful?" What changes can you make to your program to improve outcomes? How would you know if the changes in your program improved program outcomes? These and other similar questions will form the basis of our semester-long quest to discover and apply the intricacies of scholarly inquiry to program evaluation.

This course is designed to inspire you to develop life-long curiosity for how statistics, measurement, and research methods can help you understand how your interventions are working (or not). Through this course, you will:

✓ Differentiate and apply research, assessment, evaluation, and measurement;
✓ Devise research questions designed to examine program effectiveness;
✓ Identify appropriate research methods and statistical analyses needed to answer research questions;
✓ Demonstrate literacy in basic statistics, quantitative design, and qualitative inquiry;
✓ Develop a program evaluation plan to assess the outcomes of an actual human services program;

To ensure your learning experience is meaningful and robust, PSYC600 will fold traditional instruction into an actual program evaluation learning experience. Many of the required readings are located on Canvas. You are expected to study all assigned materials in preparation for in-class team activities. Advance preparation allows you to engage in practice-based activities during the class meeting.

CACREP STANDARDS COVERED IN THIS COURSE

1. Professional Counseling Orientation and Ethical Practice

    j. technology's impact on the profession

    k. strategies for personal and professional self-evaluation and implications for practice

7. Assessment and Testing

    a. historical perspectives concerning the nature and meaning of assessment and testing in counseling

    b. methods of effectively preparing for and conducting initial assessment meetings

    f. basic concepts of standardized and non-standardized testing, norm-referenced and criterion-referenced assessments, and group and individual assessments

    g. statistical concepts, including scales of measurement, measures of central tendency, indices of variability, shapes and types of distributions, and correlations

    h. reliability and validity in the use of assessments

    i. use of assessments relevant to academic/educational, career, personal, and social development

8. Research and Program Evaluation

    a. the importance of research in advancing the counseling profession, including how to critique research to inform counseling practice

    b. identification of evidence-based counseling practices

    c. needs assessments

    d. development of outcome measures for counseling programs

    e. evaluation of counseling interventions and programs

    f. qualitative, quantitative, and mixed research methods

    g. designs used in research and program evaluation

    h. statistical methods used in conducting research and program evaluation

    i. analysis and use of data in counseling

    j. ethical and culturally relevant strategies for conducting, interpreting, and reporting the results of research and/or program evaluation

CMHC 9. JMU Counseling Program Key CMCH Standards: Demonstrate the knowledge and skills necessary to address a wide variety of circumstances within the context of clinical mental health counseling. Applying evidence-based interventions for prevention and treatment of a broad range of mental health issues, graduates also demonstrate skills for social justice and advocacy.

CLINICAL MENTAL HEALTH COUNSELING PROGRAM KPIs AND CACREP STANDARDS

CACREP STANDARDS INCLUDED IN KPIsAND IDENTIFICATION OF STANDARDS COVERED IN ASSIGNMENTS	7f	7g	7h	8a	8b	8c	8d	8e	8f	8g	8h	8i	8j	9
7. Assessment and Testing	X	X	X											
8. Research and Program Evaluation	X	X	X	X	X	X	X	X	X	X	X	X	X	
KPI 8: Research and Program Evaluation (Reinforcement) Program Evaluation Project: provides you with the opportunity to develop an evaluation plan designed to examine an on- or off-campus program. (See Appendix for Rubric)	X	X	X		X									X
9. Counseling Program Key CMHC Standards														X
Assignment 1: Program and Stakeholder Description				X		X	X	X	X	X	X	X		X
Assignment 2: Logic Model	X	X	X											X
Assignment 3: Evaluation Design & Data Collection													X	X
Assignment 4: Data Analysis Plan	X	X	X				X		X		X	X		

SCHOOL COUNSELING PROGRAM KPIs AND CACREP STANDARDS

CACREP STANDARDS INCLUDED IN COURSE, KPI's AND IDENTIFICATION OF STANDARDS COVERED IN ASSIGNMENTS	7f	7g	7h	8a	8b	8c	8d	8e	8f	8g	8h	8i	8j
7. Assessment and Testing	X	X	X										
8. Research and Program Evaluation	X	X	X	X	X	X	X	X	X	X	X	X	X
KPI 8: Research and Program Evaluation (Reinforcement) Program Evaluation Project	X	X	X	X	X	X	X	X	X	X	X	X	X
Assignment 1: Program and Stakeholder Description				X		X	X	X	X	X	X	X	
Assignment 2: Logic Mode	X	X	X										
Assignment 3: Evaluation Design & Data Collection												X	
Assignment 4: Data Analysis Plan	X	X	X				X		X		X	X	

