

University of Southern California
Aviation Safety and Security Program
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Aviation Safety + Security Program

NEW ARTIFICIAL INTELLIGENCE SYSTEM SAFETY (AISYS) COURSE

NEW HUMAN PERFORMANCE AND RESILIENCE (HPRL) COURSE

AIRCRAFT ACCIDENT INVESTIGATION – TWO WEEKS AT LAB

**ACCIDENT/INCIDENT RESPONSE PREPAREDNESS (AIP) –
ADDS EMERGENCY RESPONSE PLAN EXERCISE**

ADDED ONLINE AND HYBRID COURSES

MESSAGE FROM THE DEAN

I recently spoke on *The Importance of Being Enduring*. It was on the occasion of the seventieth anniversary of this program, the Aviation Safety and Security Program. But my comments called to mind a larger question — “What has caused this program to endure for so long?” Upon reflection, there can be only one possible answer: enduring value.

Maintaining enduring value in an ever-changing industry is a difficult but necessary task. Organizations that can do it are organizations that have *resilience* engineered into the very fabric of their operations. Such is this program.

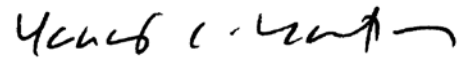
Recently, we have seen numerous occurrences of air safety mishaps that were generally considered to have been solved years ago. Such is the complex nature of progress — it is not strictly linear. We cannot afford to forget the hard-learned lessons of the past. To be relevant and resilient we must develop mindsets of agility and adaptability and acquire a deeper understanding of the environment and culture in which we operate. We cannot practice safety and safety engineering in a vacuum.

Engineers make good things happen, which is the nature of this program. Those who have participated in our program have participated in the historically high rate of accident-free flights across the globe. The Aviation Safety and Security program strives to lead the global conversation on how to keep our aviation system safe and how to make it safer. The participants in our program come from diverse regions of the world with the same goal — to benefit humanity at large through a safe aviation system. Not content to adapt to change, we have developed a new course *Artificial Intelligence System Safety* which leads participants to understand how to safely develop and integrate artificial intelligence into complex technical systems and devices. It is a course that has international applications.

We continue to be grateful for the trust that the many international organizations place in us by sending participants to our courses. Included among them are the regulatory authorities of South Korea, Canada, France, Germany, India, and Malaysia and the air force agencies of the Netherlands, Canada, Taiwan, Denmark, Ireland, South Korea, Brazil, and Hungary.

USC strives to be the university of choice for future leaders from all over the world. The USC Aviation Safety and Security Program continues to make strong contributions to this effort and will continue to do so for years to come.

Thank you, and Fight On!



*Yannis C. Yortsos, Dean
USC Viterbi School of Engineering*

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USC AVIATION SAFETY AND SECURITY PROGRAM

In 1952, USC established the first Aviation Safety Program at a major research university. Since then the program has gained a highly respected reputation with more than 28,700 aviation professionals from over 70 nations having completed its courses.

The program was originally developed by a project team of faculty from three disciplinary areas: engineering, management and psychology. The courses they developed integrated appropriate subject matter from these areas into a comprehensive systems approach to safety.

There are 27 different courses available, with approximately 58 total sessions scheduled each year. Courses are scheduled consecutively to permit out-of-state and international students to complete a sequence of courses or an entire certificate program in one stay. In addition to the scheduled courses, contract courses are conducted at locations worldwide.

The Certificate Program in Aviation Safety and Security, which requires an individual to complete a series of courses, has been completed by over 2575 students.

A brief list of organizations with employees who have attended includes:

International air carriers recognized for their outstanding safety records including Air New Zealand, British Airways, Cathay Pacific Airways, Emirates, EVA Air, KLM Royal Dutch Airlines, Lufthansa, Qantas, SAS, Singapore Airlines, Swiss Airlines, Virgin Atlantic, Virgin Australia;

U.S. government agencies managing air safety and accident investigations and recommendations — the FAA and the National Transportation Safety Board, US Customs and Border Protection, the FBI and the equivalent agencies of Canada, France, Great Britain, Italy, Japan, New Zealand, Nigeria, Republic of Korea, Singapore, South Africa, Taiwan, Trinidad & Tobago, and Brazil;

The U.S. Army, Air Force, Marines, Navy, Space Force and Coast Guard;

All U.S. major air carriers and aircraft manufacturers;

Other international air carriers including Air Astana, Air Canada, Alitalia, Copa Airlines, Egypt Air, El-Al Israel Airlines, Etihad Airways, Kenya Airways, Royal Jordanian Airlines, and Saudi Arabian Airlines;

International aircraft manufacturers including Airbus, Airbus Helicopters, Embraer, Bombardier, and Mitsubishi;

International military organizations including the Canadian Armed Forces, Chilean Air Force, Colombian Air Force, Ecuadorian Air Force, Irish Air Corps, Italian Air Force, Ministry of Defence Hungary, Navy of Mexico, Republic of Korea Air Force, Republic of Singapore Air Force, Royal Air Force, Royal Danish Air Force, and the Royal Netherlands Air Force;

Aviation elements of the United Nations, International Civil Aviation Organization (ICAO) and the World Food Program.

