Overall Goal and Course Objectives

Catalog Description: EDRS 531 Educational and Psychological Measurements (3:3:0). Emphasizes techniques and principles used in the construction, administration, and quantification of measuring devices for evaluation purposes. Discusses interpretation of standardized tests of ability, aptitude, achievement, interest, and personality.

This course is designed to facilitate students acquiring the fundamental measurement concepts, principles, theories, used in psychological and educational testing. Current models for test construction and the evaluation of standardized and standards-based tests will be examined.

Attainment of the overall goal will be demonstrated by students providing evidence of the ability to:

- apply the principles of educational measurement to relevant problems in testing
- understand basic technical characteristics of standardized tests
- interpret technical information presented in standardized test manuals
- interpret standardized test results
- evaluate published standardized tests and assessment instruments;
- knowledge of current professional practices and issues related to educational measurement and assessment;
- apply sound principles of measurement and assessment in multicultural settings
These learning objectives correspond to the competency standards advanced by three major educational organizations, namely, the National Council on Measurement in Education (NCME), American Federation of Teachers (AFT), and the National Education Association (NEA). In *Standards for Teacher Competence in Educational Assessment of Students* (1990), these professional associations asserted that educators should be skilled in:

- Choosing assessment methods appropriate for instructional decisions.
- Developing assessment methods appropriate for instructional decisions.
- Administering, scoring and interpreting the results of both externally-produced and teacher-produced assessment methods.
- Using assessment results when making decisions about individual students, planning teaching, developing curriculum, and school improvement.
- Developing valid pupil grading procedures which use pupil assessments.
- Communicating assessment results to students, parents, other lay audiences, and other educators.
- Recognizing unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information.

In addition NCME’s Code of Professional Responsibilities in Educational Measurement (NCME, 1999) as well as *Standards for Educational and Psychological Testing* (AERA, 1999) serve as lenses through which each topic will be viewed and understood.

**Course Description**

**Organization**

The course is organized as a seminar/workshop format. Class periods are devoted to a number of different activities, including small group and whole-class discussions, video presentations, and mini-lectures. These activities are organized around the content of the required textbook and a variety of additional resources such as the Students’ Learning Resource Manual (*SLRM*). You must check Blackboard each week as new materials will be posted to the course for your review and completion prior to class.

While the mini-lectures are relevant to specific chapters in the required textbook, they are not taken exclusively from this source. The general purpose of the lectures is to clarify, amplify, and supplement your textbook, not to duplicate it. Therefore, it is important that you attend class regularly and read the relevant chapters prior to a given lecture in order that you may raise questions if your concerns are not covered in class.

**Appendix A** provides the *Class Calendar* that lists the instructional units, pertinent assignment due dates, and the chapters related to each instructional unit. Blackboard will be updated weekly with additional information associated with each unit and homework.

**Course Requirements**

Besides active class participation, there are several written assignments and a major project that are part of the course requirements. **Appendix B** lists *General Guidelines* for all written assignments.

(NOTE: Specific guidelines for the completion of each required assignment will be posted in Blackboard. It is expected that all assignments will be received as noted in Appendix A. If you cannot meet a deadline, please notify me in advance via email.)
We will be using the **Interactive Herrmann Brain Dominance Indicator** (iHBDI) instrument as an exemplar throughout the course. You will be engaged with the instrument as both a test taker and a test evaluator. This is a new interactive instrument that is currently in beta test, and is slated to launch worldwide in 2009. According to Ann Herrmann (2008) the origin of the HBDI is as follows:

In 1976, while researching the brain as the source of creativity, Ned Herrmann learned of the pioneering brain research of Roger Sperry, Paul MacLean, Joseph Bogen and Michael Gazzanaga. From their work it is clear that the brain has four distinct and specialized structures. Inspired by this research, Herrmann worked with EEG scans and, later, paper-and-pencil questionnaires to identify four distinct types of thinking, each roughly corresponding to one of the brain structures. The result of this research is the Herrmann Whole Brain® Model.

In August 1979, after many tests, in-depth research, and mountains of data, Herrmann had developed a valid self-assessment that enables individuals to understand their own thinking style preferences—the HBDI®.

Inclusion of the iHBDI into the course provides you an opportunity to experience and evaluate the merits and limits of computer-assisted psychological assessment (CAPA). iHBDI instructions will be provided as the course progresses and relevant topics are discussed.

**Action Research (20%)**
This requirement involves inquiry-based learning that requires students to investigate current issues and practices in standardized testing in a professional area.

**Review of Standardized Tests (20%)**
Students are required to review two (2) standardized instruments --- one cognitive test and one personality instrument (affective traits such as interest, adjustment, etc.).

