

SYLLABUS
ERM 669 - Item Response Theory

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Text: Introduction to Item Response Theory (1991), Hambleton, Swaminathan, & Rogers, Sage Series: Measurement Methods in the Social Sciences (R. Jaeger, Ed.) ISBN 0 8039 3745 8

Reference

Texts: Item response theory: principles & applications (1985). Hambleton & Swaminathan. Boston: Kluwer Publishing

Applications of item response theory to practical testing problems, Lord, F. Hillsdale, NJ: Lawrence Erlbaum Associates

Item response theory: parameter estimation techniques, Baker, F. B. (1992). New York: Marcel Dekker, Inc.

General: This course is an introduction to Item Response Theory (IRT). IRT is perhaps the most important innovation in educational and psychological measurement since the discipline was formalized almost 100 years ago. It represents the theoretical alternative to what is known as Classical Test Theory.

Upon successful completion of the course, you should be know and understand

- the essential concepts and terminology of IRT
- the mathematical and theoretical rational underlying IRT
- a least one reputable IRT computer program
- you should also be able to read and understand the published literature on IRT.

Grading: Your grade in this course will be based upon the following:

- reading the weekly assignments
- turning in weekly assignments
- performance on a take-home, mid-tern examination
- one in-class presentation on a published article (it may be either a theoretical paper or an application of IRT)
- performance on a take-home final examination

The first two criteria will together constitute approximately 25 percent on your grade. The last three will constitute the remaining 75 percent (25% each)

THEORY

Weeks 1 and 2	Review of Classical Test Theory (Handout)
Weeks 3 & 4	Basic Concepts of IRT
Week 5	Parameter Estimation
Week 6	The Ability Scale (Theta) “True Score” and IRT Item & Test Information
Week 7	Assessing model-data fit/BICAL
Week 8	BICAL cont’d Mid-term examination

APPLICATIONS

Week 9	Identifying biased items
Week 10	Test score equating
Week 11	Computer Adaptive Testing
Weeks 12 – 15	Class Presentations
Week 16	Final Examination