Continuing Education Units (CEU's) are available upon request. One CEU is awarded for every 10 hours of instruction.

More information can be accessed on our website,
<https://aviationsafety.usc.edu>.

AVIATION SAFETY AND SECURITY CERTIFICATE PROGRAM

Individual courses are designed to provide the student with expertise in a particular subject area. While each course is constructed as a whole and taught independently of the others, those interested in preparing for a full-time career in aviation safety should consider a program of courses that provides broad knowledge. We award the University of Southern California's *USC Aviation Safety and Security Certificate* to those successfully completing the required program. It certifies completion of training in several multidisciplinary areas including Aviation Safety Management Systems, Accident Investigation, and Human Factors.

Students satisfying the four categories below will be awarded the *USC Aviation Safety and Security Certificate*. There is a 7-year time limit for completion of the certificate program.

1. One of the following:
 - Aviation Safety Management Systems (ASMS)
 - Safety Management for Aviation Maintenance (MAINT)
 - Safety Management for Remotely Piloted Aircraft (RPSM)
 - System Safety (SSC)
2. One of the following:
 - Aircraft Accident Investigation (AAI)
 - Helicopter Accident Investigation (HAI)
 - Gas Turbine Engine Accident Investigation (GTAI)
3. One of the following:
 - Human Factors in Aviation Safety (HFH)
 - Human Factors in Aviation Maintenance (HFMX)
 - Human Performance and Resilience (HPRL)
- 4a. Two of the following:
 - Photography for Aircraft Accident Investigation (PHOTO)
 - Threat and Error Management (TEM)
 - SMS for Ground Operation Safety (SMS-RAMP)
 - SMS for Airport Construction Operations (SMS-ACO)
 - SMS for Managers (SMS-MGR)
 - Safety Performance Indicators (SPI)

Or
- 4b. One of the following:
 - Aviation Security Program Management (AVSEC)
 - Software Safety (SFT)
 - Advanced Software Safety (ADVSFT)
 - Accident/Incident Response Preparedness (AIP)
 - Incident Investigation/Analysis (IIA)
 - Data for Aviation Safety Management (DATA)
 - Aviation Law & Aviation Dispute Resolution (LEGAL)
 - One additional management course from #1
 - One additional accident investigation course from #2

SYSTEM SAFETY CERTIFICATE PROGRAM

The USC Aviation Safety and Security Program also offers a certificate program in System Safety. This certificate is designed to address the needs of engineers and project managers with responsibilities for system safety. The principle method of system safety analysis and the extension of this program plan are taught in the flagship class of the certificate program — System Safety. The emphasis is on complex, high technology programs.

Today's systems are highly dependent upon software to operate and monitor. Software requires special attention in system planning, architecture, design and test. The Software Safety Course teaches software design principles which are fault tolerant and acceptably safe.

System safety analysis of engineered systems must often deal with the possibility of human error leading to adverse conditions. Therefore, human error probability evaluation is an essential element in system safety analysis and a fundamental part of the curriculum. The three courses: System Safety (SSC), Software Safety (SFT), and Human Error Analysis for System Safety (HEASS) form the three core courses of the System Safety Certificate Program. Additionally, in order to complete the requirements of the System Safety Certificate, two short elective courses are necessary.

Students have 7 years from the start of their first course to complete the System Safety Program certificate requirements. The program certificate can be completed with 4 or 5 courses, depending on the courses chosen to attend. All courses are Monday through Friday, 8:00 AM to 4:00 PM, unless stated otherwise. A course listed with a half-day ends at noon on the last day of the course.

