

Course Description

MEDD8903 Introduction to educational and psychological measurement

Course description		
This course is designed to provide an overview of the fundamental topics and issues in educational and psychological testing and measurement. The goal of the course is to offer basic knowledge and techniques required to analyse educational and psychological tests from a psychometric perspective. A course in introductory statistics is required for this course. The topics include principles of educational and psychological measurement, such as scaling, reliability and validity, item analysis, classical test theory (CTT), item response theory (IRT), and principles of test construction. This course aims to prepare students with fundamental knowledge and skills necessary to perform psychometric analyses, to interpret and evaluate measurement methodology and outcomes, and to apply appropriate psychometric strategies to address questions that arise in educational research and practice.		
Course objectives		
This course aims to prepare students with fundamental knowledge and skills necessary to perform psychometric analyses, to interpret and evaluate measurement methodology and outcomes, and to apply appropriate psychometric strategies to address questions that arise in educational research and practice.		
Course learning outcomes		
<ol style="list-style-type: none"> 1. Demonstrate a fundamental understanding of the purpose of score transformation, procedures for test construction, and principles of CTT and IRT. 2. Recognize proper collection and interpretation of reliability- and validity-related evidence. 3. Conduct psychometric analyses from CTT and IRT perspectives. 4. Read, interpret, and critically evaluate measurement methodology, outcomes and interpretations found in educational research. 		
Course assessment methods		
Assessment method	Weighting (%)	Aligned course learning outcome(s)
Participation and homework	30%	CLOs 1-3
Quiz	30%	CLOs 1-3
Final Project	40%	CLOs 1-4
Course content and topics		
Introduction, basic terminology, and scaling; transformation, norm, classical test theory; reliability and validity; principles of test construction; classical item analysis; and item response theory models and applications		
Required / recommended readings and online materials		
<p>Required:</p> <p>Allen M. J., Yen W. M. (2002). Introduction to measurement theory. Long Grove, IL: Waveland Press.</p> <p>Recommended:</p> <p>American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). Standards for educational and psychological testing. American Educational Research Association.</p> <p>Brennan, R. L. (Ed.). (2006). Educational measurement (4th ed.). Westport, CT: Praeger Publishers.</p> <p>Crocker, L., & Algina, J. (1986). Introduction to Classical & Modern Test Theory. New York: Holt, Rinehart and Winston.</p> <p>Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). Fundamentals of item response theory. Sage.</p>		
Other additional course information		
Prerequisite: Previous enrolment in MEDD8815 Introduction to Statistical Methods or equivalent		