

# AFGROW 4-day Class Standard Training Syllabus

## Day 1

- **LEFM fundamentals**
  - Fundamental Concepts
  - Life Prediction Example
  - Definition of Stress Intensity
  - Crack Closure Concept
  - Relationship Between Stress Intensity and Crack Growth
  - Life Prediction Using Excel
- **AFGROW Basic Assumptions/Limitations**
- **AFGROW GUI Layout and Flow**
- **Spectrum**
  - Terminology
  - Spectrum Format
  - Spectrum Management Tool
  - Spectrum Development Examples

## Day 2

- **Main Modules**
  - Stress Intensity/Beta Factors (Geometry)
    - Classic Cases (*User Defined, Application Defined, Weight Functions, Special Cases*)
    - Advanced Models
    - Beta Correction
    - Beta Modification (K-Solution Filters)
  - Crack Growth Rate Models
    - Review of Available Models in AFGROW
    - Example Using Tabular Rate Data (Class Participation)

## Day 3

- **Main Modules, Continued**
  - Review Tabular Curve Fits

- Stress State and Failure Criteria
- Retardation Models
- Residual Stresses
- User Defined Preferences
- Advanced Models
- Continuing Damage
- Crack Initiation
- Additional Tools
- **Examples (Class Participation)**

#### Day 4

- **Overview of New AFGROW Capabilities and Features in Release 5.4**
- **AFGROW Tips and Tricks**
  - Using superposition to model complex geometries
  - Getting more out of the Advanced Modeling Capability
  - Using AFGROW to generate crack growth reports
- **Fracture Mechanics Database**
- **AFGROW Automation**
  - COM Examples (Class Participation)
  - Plug-Ins
- **Closing Statements / Q&A Session**