To complete the program certificate individuals must meet the following requirements:

1. Complete each of the following 3 required courses:

System Safety (SSC)	9.5 day course
Software Safety (SFT)	4 day course
Human Error Analysis (HEASS)	2 day course
2. One of the following courses:

Advanced System Safety (ADVSS)	4.5 day course
Advanced Software Safety (ADVSFT)	4 day
Artificial Intelligence System Safety (AISYS)	4.5 day
System Safety Damage and Injury Assessment and Mitigation (DIAM)	4.5 day

AVIATION SAFETY AND SECURITY CERTIFICATE PROGRAM SERIES

For individuals interested in completing the Aviation Safety and Security Certificate Program entirely in one continuous time frame, we are offering the following series:

CERTIFICATE SERIES	COURSE NO.	DATES
Series 24A		
ASMS	24-1	11 – 22 Sep 2023
AAI	24-1	25 Sep – 06 Oct 2023
IIA	24-1	09 – 13 Oct 2023
HFH	24-2	16 – 20 Oct 2023
Series 24B		
IIA	24-1	9 – 13 Oct 2023
HFH	24-2	16 – 20 Oct 2023
RPSM	24-1	23 – 27 Oct 2023
HAI	24-1	30 Oct – 03 Nov 2023
Series 24C		
HFH	24-2	16 – 20 Oct 2023
RPSM	24-1	23 – 27 Oct 2023
HAI	24-1	30 Oct – 03 Nov 2023
ASMS	24-2	06 – 17 Nov 2023
Series 24D		
HFH	24-2	16 – 20 Oct 2023
GTAI	24-1	23 – 27 Oct 2023
HAI	24-1	30 Oct – 03 Nov 2023
ASMS	24-2	06 – 17 Nov 2023
Series 24E		
HFH	24-2	16 – 20 Oct 2023
GTAI	24-1	23 – 27 Oct 2023
DATA	24-1	30 Oct – 03 Nov 2023
ASMS	24-2	06 – 17 Nov 2023

Series 24F

GTAI	24-1	23 – 27 Oct 2023
DATA	24-1	30 Oct – 03 Nov 2023
HFMX	24-1	06 – 10 Nov 2023
MAINT	24-1	13 – 17 Nov 2023

Series 24G

GTAI	24-1	23 – 27 Oct 2023
HAI	24-1	30 Oct – 03 Nov 2023
HFMX	24-1	06 – 10 Nov 2023
MAINT	24-1	13 – 17 Nov 2023

Series 24H

ASMS	24-4	08 – 19 Apr 2024
HFMX	24-2	22 – 26 Apr 2024
AAI	24-4	29 Apr – 10 May 2024
AVSEC	24-2	13 – 17 May 2024

Series 24I

ASMS	24-4	08 – 19 Apr 2024
HFMX	24-2	22 – 26 Apr 2024
AAI	24-4	29 Apr – 10 May 2024
SFT	24-2	13 – 16 May 2024

Each course in a certificate program series must be registered for individually. You may list up to 6 courses on one registration form.

The USC Aviation Safety and Security Certificate Program has been accepted by the FAA Aviation Maintenance Technical Award Program to assist in qualifying for awards in that program. Portions of the training requirements for each of the award levels can be satisfied using training received in this program. Reference [faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentid/1029857](https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentid/1029857) for further information. CEU's earned while attending classes in the USC Aviation Safety and Security Program may be used towards receiving the FAA's highest award, the William (Bill) O'Brien Aviation Maintenance Award, given to eligible technicians and their employers [please see FAA Advisory Circular (AC) 65-25F for eligibility requirements].

Several of the courses are credited toward the National Business Aviation Association's (NBAA) Certified Aviation Manager (CAM) Program and

several courses accrue credit for the FlightSafety International's Master Technician Program. Please see Registrar for additional details.

In addition, the International Federation of Air Line Pilots' Association (IFALPA) recognizes recipients of the USC Aviation Safety Certificate as experts in Aviation Safety.

CONTRACT COURSES

Contract courses are courses from the USC Aviation Safety and Security Program that are offered at locations other than our Los Angeles classroom facilities. Any course in the catalog may be offered as a contract course. Courses may be conducted at international locations or at a location within the United States. Frequently, organizations striving to provide aviation safety or systems safety education for numerous members of their organization choose to arrange for a contract course at their own facility.

In the recent past, numerous contract courses have been provided at international locations in Asia, Europe, Oceania, Africa, and the Caribbean. Typically, civil aviation authorities, airlines, and other government organizations require contract courses when they have a large number of students interested in education.

Organizations such as Air New Zealand, CAA of South Africa, CAA of Trinidad and Tobago, Executive Jet, ConocoPhillips, Federal Aviation Administration, FedEx, Fiji Airways, Google, Gulf Stream, Hawaii Department of Transportation, IFALPA, Korean Airlines, NASA, Republic of Singapore Air Force, U.S. Army, U.S. Navy, Verizon and Walmart Aviation have arranged contract courses.