KPI RUBRIC	Below Standard 1	Approaching Standard 2	Meets Standard 3	Exceeds Standard 4
KPI 8: Research and Program Evaluation Critically evaluates research related to core areas of counseling practice. Uses data-informed decision-making practices for program evaluation and management.	Does not meet expectations for level of training and experience in critically evaluating research related to client problems or programs relevant to work setting. Does not use this information to inform decision-making.	Does not consistently meet expectations for level of training and experience in critically evaluating research related to client problems or programs relevant to work setting. Inconsistently uses this information to inform decision-making.	Meets expectations for level of training and experience in critically evaluating research related to client problems or programs relevant to work setting. Able to use this information to inform decision-making.	Surpasses expectations for level of training and experience in critically evaluating research related to client problems or programs relevant to work setting. Able to use this information effectively and thoughtfully to inform decision-making.

Course Meetings
We will meet on Mondays from 4:40-7:10 in Miller G025. Before each class, please review the coming week's materials and progress on your hands-on program evaluation project.

Office Hours
Mondays 1:00-3:00 Memorial Hall 3270C (try to let me know if you plan on stopping over) or by appointment

Readings
This course requires careful, intensive reading coupled with considerable critical thinking, reflection, analysis, and application. In addition to the readings provided on Canvas, please purchase:

Urdan, T. (2017). *Statistics in Plain English* (4th Ed). Routledge: New York

University Policies

As members of the JMU learning community, we will adhere to common university policies and protocols. The information at www.jmu.edu/syllabus contains the academic policies required for all courses: **academic honesty**, **adding/dropping classes**, **disability accommodations**, **inclement weather**, and **religious accommodations**. Please take the time to peruse that website. As an addition to the policy on academic honesty, please ensure that Canvas postings and all submitted assignments are originally and uniquely your creation. When critiquing, alluding to, or referencing the work of others, please comply with the sixth edition of the Publication Manual of the American Psychological Association (APA).

Attendance
I will not take attendance. However, you are responsible for any missed content; office-hour visits are not to be used as a way to catch up on missed class time.

Grading Scale

You can earn 500 points in this course. Specific grade ranges are as follows: A (92.5-100% of points earned), A- (89.5-92.4% of points earned), B+ (85.5-89.4% of points earned), B (82.5-85.4% of points earned), B- (79.5-82.4% of points earned), C (70-79.4% of points earned), F (<70% of points earned).

Schedule

Date	IN CLASS	PRIOR TO CLASS
Week 1 Aug. 28	Introduction to class, syllabus **Content:** Basic stats principles, research overview **Project work:** Intro to Psych 600 projects; phases of evaluation	Sexton, 1999 APA, 2006 CDC (Introduction, pp. 1-13) Listen to (or read transcript of) Freakonomics podcast, "When Helping Hurts" (7/12/2017) – link is in Canvas
Week 2 Sept. 4	**Content:** Questions? Upcoming weeks. **Project work:** Dr. Tim Schulte, Director for Counseling and Psychological Services, will come to class 5-7 pm	CDC (Steps 1 & 2, pp. 13-41)
Week 3 Sept. 11	**Content:** Introduction to the Logic Model for Planning and Evaluation; Focusing your evaluation on outcomes. **Project work:** Logic Model, outcome focused research questions	CDC (Step 3, pp. 42-55) *Assignment 1: Program and stakeholder description due*
Week 4 Sept. 18	**Content:** Basic Experimental Designs **Project Work:** Research design	Kaufmann (Chapter 7, 2005) Vanderstoep and Johnston (Chapter 5, 2009) *Assignment 2: Logic Model due*
Week 5 Sept. 25	**Class will start at 5:15 today** **Content:** Advanced experimental designs **Project Work:** Developing a Data Collection Plan	Vanderstoep and Johnston (Chapter 6, 2009) CDC (Step 4, pp. 56-73)
Week 6 Oct. 2	Selecting solid measures: Validity	Bandalos (Chapter 7) Current Standards (Validity) Barron et al. (2008) Benson (1998) *Assignment 3: Evaluation Design and Data Collection Plan due*
Week 7 Oct. 9	Selecting solid measures: Reliability	Thompson (2003) Current Standards (Reliability)
Week 8 Oct. 16	**Content:** Research Principles, Central Tendency, Variability and the Normal Distribution	Urdan (Chapters 1-4)
Week 9 Oct. 23	**Class will start at 5:15 today** **Content:** Identifying the correct analyses to answer your questions **Project:** Review evaluation questions/data collection plans and identify appropriate analyses to answer questions.	Urdan (Chapter 7, 8, 9, 12 & 13)
Week 10 Oct.	**Content:** Identifying the correct analyses to answer your questions **Project:** Review evaluation questions/data collection plans	Urdan (Chapter 10, 11 & 14)

