# Applied Measurement and Analysis

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tr>
<td>March 30, 31, April 1</td>
<td>Friday 5:30 pm – 9:10 pm</td>
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<tr>
<td>April 20, 21, 22</td>
<td>Saturday 9:00 am – 5:00 pm</td>
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<tr>
<td>April 27, 28, 29</td>
<td>Sunday 1:00 pm - 4:00 pm</td>
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**Room:** 3110 unless noted otherwise

**Instructor:** Dr. Jennifer Kisamore  
**Phone:** (918) 660-3603  
**Office:** 3J06  
**Office Hours:** by appointment  
**Email:** jkisamore@ou.edu  
**Mail Box:** 1J39  
**Fax:** (918) 660-3490  
**Website:** on Desire2Learn

**Prerequisites:** Design, Evaluation, and Statistics (ODYN 5153).

**Required Course Texts:**

**Selected Readings:** (available in Library Reserve and/or Desire2Learn site)

**More Selected Readings:** (You should already have one of these two texts)
ONE of the following two (depending on the Design and Analysis class you took).

**Optional Texts and Readings:**
Course Description: This course focuses on teaching principles and practices of individual and organizational assessment covering concepts such as validity, reliability, survey and instrument development, and characteristics of organizational data. Techniques for analyzing organizational data and conducting program evaluation will also be discussed.

Learning Objectives: By the conclusion of this course, the student will:
1. be able to develop studies to evaluate the impact of implemented programs;
2. design scales and subscales for assessing individuals on specific constructs;
3. conduct statistically sound reliability and validity analyses;
4. know the assumptions associated with various statistical procedures, be able to determine when procedures are or are not appropriate, and know how to combine procedures to achieve the highest quality of analysis from the available data/situation.
5. know how to design a cost-effective analysis and still attain valid data.

Philosophy for the Course:
I view myself as a catalyst to help you learn the information covered in the texts you will be reading as well as in the notes I cover. I cannot make you learn the material but I can help you in the process of learning the material. To make the learning process easiest on yourself, you need to do the assigned readings ahead of class time and show up to class with specific questions you have about the material you have read. I will provide you with a list of questions/problems that you should be able to answer from the readings. All assigned reading is required and is fair game for Sunday quizzes, even topics not specifically covered by the weekly homework questions.

Class contact time will focus on application of material covered in readings, coverage of more difficult topics, and statistical analysis. I expect that you will come to class with an understanding of basic concepts as well as theoretical underpinnings or application context of methods/topics we will cover.

The reading load for this course is heavy. The readings are designed to present each topic from several perspectives so that you get a more rounded understanding of the topics covered. Where possible, I have included readings that emphasize application of methods in an ODYN or related context. The assigned homework questions are designed to assess your understanding of the basic concepts covered in the reading.

Basic Schedule: Every week, you will be assigned a set of questions/problems to respond to/complete based on the assigned readings for the following week. Responses to the questions are due at 5:30 PM Friday. Every week there will be a quiz to assess your understanding of the material covered in the readings and material covered that weekend.

Grading:

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<tr>
<th>Grade</th>
<th>Points earned</th>
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<tr>
<td>A</td>
<td>895 or above</td>
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<tr>
<td>B</td>
<td>795-894</td>
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<tr>
<td>C</td>
<td>695-794</td>
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<tr>
<td>D</td>
<td>694 or below</td>
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Course Point Allocation Scheme:

- Participation & Preparation: 100 points
- Homeworks/Questions: 125 points
- Exams: 300 points
- Activities and Topic Exercises: 150 points
- Team Project: 175 points
- Final Paper: 150 points

1,000 points maximum
Religious Holidays: If any of the class meetings fall on a religious holiday that you will be observing, please let me know as soon as possible (no later than the end of the first class meeting) so that alternative arrangements can be made.

Disabilities: Any student who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact the Student Affairs Office. Student Affairs personnel will document the disability and ensure that reasonable accommodations are made for students to participate fully in the course and to facilitate their educational opportunities.

Academic Dishonesty: Plagiarism, cheating, and other forms of academic misconduct will not be tolerated. Students who engage in academic misconduct will receive the severest penalty in accordance with university guidelines. Penalties for academic misconduct include grade sanctions, censure, community service, suspension, and/or expulsion.

During this course, students will have some opportunities to work together with other students in the class. Please see guidelines listed below regarding what is and isn't allowable collaboration between students during this course.

Homework Questions—students may discuss and clarify concepts while working together. Answers on homework and to assigned questions must be the student's own thoughts and written in the student's own words.

Exams—students must complete exams independently. Use of calculators, formula sheets, and/or computers is acceptable only as indicated by the instructor. Exams should be considered cumulative although they will emphasize material covered since the previous exam.

Activities and Topic Exercises—students will work together in groups for in-class assignments and exercises. Please be sure to include all group members' names on assignments handed in for credit.

Team Project—group/team work will is allowed on all aspects of the project. Teams may collaborate with other teams although the final team presentations should each be unique. The team project will require a presentation and handout only (no paper write-up).