The contract course can provide an organization with an economical vehicle for providing aviation safety or system safety education to a large number of employees within a relatively short amount of time as well as the ability to customize a course for an organization's particular needs. The Aviation Safety and Security program can, upon request, host contract courses at USC's Capital Campus located at 1771 N St. NW, Washington, DC (Dupont Circle). Inquiries regarding contract courses should be made to the USC Aviation Safety and Security Program Director, or the Contract Course Coordinator at hinaba@usc.edu.

AVIATION SAFETY MANAGEMENT SYSTEMS (ASMS)

A Safety Management System (SMS) is now a requirement for international commercial aircraft operators, international airports, and air traffic services. The standards and implementing procedures for SMS have been established by the International Civil Aviation Organization (ICAO). All 191 countries that are members of ICAO have established or are establishing regulatory requirements for the implementation of SMS. This course teaches how organizations can establish a SMS within the context of their current safety system that meets the basic international standards of ICAO. The SMS Framework serves as a central foundation for this course.

SMS is a safety system by which an organization takes a more active role in the identification, analysis and mitigation of safety issues that occur in the normal operation of their organization. SMS requires that organizational management take responsibility for the company's safety program. The SMS approach requires the safety/quality team be educated in their duties and responsibilities. This course will provide you with the essential skills needed to manage an organizational Safety Management System (SMS). The attendee will be able to manage a Safety Management System that includes risk management, audits, data collection, analysis, and incident investigations.

This course is designed for the individual responsible for planning or directing an aviation Safety Management System program. Fundamentals in systems organization and structure provide the individual with the essential skills and methodology needed to plan and manage an effective program. Emphasis is placed on understanding the principles of risk management, identifying program development strategies, audits and applying the knowledge toward effective management systems and interoperability with Quality Assurance.

Objectives: To provide the individual with the skills and practical methods to plan, manage and maintain an effective Aviation Safety Management System (SMS).

Who Should Attend: Individuals responsible for planning, directing or managing an aviation safety management program and supervisors who are required to supervise an accident prevention/risk management program. This includes airline, commuter, corporate, fixed base operator, government, insurance, hospital emergency medical service, law enforcement and airport management.

Course Outline

1. Safety Management Systems (SMS)
 - Accident Prevention Concepts/Methods
 - Safety Systems
 - Safety Risk Management
 - The Failure Modes and Effects Analysis (FMEA) Process
 - Human Factors
 - Root Cause Analysis
 - International Procedures
 - Interaction with Quality Assurance
 - Education and Training
 - Corporate Safety Culture
 - Motivating Safe Behavior
 - Role of Management
 - Safety Climates/Management Styles
 - Cost of Accidents
 - Risk Identification
 - Incident Investigation
 - Change Management Process
 - Risk Management and Risk Assessment
 - Report Writing
 - Airfield Safety
 - Accident Response Planning
 - Audits
 - Safety Analysis
 - Aviation Safety Advisor Duties
 - SMS Framework
2. Communication Skills
 - The Importance of Communication in Aviation Safety
 - A Matrix Approach to Communication in Aviation Safety
 - Perception
 - Meaning/Language/Jargon
 - Information Overload
 - Effective Safety Meetings
 - Listening
3. Medical Issues
 - Fatigue Risk Management Systems
 - Sleep and Fatigue
 - Stress

4. Ramp/Maintenance Safety

5. Legal Aspects

ICAO Annexes 6, 14, 19

ICAO Doc. 9859

FAA 14 CFR 5

6. Practical Applications/Case Study

CEU: 6.7

Course Duration: 9.5 Days

Course No.	Dates	Tuition
ASMS 24-1	11 – 22 Sep 2023	\$4,125
ASMS 24-2	06 – 17 Nov 2023	\$4,125
ASMS 24-3	22 Jan – 02 Feb 2024	\$4,125
ASMS 24-4 (online)	08 – 19 Apr 2024	\$4,125
ASMS 24-5	03 – 14 June 2024	\$4,125
ASMS 25-1	09 – 20 Sep 2024	TBA
ASMS 25-2	11 – 22 Nov 2024	TBA

SAFETY MANAGEMENT SYSTEMS FOR REMOTELY PILOTED AIRCRAFT (RPSM)

This Safety Management for Remotely Piloted Aircraft (RPSM) course is designed to apply the proven safety procedures of SMS to the operation of UAV's/RPA's. Experts from the fields of RPA Human Factors, RPA Safety Management Systems, and RPA Piloting introduce students to the theory and application unique to unmanned aircraft. By addressing the characteristics that differ between manned and unmanned air vehicles, the course applies the latest approaches to accident investigation and Safety Management. Students come away with a working knowledge of the safety field pertaining to Remotely Piloted Aircraft which they can apply to their own organization's operations and future planning.