**Midterm Exam (20%)**
A selected-response exam will be given covering basic understanding of the concepts listed in the self-assessment section of chapters 2-6 of the Cohen and Swerdlik textbook. *High probability concepts selected for the exam will be those that were not only covered in the textbook but also found in the homework exercises.* The exam will contain about 60 items and be given during the first segment of the instructional period.

**e-Portfolio of Learning Engagement (40%)**
The e-Portfolio is a collection of exhibits of (1) completed homework, and (2) a summary and reflection brief based on your selection of two researched articles. The basis of your research will be a topic from *Benchmarking for success: Ensuring U.S. students receive a world-class education* or *Call to action health reform 2009*. Topics should be related to testing in the context of one of the three following areas: (a) **social justice**, (b) **promoting personal excellence in academic achievement**, or (c) **diversity** (ethnic, racial, gender, special needs, or language).

The review/reflective paper should be no longer than six pages. All e-Portfolio exhibits will be submitted on a CD-RW disk on Final Exam Night. You will provide a brief oral presentation of your review/reflective paper on Final Exam Night.
Summary of Course Requirements

The course requirements are listed below along with their relative weights.

Table I. Relative Weights of Course Requirements

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>Relative Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Research Report (Appendix C)</td>
<td>20%</td>
</tr>
<tr>
<td>Review of Standardized Tests (2)</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>E-Portfolio (selected work &amp; paper)</td>
<td>40%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Required Textbook and Web-Based Sources


GMU Blackboard Learning System. Requires enrollment by the instructor. Access at: www.gmu.edu (scroll to Sites of Interest – select Blackboard Learning System)

iHBDI instrument. Requires enrollment by the student. Specific instructions will be provided.


Other Web-based Resources:

Buros Institute of Mental Measurements. Retrieved January 8, 2009 at: http://buros.unl.edu/buros/isp/search.jsp
(Includes a directory of tests with descriptions)

(Includes a directory of tests with descriptions)

(The Illinois State Assessment Test (ISAT) and the Prairie State Achievement Examination (PSAE) measure individual student achievement and show how well students and schools are performing relative to the Illinois Learning Standards. The tests measure student progress in meeting the Illinois Learning Standards. The tests are given at specific times in a student's educational career, however they are not grade specific. The test results identify areas of strength and weakness for students and schools. The information helps educators and parents assist students to meet the Standards.)


Recommended Resources:

References


### APPENDIX A

**CLASS SCHEDULE: SPRING 2009**

<table>
<thead>
<tr>
<th>DATES</th>
<th>LECTURE &amp; READING TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN 27</td>
<td>Orientation to the course and introduction to the study of educational testing and assessment: Basic definitions and survey of types of standardized tests.</td>
</tr>
<tr>
<td></td>
<td>Readings for this week:</td>
</tr>
<tr>
<td></td>
<td>Cohen &amp; Swerdlik (C&amp;S), Chapters 1-2</td>
</tr>
<tr>
<td></td>
<td><strong>Homework Exercises:</strong> iHBDI &amp; Class 1 Assignments</td>
</tr>
<tr>
<td>FEB 3 &amp; FEB 10</td>
<td>Review of Basic Statistical Concepts Required for Understanding and Interpreting Standardized Tests. Readings for this week:</td>
</tr>
<tr>
<td></td>
<td>C&amp;S, Chapter 3, &amp; pp 114-125</td>
</tr>
<tr>
<td>FEB 17</td>
<td>Basic Assumptions About Psychological Measurement and Testing &amp; Essential Qualities of a Good Test. Readings for this week:</td>
</tr>
<tr>
<td>FEB 24</td>
<td>C&amp;S, Chapters 4-6</td>
</tr>
<tr>
<td>MAR 3</td>
<td><strong>In-Class: Discuss Previous Work; New:</strong> Grade Equiv; Stanines; Test-Retest Action Research Report Due Feb 24.</td>
</tr>
<tr>
<td>MAR 17</td>
<td>Midterm exam covering self-assessment concepts from chapters 2-6.</td>
</tr>
<tr>
<td>MAR 24</td>
<td>Principles of Test Development. Readings for this week:</td>
</tr>
<tr>
<td></td>
<td>C&amp;S, Chapter 7</td>
</tr>
<tr>
<td></td>
<td><strong>In-Class Exercises:</strong> Standard Errors of Measurement, Internal-Consistency, Item Analysis</td>
</tr>
<tr>
<td>MAR 31</td>
<td>Understanding Standardized Cognitive Tests: Aptitude. Readings for this week: C&amp;S, Chapters 8-9</td>
</tr>
<tr>
<td></td>
<td><strong>Whole Class:</strong> Previous week’s exercises</td>
</tr>
<tr>
<td></td>
<td><strong>In-Class Exercises:</strong> Construct Validity; Content Validity</td>
</tr>
<tr>
<td>APR 7</td>
<td>Understanding Standardized Cognitive Tests: Achievement. Readings for this week: C&amp;S, Chapter 10</td>
</tr>
<tr>
<td></td>
<td><strong>Whole Class:</strong> Results of in-class exercises</td>
</tr>
<tr>
<td>APR 14</td>
<td>Personality Assessment. Readings for this week: C&amp;S, Chapters 11-12</td>
</tr>
<tr>
<td></td>
<td><strong>In-Class Exercises:</strong> Concurrent Validity</td>
</tr>
<tr>
<td>APR 21</td>
<td>Clinical and Counseling Assessment. Readings for this week: C&amp;S, Chapter 13</td>
</tr>
<tr>
<td>APR 28</td>
<td>The Assessment of People with Disabilities: Readings for this week: C&amp;S, Chapter 15</td>
</tr>
<tr>
<td>MAY 5</td>
<td>Assessment for Careers, and Business: Readings for this week: C&amp;S, Chapter 16</td>
</tr>
<tr>
<td></td>
<td><strong>Test Reviews Report Due</strong></td>
</tr>
<tr>
<td>MAY 12</td>
<td>Oral Report on Article Reviews and e-Portfolio Submitted</td>
</tr>
</tbody>
</table>
Homework- Class 1

