Aircraft Icing: Meteorology, Protective Systems, Instrumentation and Certification (AERO0060)

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Course Highlights

- Description of aircraft icing, severity, types and photos
- Atmospheric aerosols
- Cloud physics of icing and conceptual cloud modes
- Ground icing
- Skew-T, Log P adiabatic diagrams
- Assessment of icing potential
- Critical icing parameters, theory and measurements
- Meteorology of SLD icing
- Finding and avoiding icing conditions
- Discussion of sources and meaning of available forecast information
- Ice accretion characteristics
- Effects of ice on aircraft performance
- Anti-ice and de-ice systems
- Icing instrumentation and detection
- Effect of SLD on aircraft
- Engine icing considerations
- Ice-testing methods
- Certification and regulations
- Conceptual methods

Course Description

This course covers meteorology and physics of aircraft icing: forecasting, finding and avoiding icing conditions, designing and evaluating ice protection systems; and certification of aircraft for flight into known icing conditions.
Who Should Attend?
Designed for aerospace engineers, flight test and design engineers, test pilots, line pilots, meteorologists, FAA engineers and Designated Engineering Representatives (DERs), and program managers.

Learning Objectives

- Basic physics of aircraft icing
- Basic understanding of the meteorology of aircraft icing
- How to obtain icing forecast information to find or avoid icing conditions
- Background and discussion of key aircraft icing accidents
- An understanding of the icing problems associated with Supercooled Large Droplets (SLD)

Course Outline

Day One

- Icing hazard description
- Atmospheric aerosols
- Cloud physics of icing
- Ground icing, atmospheric cooling mechanisms
- Conceptual cloud modes: convective clouds, stratiform clouds
- Skew-T, Log P adiabatic diagrams

Day Two

- Icing environment analysis using Skew-T, Log P
- Assessment of icing potential
- Critical icing parameters, theory and measurements
- Meteorology of supercooled large drops (SLD icing)
- Finding/avoiding icing conditions
- New and current icing research
- Internet resources

Day Three

- Ice accretion characteristics
- Effects of ice on aircraft performance
- Anti-ice systems
- De-ice systems
- Icing instrumentation, icing environment
- Icing detection
Day Four

- Effect of SLD on aircraft
- Engine icing considerations
- Ice-testing methods
- Certification and regulations
- Computational methods
- Review and discussion

Classroom hours / CEUs
28.00 classroom hours
2.8 CEUs

Certificate Track
Aerospace Compliance, Aircraft Maintenance and Safety

Course Fees
Early registration course fee: $2,195 if you register and pay by the early registration deadline (45 days out).

Regular registration course fee: $2,395 if you register and pay after the early registration deadline.

U.S. Federal Employee Discount
This course is available to U.S. federal employees at 10% off the registration fee. To receive the federal employee discount, you must enter the code FGVT116 during the checkout process. Please note that you must validate your eligibility to receive this discount by entering your U.S. government email address (ending in .gov or .mil) when creating your online registration profile. This discount is available for both the early registration and regular registration fees.

Canada Department of National Defence Discount
This course is available to Canada DND employees at 10% off the registration fee. Please contact the DND Procurement Authority (DAP 2-3) for details. Please note that you cannot register using our online system when requesting this discount. This discount is available for both the early registration and regular registration fees.

Netherlands Defence Academy Discount
This course is available to Netherlands Defence Academy employees at a discounted registration fee. Please contact the NDA Procurement and Contracting department for details. Please note that you cannot register using our online system when requesting this discount.
This class is available for delivery at your company.
Your company can realize substantial savings by bringing an aerospace short course to your workplace. On-site delivery is ideal for organizations that need to train 10 or more employees on a specific topic. For more information on on-site course delivery, or to request a cost proposal, please contact us at 913-897-8782, or email us at ProfessionalPrograms@ku.edu.

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