George Mason University  
Graduate Course Approval/Inventory Form

Please complete this form and attach a copy of the syllabus for new courses. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. Complete the Coordinator Form on page 2, if changes in this course will affect other units.

Please indicate:  ___*___ NEW  _____ MODIFY  _____ DELETE

Local Unit:  Graduate Council Approval Date:

Course Abbreviation:  Course Number: HSCI 802

Full Course Title: Theory and Application of Measurement in Healthcare Research

Abbreviated Course Title (24 characters max.):

Credit hours: 3  Program of Record:

Repeateable for Credit?  ___ D=Yes, not within same term  Up to hours
___ T=Yes, within the same term  Up to  hours
___ N=cannot be repeated for credit

Activity Code (please indicate):  ___ Lecture (LEC)  ___ Lab (LAB)  ___ Recitation (RCT)
___ Studio (STU)  ___ Internship (INT)  ___ Independent Study (IND)  ___ Seminar (SEM)

Catalog Credit Format :  Course Level: GF(500-600)  ___ GA(700+)  ___

Maximum Enrollment: 20  For NEW courses, first term to be offered:
Prerequisites or corequisites: A doctoral level course in research design and statistics. Previous completion of HSCI 800 and/or HSCI 801 is highly recommended.

Catalog Description (35 words or less). Please use catalog format and attach a copy of the syllabus for new courses. Theories, principles, and techniques are presented as a foundation for the development and evaluation of instruments for use in healthcare research. The course includes a review of statistical techniques required for understanding measurement theory, reliability, validity, item analysis, and instrument construction. Students are required to design, construct, administer, analyze, and evaluate an original instrument or evaluate an instrument in healthcare research.

For MODIFIED or DELETED courses as appropriate:
Last term offered:  Previous Course Abbreviation:
Previous number:

Description of modification:

APPROVAL SIGNATURES:
Submitted by:  Heibatollah Baghi  email: Hbaghi@gmu.edu
HSCI 802. Theory and Application of Measurement in Healthcare Research

INSTRUCTOR: Hebatollah Baghi, Ph.D.
Office: Robinson A489C 703-993-4677
Hbaghi@gmu.edu

CREDIT HOURS: 3

PREREQUISITE: A doctoral level course in research design and statistics. Previous completion of HSCI 800 and/or HSCI 801 is highly recommended.

COURSE DESCRIPTION: Theories, principles, and techniques are presented as a foundation for the development and evaluation of instruments for use in healthcare research. The course includes a review of statistical techniques required for understanding measurement theory, reliability, validity, item analysis, and instrument construction. Students are required to design, construct, administer, analyze, and evaluate an original or evaluate an existing instrument in healthcare research.

COURSE OBJECTIVES: By the end of this course, the students will be able to:

1. Apply theories of measurement to the development of an instrument.
2. Appraise statistical techniques for providing evidence of validity (i.e., content, construct, criterion-related validation) for measures utilized for the collection of healthcare data.
3. Evaluate selected statistical approaches to the estimation of reliability of an instrument.
4. Select evaluative criteria for scale selection in healthcare research.
5. Differentiate between norm-referenced and criterion-referenced measures.
6. Evaluate tools contained in the measurement portions of current healthcare research studies.

COURSE CONTENT

1. Introduction to course
2. Measurement process in healthcare research
3. Definition and benefits of measurement
4. Scales of measurement
5. Measurement and statistics
6. Reliability
   A. Classical test theory
   B. Approaches to the estimation of reliability
   C. Internal consistency reliability
   D. Generalizability theory
   E. Computer programs for reliability
7. Source of validity evidence
   A. Evidence based on content
   B. Evidence based on internal structure
   C. Evidence based on relations to other variables
a. Convergent and discriminant evidence  
b. Criterion related evidence  
c. Validity generalization

8. Exploratory factor analysis using SPSS  
9. Confirmatory factor analysis using LISREL  
10. Rating scales approaches to item analysis, dimensionality, and selection of scales  
GEORGE MASON UNIVERSITY  
Course Coordination Form

Approval from other units:

Please list those units outside of your own who may be affected by this new, modified, or deleted course. Each of these units must approve this change prior to its being submitted to the Graduate Council for approval.

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Graduate Council approval: ________________________________________ Date: __________

Graduate Council representative: ___________________________ Date: __________

Provost Office representative: ___________________________ Date: __________