DO-178C Training Program Syllabus:

- **Day One:**
  - DO-178C Overview covering the main document, including all of its subsections.
  - Appendix A,
  - Annex A: Process Objectives and Outputs by Software Level
  - Introduction to DO-178C Technology Supplements

- **Day Two:**
  - DO-178C Software Requirements Engineering (half day):
    - Characteristics of requirements (with exercises)
    - Developing requirements (how to successfully decompose higher level requirements)
    - Managing requirements (traceability centric versus document centric management)
    - Reviewing requirements (how to review requirements to identify issues and errors early)
    - Verifiability (how to construct requirements to foster better testing & analysis)
  - DO-178C Software Verification (half day):
    - The strata of software verification:
      - Artifact reviews & analyses
      - Software/Hardware integration testing
      - Software integration testing
      - Low level testing
    - Troubleshooting test cases (a brief tutorial)
    - Coverage analyses:
      - Requirements coverage analysis
      - Structural coverage analysis
      - Resolving coverage holes
    - Software Testing Techniques
      - Selection of test type (selecting the best level of test for the requirement)
      - Normal Range and Robustness (managing equivalence classes)
      - Value Stressing
      - Time-based testing
        - Internal versus external triggered timing
        - Stimulus-response testing
        - Why software-only testing for timing is less meaningful
      - Structural coverage (defining the test cases from requirements)
      - Path-based testing techniques/analysis of test coverage
- **Day Three (using LCMS):**
  - Overview of certification
  - Certification evidence (the SOIs, and what will be looked at)
  - SOI-1, the Planning Review:
    - The plans & standards
    - Evidence of reviews
    - Coherence of the plans
    - Configuration Management
    - Software Quality Assurance

- SOI-2, the Development Review:
  - The system requirements
  - High-Level Software Requirements
  - Software Architecture
  - Software Design
  - Source Code
  - Executable Object Code
  - Evidence of Reviews
  - Reentrancy in the Development Processes
  - Configuration Management
  - Software Quality Assurance
- SOI-3, the Verification Review:
  - Software Test Cases and Procedures
  - Software Test Results
  - Evidence of Reviews
  - Evidence of Test Execution
  - Configuration Management
  - Software Quality Assurance
- SOI-4, the Final Review:
  - Software Conformity Review
  - Software Accomplishment Summary
  - Software Configuration Index
  - Software Lifecycle Environment Configuration Index
  - Configuration Management
  - Software Quality Assurance