Objectives: To provide the individual with the skills and practical knowledge to plan, manage and maintain an effective Safety Management Strategy in the operation of Remotely Piloted Aircraft in a variety of environments.

Who Should Attend: Individuals responsible for planning, directing or managing an aviation safety program and supervisors who are required

to supervise an accident prevention/risk management program that may work with or operate Remotely Piloted Aircraft. This includes all classifications and sizes of Unmanned Systems throughout the world — military, civilian, and public-use.

Course Outline

1. Human Machine Interface Theory and Problems

Crew Communication Conditions & Technological Implications to Communications

How Maintenance Responsibilities Differ Between Manned and Unmanned Aviation

Understanding the Unique Characteristics with RPA Operational Environments

Automation and Flight Planning

2. SMS Theory & Practice

Data Acquisition & Analysis

Organizational Risk Management for RPA

Risk Mitigation & Analysis

International Organization Standards & Participation

SMS Requirements & Guidance

Developing Hazard Identification Processes for RPA

Organizational Risk Management for RPA

Operations Management

3. Basics of Investigation

Special Considerations for RPA Investigation

Accident Investigation Techniques for RPA

Using UAS for Accident Investigation

4. Regulatory and Operational Environment

Basic Types & Applications – Components, Systems, etc.

FAA Regulations & Legislation for RPA

International Organization Standards & Participation

Certificates of Authorization and Special Certificate of Airworthiness – Process and Function

International Regulatory Framework and Development

RPA Roadmap for Integration

5. Lab Day for Practical Application

CEU: 4.0

Course Duration: 5.0 Days

Course No.	Dates	Tuition
RPSM 24-1	23 – 27 Oct 2023	\$3,250
RPSM 24-2	11 – 15 Mar 2024	\$3,250
RPSM 25-1	14 – 18 Oct 2024	TBA

SAFETY MANAGEMENT FOR AVIATION MAINTENANCE (MAINT)

This course provides supervisors with aviation safety principles and practices needed to manage the problems associated with aircraft maintenance operations. In addition, it prepares attendees to assume safety responsibilities in their areas of operation. It does not teach aircraft maintenance and assumes the attendee has a maintenance background.

Objectives: To provide the individual with maintenance safety principles and guidelines for the development of effective maintenance safety programs.

Who Should Attend: Aircraft maintenance supervisors at all levels.

Course Outline

1. SMS for Aviation Maintenance
 - Role of Management and Leadership
 - Safety Risk Management
 - Safety Assurance
 - Safety Promotion for Maintenance Technicians
 - The Failure Modes and Effects Analysis (FMEA) Process
 - Major Problems in Prevention
 - Prediction
 - Communication
 - Influencing Management
 - Safety Program Organization
 - Overall Responsibility
 - Organization
 - Motivating Safe Behavior
 - Safety Climates/Management Styles
 - Time Management
 - Safety Meetings/Committees
 - Administrative Procedures

Reporting Systems
Education and Training
New Mechanics/Safety Personnel
Accident Response Planning
Inspections/Audits/Surveys
Purpose
Self-Inspections
Compliance
Management
Contractor Provided Services

2. Flight Line Safety
3. Aircraft Maintenance Safety
4. ICAO Annex 19 Safety Management
Safety Management Manual Doc 9859

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
MAINT 24-1	13 – 17 Nov 2023	\$2,950
MAINT 24-2	29 Apr – 03 May 2024	\$2,950
MAINT 25-1	18 – 22 Nov 2024	TBA

AIRCRAFT ACCIDENT INVESTIGATION (AAI)

****This course is now conducted entirely at our lab located at 905 Westminster Ave, Alhambra, CA 90045. Please book hotels accordingly.****

The course is designed for individuals who have limited investigation experience. All aspects of the investigation process are addressed, starting with preparation for the investigation through writing the final report. It covers National Transportation Safety Board and International Civil Aviation Organization (ICAO) procedures. Investigative techniques are examined with emphasis on fixed wing investigation. Data collection, wreckage reconstruction and cause analysis are discussed in the classroom and applied in the lab.

