Lincoln University

SPRING 2016

COURSE: **BA 386 I – MBA Special Topics in Business Administration: Business Measurement** (Tuesdays 6:30 – 9:15 PM)
3 units (45 hours of lectures)

INSTRUCTOR: Igor Himelfarb, Ph.D. ihimelfarb@lincolnuca.edu

OFFICE HOURS: Before and after class and by appointment in room 407

TEXT: Raykov, T., & Marcoulides, G.A. (2010). Introduction to Psychometric Theory. Routledge, T&F Group.
ISBN-10: **0415878225**, ISBN-13: **978-0415878227**

TOOLS: Students will be introduced to R and M*plus* programs. Excel will be used for data management.

CATALOG DESCRIPTION:

This course offers topics of specialized interest, including case studies and independent research. Topics vary; so students may include this in a customized concentration. This course may substitute for a concentration only once with the permission of the Program Director. (3 units) *Prerequisite: Instructor's permission*

COURSE OVERVIEW:

To know if your business is profitable or if profits are leaking from your business, and if the leaks are serious, you must measure what is happening in your business. Your business should be running on facts and data, not emotional or gut feel! The purpose of this course is to provide an introduction to the logic and practice of measurement in business. Students will be introduced to the common models and procedures for constructing tests and interpreting test scores, including factor analytic models, and models based on Classical Test Theory (CTT). Issues of validity and reliability of measuring instruments will be discussed. A special emphasis will be placed on the application of Item Response Theory (IRT) in business. IRT is widely used in the context of assessment and measurement and is becoming increasingly popular in business and

social scientific settings. In particular, IRT models are commonly used in evaluation of measurement precision, test and item bias, hypotheses about item difficulty and the causes thereof, the comparability of different instruments or instrument forms, and inferences about change over time.

LEARNING OBJECTIVES:

Students in this course are expected to have familiarity with basic issues in research design and statistics commensurate with what is normally covered in BA45 and BA306 including linear and logistic regression. Please note, that if you are in doubt regarding your level of preparation, feel free to contact me, and we can together determine whether the course is a good fit for your interest. I would rather make the course as accessible as possible than enforce prerequisites too strongly.

INSTRUCTIONAL METHODS:

The emphasis will be on learning by solving problems. Every student is welcome to participate in intensive classroom activities. Reading and problem solving assignments will be given throughout the course. Homework will be assigned and solved during sections. Suring lectures, students will learn principles and concepts covered in the text as well as in various sources on relevant topics. There may be class discussions and group presentations by students on the project assignments during class.

CLASS ATTENDANCE:

Students are expected to attend class on a regular basis. Attendance is crucial to performing well in this course, as some of the material presented may not be found in the textbook. Further, the lecture and classroom demonstrations will emphasize and expand upon important topics found in the textbook. Thus, it is vital that you take thorough notes in class.

ASSIGNMENTS:

There will be a weekly homework assignment given out on Wednesday of each week. Students will have a chance to work on the homework during the week and the weekend, ask questions during class or visit me during my office hours, and turn the assignment the following Wednesday in class. These assignments will typically consist of some theoretical exercises, conducting analyses on provided data and turning in a results report (write-up) describing the findings, but may include other questions. The purpose of the assignments will be to provide a medium through which you really learn the material. Students are welcome to work with other classmates on the homework, but it is expected that each student turns in his/her own,

independently written, homework. Any indication that work was directly shared will not be tolerated and will result in a non-passing grade.
Please bring a ***hard copy*** of your ***typed and stapled*** homework assignment that has your name on it to class the day it is due. ***Please no e mailed assignments***. ***No late homework will be accepted!***

There will be a number of readings (mostly journal articles) assigned periodically in addition to the reading in the textbook.

In accordance with the university policy on cheating and plagiarism, any student who does not do his/her own write-up completely independently on any assignment will fail the assignment.

EXAMS:

There will be two exams — a midterm and a final. To assess your learning in this course, exam questions will be derived from the lecture and textbook. Topics covered in lecture will be of major emphasis on the exam, and should be the focus of your textbook readings, though there will be some test questions found in the assigned readings but not covered in the lecture. To avoid guessing, there will be no multiple-choice questions on the exams. Exams may include conceptual or theoretical questions, Excel output interpretations or questions that require simple calculations. On the day of the exam, remember to bring a non-graphing calculator (cell phone calculators are unacceptable). ***All exams are open books and open notes.***

QUIZZES:

To encourage attendance and to help students with assessment of their knowledge, there will be a set of unannounced quizzes given at the start of class. They will be based on lecture and any assigned reading. They will not be computational in nature, but rather conceptual questions intended to help students gauge how well they understand the material.

GRADING PLAN:

Percentage	Grade
90-100%	A
80-89%	B
70-79%	C
60-69%	D
below 60%	F

Weights	
Homework	20%
Quizzes and class participation	10%
Midterm	30%
Final	40%

CLASSROOM POLICY:

Please do not use personal computers, iPads or smart phones during the lecture. Unless you LaTeX, it is very hard to type up statistical formulas using keyboard. Please use pen and paper to take your notes. If you do need to text message or receive a call, please take it outside the classroom.

I am available and will do my best to help you learn and succeed. Questions and points of discussion are encouraged. I am also highly accessible for discussions if you wish to receive additional information or learn more about a certain topic or need help with data analysis. Please visit me during my office hours, or talk to me immediately after class, if you need study tips or additional help. No appointment is required for my office hours.

TENTATIVE CLASS SCHEDULE:

Week	Content
Week 1: January 19	Measurement. Measurement Theory.
Week 2: January 26	Statistical Concepts and Relations. Random Variables and Distributions.
Week 3: February 2	Introduction to Factor Analysis. Exploratory Factor Analysis.
Week 4: February 9	Introduction to Confirmatory Factor Analysis. Latent Variables.
Week 5: February 16	Confirmatory Factor analysis (con-ed).
Week 6: February 23	Higher-Order Factor Analysis.
Week 7: March 1	Introduction to Structural Equation Modeling
Week 8: March 8	Midterm.
Week 9: March 15	Spring Break.
Week 10: March 22	Classical Test Theory: Introduction.
Week 11: March 29	Classical Test Theory (con-ed).
Week 12: April 5	Classical Item Analysis in Tests.
Week 13: April 12	Item Response Theory: Introduction.
Week 14: April 19	Item Response Theory: 1PL, 2PL, 3PL.
Week 15: April 26	Review for Final Exam.
Week 16: May 3	Final exam.

Note: Instructor reserves the right to modify the content of this syllabus.

GOOD LUCK! Syllabus Reviewed: 1/14/2016