



ACER's Foundations in Applied Measurement in Education (FAME) is a suite of 8 short, online, modular courses with facilitated live sessions.

## Rasch modelling short courses cover:

- ✓ introductory concepts and theoretical understanding of educational assessment and measurement
- ✓ item and test analysis
- ✓ differential item functioning
- ✓ test equating
- ✓ psychometric analysis reports
- ✓ large-scale analysis of educational data

**COURSES 1 AND 2** Focus on the theoretical foundations that are essential to large-scale educational assessment.

**COURSES 3 TO 8** Focus on applying the skills and require ConQuest® software. Course 7 and 8 is offered for advanced analysis of large-scale education data.

For more information about ConQuest®, please go to the ACER ConQuest webpage <https://www.acer.org/au/conquest>

## FAME 1 Foundations of educational measurement

Introduces the foundational concepts of educational assessment and measurement. Examines key concepts of reliability, validity, latent variables and measurement error. Covers basic statistical concepts used in educational measurement and reporting.

Beginner level or refresher

1 day

No additional software

## FAME 2 Classical Test Theory and Item Response Theory

Provides a broad overview of technical aspects of constructing measures, starting with a comparison of Classical Test Theory and Item Response Theory. Participants learn to evaluate how different data and metrics can contribute evidence about the validity and reliability of measures, with an initial focus on the quality assurance of assessment tasks and test questions. Practical exercises teach participants to interpret a range of psychometric analysis outputs giving due consideration to measurement error.

Advanced beginners/  
FAME 1

1 day

No additional software

## FAME 3 Item and test analysis using ConQuest®

Involves conducting and interpreting a psychometric analysis of a multiple-choice assessment using ConQuest® software to inform refinements to an existing measure. It analyses assessment items where partial credit scoring applies. Participants apply both the Rasch model and the Rasch Partial Credit Model.

Intermediate–proficient  
level/FAME 1&2/  
Experienced analysts

1.5 days

ConQuest® software

## FAME 4 Differential Item Functioning (DIF)

Explores important validity and comparability questions through an Item Response Theory paradigm by introducing participants to Differential Item Functioning (DIF) and requiring them to undertake a DIF analysis using ConQuest®.

Proficient–advanced/FAME 1–3/  
Experienced analysts

2 days

ConQuest® software

## FAME 5 Test equating

Explores test equating methods using the Rasch model. Participants will learn to equate 2 assessments on a common measurement scale through common item equating.

Advanced/FAME 1–3/  
Experienced analysts

2 days 

ConQuest® software

## FAME 6 Automated psychometric analysis reports with *conquestr*

Introduces participants to the *conquestr* package that interfaces with ConQuest® software. Participants will use R and RStudio with *conquestr* output to produce an automated and reproducible psychometric analysis and reporting workflow for quality assuring multiple-choice assessments.

Advanced/FAME 1–3/  
Experienced analysts

1.5 days 

ConQuest®, *conquestr*  
and RStudio software

## FAME 7 Working with plausible values

Introduces the theory behind different item response models and case ability estimation routines that can be used to estimate population parameters reliably. Participants will apply this knowledge to fit a combined item response and population model, similar to those seen in large-scale assessment programs such as NAPLAN and the Programme for International Student Assessment, and to correctly apply the law of total variance to undertake secondary analysis to yield unbiased population parameter estimates.

Advanced/FAME 1–6/  
Experienced analysts

2 days 

ConQuest®, *conquestr*  
and RStudio software

## FAME 8 Complex survey designs in large-scale assessment

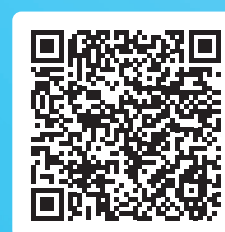
Introduces complex survey designs used in large scale assessment programs to accurately estimate population parameters that are representative of national or sub-national populations of interest. Participants will apply this knowledge to correctly apply the law of total variance to undertake secondary analysis to yield unbiased population parameter estimates using plausible values, and in addition using replicate weights to perform re-sampling to account for sampling error.

Advanced/FAME 1–6/  
Experienced analysts

2 days 

ConQuest®, *conquestr*  
and RStudio software

For more information about pricing and tailored group sizes contact [fame@acer.org](mailto:fame@acer.org)



scan for  
more info



Bundle 1: Courses 1 through 3  
**\$2700** ex GST

Bundle 2: Courses 1 through 6  
**\$5500** ex GST

Bundle 3: Courses 3 through 6  
**\$4400** ex GST

Bundle 4: Courses 7 and 8  
**\$3000** ex GST

Optional: Bring your own data (BYOD) sessions for Course 3 and 4  
**\$500** ex GST per session

-  provides participants with an opportunity to apply newly learnt skills to their own data, share results with facilitators and have live Q&A
-  an 1-hour workshop (in addition to standard inclusions) for each BYOD session

Organisations can have bespoke tailored versions of FAME delivery, suited to the needs of the individual organisation, collaborating with ACER to define scope.