Final Paper—students must complete the final paper independently. This paper will generally be 5 to 7 pages in length for the body of the paper. There are several different formats that this paper can take. Further description will be available in the Course Notes.

For more information about the OU Academic Misconduct Code, see www.ou.edu/provost/integrity.

Course Schedule Terms:

Application Session—These sessions are designed to help you apply and integrate material learned in previous sessions in using sophisticated examples. The bulk of the session time will be devoted to working through organization-based scenarios.

Team Exercises—Sessions denoted with this term will include a team-based exercise designed to help individuals apply the concepts covered early in the session.

Shorter exercises will be included in sessions that do not include the terms defined above time permitting and depending on the needs and preparation of class participants.
Course Schedule

Weekend One: Statistical & Measurement Techniques for Assessing Outcomes

Friday, March 30, 2007

Session 1a: Introduction
Session 1b: Test use, history of testing, testing ethics
  Reading: Murphy (Ch 1, 3, & skim Appendix B)
  Skim Principles for the Validation and Use of Personnel Selection Procedures
Session 1c: Testing applications; Types of Tests (including interviews)
  Reading: Aamodt (pp. 174-193)
  Skim Murphy (Ch 2)
  Aamodt (pp. 139-146)
  Murphy (Ch 19)
  Skim Murphy (Ch 14, 16, & 17)
  -pay attention to basic test types and examples of each
Session 1d: Types of Scales
  Reading: Aamodt (pp. 248-251)

Saturday, March 31, 2007

Session 1e: Correlation
  Reading: Toothaker & Miller Chapter 6 or Lind Chapter 13
  Optional Reading: Bobko text
Session 1f: Multiple Regression
  Reading: Toothaker & Miller Chapter 7 or Lind Chapter 14
  Optional Reading: Bobko text

Break

Session 1g: Correlation and Multiple Regression (Application Session)
  Optional Reading: Bobko text
Session 1h: Survey/Test Design (Team Exercise)
  Decide on topic for survey to be developed with team members. Develop hypothesis.
  Optional Reading: Fowler book

Sunday, April 1, 2007

Session 1i: Program Evaluation
  Reading: Reading: Aamodt (pp. 7-18)
  Murphy (Ch 4-it's an overview and review of basic statistical concepts)
  Aamodt (pp. 278-282)
  Cozby (pp. 180-189)
Session 1j: Meta-Analysis
  Murphy (pp. 188-190)
  Glass

To Do:
- Exam 1 (due Monday, April 9th by 11:55 PM)
- Readings for next week and associated questions.
- Team Project:
  - Start collecting references (at least 3 topic-relevant) for team presentation.
  - Draft of at least 10 questions for Monday, April 9th, per team. Readings for session 1c, 1d, and Fowler book should be helpful with this.
Weekend Two: Survey and Scale Development

Friday, April 20, 2007
Session 2a: Survey Focus Group Feedback Session (Application Session)
Session 2b: Scale Transformation, Norms, & Cut Scores; Test Utility
   Reading: Murphy (Ch 5); Kisamore et al.

Saturday, April 21, 2007
Session 2c: Scale development & Factor Analysis
   Reading: Murphy (Ch 11)
   Cortina article
Session 2d: Test/Scale Development & Factor Analysis (Application Session)

Session 2e: Reliability & Generalizability
   Reading: Aamodt (pp. 99-105)
   Murphy (Ch 6 & 7)
   Review Cortina article
Session 2f: Reliability and Validity (Application Session)-part 1
Session 2g: Survey/Test Design (Team time)

Sunday, April 22, 2007
Session 2h: Validity
   Reading: Aamodt (pp. 124-129)
   Murphy (Ch 8 & 9)
   Guion (optional)
Session 2i: Reliability and Validity (Application Session)-part 2

To Do:
- Exam 2 (due Thursday, April 26th by 5 PM)
- Readings for next week and associated questions.
- Team Project:
  - Collect data from 5 friends/family members (including self)
  - Enter data into data template for all team members; email to Jennifer by Friday, April 27th at 1 PM.
Weekend Three: Analyzing the Suitability of Tests and Items

Friday, April 27, 2007

Session 3a: Item Analysis & Item Response Theory
Reading: Murphy (Ch 10)
Vale
Ellis & Mead (Optional)

Session 3b: Project Data Analysis and time for team project write-up.

Saturday, April 28, 2007

Session 3c: Bias; Differential Validity
Reading: Aamodt (pp. 112-120)
Murphy (Ch 15-focus on test bias; detecting bias)

Session 3d: Computer & Testing
Reading: Murphy (Ch 12)

Session 3e: Wrap-up of course material
Session 3f: Team project time

Sunday, April 29, 2009

Session 3f: Team Project Presentations
Session 3g: Course Evaluations

To Do:

- Exam 3 (due by Friday, May 4th at 11:55 PM)
- Final paper (due by Tuesday, May 8th at 11:55 PM). Please turn in the final paper sooner if you have it done.
Additional Materials of Interest