The USC Aircraft Accident Investigation lab serves as the location for practical exercises. Thirteen aircraft wreckages form the basis of these investigative exercises. The crash laboratory gives the student an opportunity to learn the observation and documentation skills required of accident investigators. The wreckage is examined and reviewed with investigators who have extensive actual real-world investigation experience. Examination techniques and methods are demonstrated along with participative group discussions of actual wreckage examination, reviews of witness interview information, and investigation group personal dynamics discussions.

Objectives: To provide concepts and practical techniques on aircraft investigation methodology, and prepare an individual to participate in an aircraft accident investigation.

Who Should Attend: Persons associated with aircraft accident investigation including manufacturers, operators, associations, insurers, air carriers, government agencies, law enforcement and military.

Course Outline

1. Investigations

- Introduction and History
- Authority and Theory
- Principles of Investigation
- Initial Actions
- Site Safety
- On-Scene Investigation Procedures
- Investigation of Aircraft Fires
- Reciprocating Engines and Propellers
- Gas Turbine Engines
- Systems Investigation
- In-flight Breakup and Midair Collisions
- Technical Assistance
- Analysis and Report Writing
- Flight Data Recorders
- Cockpit Voice Recorders

2. Technology

- Types of Material Failures
- Metal and Composite Materials
- Identifying Failures in the Field
- Understanding Aircraft Stability
- Aerodynamics – Accident Cause or Contributor

3. Human and Biomedical Factors

- Human Factors
- Casualty Identification
- Aeromedical Role in Investigation

4. Accident Investigation Laboratory

- Wreckage Observation/Familiarization
- Wreckage Examination/Documentation
- Investigation Organization at Accident Site
- Accident Site Hazards and Safety
- Investigative Group Interactions

CEU: 6.7

Course Duration: 9.5 Days

Course No.	Dates	Tuition
AAI 24-1	25 Sep – 06 Oct 2023	\$4,125
AAI 24-2	04 – 15 Dec 2023	\$4,125
AAI 24-3	26 Feb – 08 Mar 2024	\$4,125
AAI 24-4	29 Apr – 10 May 2024	\$4,125
AAI 25-1	23 Sep – 04 Oct 2024	TBA
AAI 25-2	02 – 13 Dec 2024	TBA

HELICOPTER ACCIDENT INVESTIGATION (HAI)

The course examines the investigation of helicopter accidents to include processes used to determine the cause. The course includes interactive lecture, various case studies, examination of component wreckage in the classroom and helicopter wreckage examination in a laboratory. The course includes examination of helicopter rotor systems, controls, performance variables, flight hazards and material characteristics involved in helicopter operations and accidents. Although Aircraft Accident Investigation (AAI) is not a prerequisite, it is assumed that the attendee has either completed AAI or has some previous experience in aircraft accident investigation.

Objectives: To provide concepts, practical techniques and methodologies essential to rotary wing aircraft accident investigation.

Who Should Attend: Persons associated with rotary wing accident investigation including manufacturers, operators, associations, insurers, law enforcement, military and governmental agencies.

Course Outline

1. Accident Investigation & Analysis:

- Assessing Indicators of Accident Causation
- Data Collection
- Investigative Tools
- Risk and the Operating Environment
- Pre-Investigative Planning
- Operational Procedures
- Technical Data
- Accident Scene Documentation
- Fluid Sample Analysis
- Inventory of Aircraft Wreckage
- Diagrams: Plan, Profile, Polar, Base Line, Witness, Photography
- Impact Force Determination
- Rotor System Examination
- Fire Investigation: Source and Temperature
- Composite Materials Overview
- Power Plant Investigation: Turbine and Reciprocating Engines
- Instrument Examination
- Maintenance Record Evaluation
- Reviewing Pilot Records
- Human Factors and Witness Interview
- Crashworthiness
- Meteorological Investigation
- Communications
- Various Case Studies

2. Helicopter Fundamentals and Material Factors

- Material Failure Analysis
- Rotor System Characteristics
- Hover and Low Speed Operations
- Tail Rotor/Anti-Torque Performance Variables
- Downwind Operations
- Forward Flight Operations
- Mast Bumping
- Height/Velocity Variables
- Dynamic Stall

- Compressibility Effects
- Autorotation Variables
- Vortex Ring State
- Dynamic Rollover
- Ground Resonance
- Air Resonance
- Rotor Divergence
- Energy Attenuation Systems/Crashworthiness

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
HAI 24-1	30 Oct – 03 Nov 2023	\$2,950
HAI 24-2	25 – 29 Mar 2024	\$2,950
HAI 25-1	28 Oct – 01 Nov 2024	TBA

GAS TURBINE ENGINE ACCIDENT INVESTIGATION (GTAI)

This specialized accident investigation course is directed to fixed wing turbojet and turboprop as well as turbine powered rotary wing aircraft. The course examines specific turbine engine investigation methods and provides technical information in the related area of material factors and metallurgical failure investigation. This is a fundamental accident investigation course. Individuals with many years of engine investigations may find this course too basic. It is assumed that the attendee has a basic understanding of jet engines.