30	and identify appropriate analyses to answer questions.	
Week 11 Nov. 6	SPSS Practice: Meet in Computer Lab	*Assignment 4: Data Analysis Plan due* *Assignment 5: SPSS questions due at end of class*
Week 12 Nov. 13	Asynchronous class this week (instructor travel) -- see Canvas for materials	
Week 13 Nov. 20	Thanksgiving Break NO CLASS THIS WEEK	
Week 14 Nov. 27	**Content:** Program evaluation overview and wrap-up; Stats follow-up **Project:** Communicating Results: Developing a Reporting Plan (*peer feedback in class because this section will not be handed in but will be included in final plan*)	CDC (Steps 5 & 6, pp. 74-90)
Week 15 Dec. 4	Program Evaluation Presentations	*Program Evaluation Plans Due Friday, December 8 by 5 pm*

Assessment
(500 points total)
Assignments (25 points each)
Assignment 1: Program and stakeholder description due
Compile a comprehensive program description including need, targets, outcomes, activities, and resources. (CDC Worksheets 1A and 1B)
Assignment 2: Logic Model
Identify the stage of development and context of the program. Convert inputs, activities, outputs, and outcomes into a simple global logic model. (CDC Worksheets 2A and 2B)
Assignment 3: Evaluation Design and Data Collection Plan
Define the purpose(s) and user(s) of your evaluation. Identify the use(s) of the evaluation results. Keeping in mind the stage of development, program intensity, and logistics and resources, articulate the evaluation questions to be examined. Lay out a case for your proposed evaluation design, including the specific measures you have selected. Your selected design should be driven by the evaluation questions you wish to explore. Include completed 3A-3B; 4A-4B worksheets from the CDC manual.
Assignment 4: Data Analysis Plan
Guided by your evaluation questions, identify the appropriate analysis need to answer each question. Be sure to clearly communicate what variables will be used in each analysis. For example, if you are planning to conduct a t-test, what is your independent variable and what is your dependent variable. BE sure to write this section as if the stakeholder you are writing for knows nothing about statistics. Include a completed Worksheet 5 from the CDC manual.
Assignment 5: SPSS questions due at end of class
Students will be provided with a research questions and a corresponding data set. Identify the appropriate analysis to answer the presented question. Run the analysis using SPSS and write-up a brief APA results section to communicate your results. Do not forget to include appropriate descriptive statistics to describe your data and how the characteristics of your data impact your choice of analysis.

KPI 8 (Reinforcement) Program Evaluation Project (325 points -- Written Plan 200 points; Class Presentation 125 points)

The purpose of this capstone assignment, **which maps to each of the learning outcomes in this course**, is to provide you with the opportunity to develop an evaluation plan designed to examine an on- or off-campus program. This will consist of both revising previous completed sections of the plan by integrating feedback from earlier drafts and creating new plan section for **Reporting Plan**: The purpose of the reporting plan is to consider appropriate stakeholders when disseminating findings. Using step 6 out of the CDC manual, develop a reporting plan for your specific program evaluation. Be sure to include a complete 6A-6B worksheet from the CDC manual.

Professionalism (50 points)

A critical skill for evaluators is to give and receive feedback in a receptive and poised manner. In addition, preparedness, ability to problem solve independently, and attention to writing/grammar/presentation skills will all comprise the score for this area. I will try to check in with you once a month or so about professionalism, especially if I have any concerns in this area. You may be asked to communicate with me through a confidential survey (between us two only, not shared with class).