The following exercises should familiarize you with online testing resources available to you. These are resources that can be used to identify your cognitive and affective test reviews.

Site 1:

Go to http://buros.unl.edu/buros/jsp/search.jsp

Click on CATEGORY SEARCH

Select a CATEGORY OF INTEREST

Select an ASSESSMENT from the list in your category

Note the information included about the test. This is similar to the information available at the Johnson Library, Mental Measurements Yearbook online. Access through the Johnson Library is free. As you can note from the Buros site, other institutions will charge you to access the information.

Site 2: ETS (Educational Testing Service)

Go to http://www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnextoid=ed462d3631df4010VgnVCM10000022f95190RCRD&vgnextchannel=85af197a484f4010VgnVCM10000022f95190RCRD

Select Find a Test

Select SEARCH

Test out the search test feature

Note the differences in the information provided compared to the Buros test search system.

Site 3: Complete the iHBDI instructions for Class 1. See instruction sheet for sign-in details.
APPENDIX B

GENERAL GUIDELINES TO WRITTEN ASSIGNMENTS

All course projects should be typed, double-spaced, and include a cover page. In addition, **the text of the papers should be preceded by an abstract of no more than 250 words** that provides a synopsis of the content, such as purpose, procedures, findings and conclusions. In terms of general style, the format provided in the fifth edition of *Publication Manual of the American Psychological Association* (American Psychological Association, 2001) should be followed. The features that should be given close attention are:

- Margins  
- Headings  
- Citations in the Text  
- Reference Page

The *cover page* should include the title of the assignment, your name, date, and institutional affiliation information.

You should make a copy of your projects before submitting it to the instructor. The instructor will keep the original copy of the major paper, but will provide feedback in terms of a performance rubric. You are welcomed, of course, to make an appointment to see the instructor concerning the evaluation of the project.
Guidelines to Action Research Reports

Confer with me if you wish to substitute a topic of your personal interest.

Topic: Researching Testing Practices in Your Professional Area

1. Interview someone in your profession who is involved in standardized testing. Examples include individuals working in a personnel office who administer qualification tests to applicants; counselors who give test to gain insight into their clients’ needs and interests; teachers who administer Standards of Learning Tests (SOLs) to comply with district and state standards-based requirements.

2. The focus of the interview should be:
   a. generally speaking, what role do the instrument(s) play in your work? (Example: “They provide concrete information that hopefully reduces the errors we could make in our hiring practices.”)
   b. What are the specific purpose(s) in the instrument(s)? (Example, “The XYZ test is given to identify if the applicant’s typing speed is sufficient to qualify for the position.”)
   c. What are the strengths and limitations of the currently used assessments?
   d. What recommendations would you make for future assessments if such impediments as time and expenses did not exist?
   e. Additional feedback that emerges from the interview.

3. Summarize your findings in a narrative report. The narrative should include a description of how the individual was “recruited” for the interview and the setting. Also briefly describe the interview process (e.g., the use in audio taping, telephone interview, etc.). Attach a copy of the interview “raw data” to the narrative.