Objectives: To provide the participant with the basic skills and knowledge to effectively examine the involvement of a turbine engine in an aircraft accident.

Who Should Attend: Individuals with responsibility for the post-accident examination of gas turbine engines and individuals responsible for integration of engine information into the total accident investigation.

Course Outline

1. Aviation Gas Turbine Engine Accident Investigation

- Types of Gas Turbine Engines
- Mounting of Turbine Engines
- Major Components
- Controls and Accessories
- Related and Interfacing Aircraft Components
- Engine Operating Characteristics
- Potential In-Flight Engine Occurrences
- Role of the Investigator
- Best Practices in Investigations
- Documentation of Physical Evidence
- Investigation of Incidents
- Investigation at the Accident Site
- Engine Disassembly Investigation
- Engine Operation Speed at Terrain Impact
- Engine Uncontained Components
- Engine Fire
- Documentation

2. Material Factors

- Investigation Procedures
- Basic Metallurgy of Gas Turbine Materials
- Failure Analysis – Fundamentals and Mechanical Factors
- Failure Analysis – Fracture Mechanisms
- Engine Component Investigation Examples

3. Case Study

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
GTAI 24-1	23 – 27 Oct 2023	\$2,950
GTAI 24-2	25 – 29 Mar 2024	\$2,950
GTAI 25-1	28 Oct – 01 Nov 2024	TBA

HUMAN FACTORS IN AVIATION SAFETY (HFH)

Humans design, build, operate and maintain the aviation system. Consequently, data shows that the majority of aviation accidents and incidents have roots in human factors. With this realization comes the conclusion that quality human factors training is effective in improving safety. This course presents human factors information in a manner that can be readily understood and applied by aviation practitioners. Emphasis is placed on identifying the causes of human error, predicting how human error can affect performance, and applying countermeasures to reduce or eliminate its effects. The course content follows the subjects recommended in FAA Advisory Circular 120-51E. The course also addresses some of the topics recommended in the International Civil Aviation Organization's Human Factors Digest *Training Operational Personnel in Human Factors*. The emphasis is from the pilot's perspective, but is applicable to all phases of aviation operations. The course relies heavily on participation, case studies, demonstrations, self-assessment and practical exercises.

Objectives: To provide a theoretical and practical knowledge of the application of human factors principles and techniques in aviation. To provide knowledge about human performance issues, including why we make errors and violate procedures. To provide strategies for individuals, leaders, and organizations that can be used to prevent errors/violations. To clarify the relationship between human factors, risk management, and Safety Management Systems.

Who Should Attend: This course has been carefully designed to appeal to a wide-spectrum of professionals actively involved in aircraft operations. There is special emphasis for safety managers, training, flight department and maintenance managers and supervisors, pilots, air traffic controllers, dispatchers and schedulers.

Course Outline

1. Overview of Human Factors and Recent Advances

- Human Error
- Systems Approach to Aviation Safety Improvements
- Cases of Aircraft Accidents Due to Human Error

2. Introduction to Human Error Accident Reduction Training

- History of Aviation Human Factors
- Reason Model

Human Factors in Automation
 Corporate Culture
 Engineering a Safety Culture
 Threat and Error Management
 Fatigue and Stress Management
 Communications
 Workload Management
 Monitoring and Challenging
 Situational Awareness
 Norms
 Decision-Making
 Leadership
 Information Processing
 Case Studies
 Build an Accident

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
HFH 24-1	21 – 25 Aug 2023	\$2,950
HFH 24-2 (hybrid)	16 – 20 Oct 2023	\$2,950
HFH 24-3	18 – 22 Mar 2024	\$2,950
HFH 24-4	17 – 21 June 2024	\$2,950
HFH 25-1	12 – 16 Aug 2024	TBA
HFH 25-2 (hybrid)	21 – 25 Oct 2024	TBA

HUMAN FACTORS IN AVIATION MAINTENANCE (HFMX)

This course is designed to provide knowledge and understanding of human factors in the realm of aviation safety with a focus on the role of the maintainer. It presents human factors issues as conditions/hazards that must be managed. Specific issues such as fatigue management, deviations for approved procedure, situation awareness and the Dirty Dozen are presented. Data collection methodologies such as MEDA and LOSA are examined as viable methods of safety information and as hazard identification tools in an organization's SMS. This course satisfies the Human Factors Course requirement for the USC Safety & Security Certificate.

Objectives: To create a comprehensive understanding of the factors

affecting an individual's performance in aviation maintenance. To understand how the management of human factors play a central role in an organization's safety program.

Who Should Attend: This course is designed for supervisors, managers and staff officers who have responsibility for the oversight of aviation maintenance.

Course Outline

- History of HF
- ICAO / EASA / FAA HF Requirements
- Error Theory
- Individual HF Performance Issues
Dirty Dozen
- HF and Risk Management
Situational Awareness
Hazard Recognition
Risk Assessment Development
Risk Management (Matrix Development)
- HF specific industry problem areas
Human Factors Justification / Cost Benefits
Fatigue Management
Turnover Briefings
Failure to Follow Procedures / Deviations from Proper Maintenance
- Communication
- SMS Overview
- Pillars of SMS Program
- Safety Policy Development
Risk Management
Safety Assurance / Monitoring / Data
Safety Promotion / Culture
- Importance of Data Collection

Recognition of Hazards for Data Collection
Methods – LOSA(M)(R)
MEDA Brief
Importance for Future Design Implementations

12. HF and Leadership

13. How Leadership Affects Individual Performance

Communication Traits
Communication Conflicts
Stress, Pressure, and Teamwork Traits
Individualism versus Organization Performance
How Leadership Affects Culture – Organizational Performance
Leadership Styles & Conflicts
Decision Making Traits
Leadership and Safety Culture
Case Study

Course Duration: 4.5 Days

CEU: 3.2

Course No.	Dates	Tuition
HFMX 24-1	06 – 10 Nov 2023	\$2,950
HFMX 24-2	22 – 26 Apr 2024	\$2,950
HFMX 25-1	11 – 15 Nov 2024	TBA

HUMAN PERFORMANCE AND RESILIENCE (HPRL)

The study of Human Factors has traditionally focused on how humans make errors. Over time the discipline has matured into the study of why humans make errors and, how organizational factors can contribute to errors. This course examines the subject from the reverse point of view. *Human Performance and Resilience* is a course that presents how an organization can build attitudes, language and behaviors that result in improved team communication, resilience, and productivity.

Decision making and judgement have a central role in the course. Sound decision making is based upon a clear understanding of the organization's mission. This can only be accomplished through example driven leadership and an organizational culture that the value of listening. The concept of *Leading from the Middle* is presented and practiced.

Actfulness is the desired individual attitude that is the result of an understanding of an organization's mission, it's rule and priorities, Resilience is the result.

All organizations and all individuals will experience set-backs and critical challenges. Resilience is the capability that allows promotes recovery. The ways to develop resilience are identified. Flexibility and creativity are essential for dealing with anomalous and unique challenges.

This course goes beyond the recognition that good communication is a necessity for a productive and resilient organization. Specific communication techniques for leaders and peers are practiced among them the value of active listening, focus and respect. Words are important.

One person's perception is their reality. An understanding of how the brain works and how people react serves as a physiological basis for improving organizational communication and performance. The recognition that an individual's perception is the composite of their consciousness, their preconscious, and their subconscious is essential for a full understanding of an individual's perspective.

Justice and fairness are essential for a well-functioning organization. Part of this is Competency Based Training or Evidence Based Training through which a transparent and objective view of performance is obtained. The inverse of this is an organization where performance assessments and decisions are subjective and result in resentment. Techniques to counter resentment are taught and practiced.

Objectives: To provides skills that improve decision-making, and promote interpersonal behaviors that build improved organizational resilience both at the leadership and individual employee level.

Who Should Attend: Managers, Safety Officers, Chief Pilots, Heads of Maintenance and Human Factors Specialists.

Course Outline

Leadership at all Levels
Leading from the Middle
Role Models - The Significant Few
Effective Decision-making
Evidence Based Training
Organizational Resilience

- Individual Resilience
- Shared-mission Understanding
- The Centrality of Communication
- The Right Words; the Right Way
- Listening as a Cultural Pillar
- Emotional Intelligence
- Reason's Cheese Reversed
- Effective Listening
- The Physiology of Individual Perception
- Case Studies and Resilience Exercises

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
HPRL 24-1	08 – 12 Jan 2024	\$2,950
HPRL 25-1	09 – 13 Sep 2024	TBA
HPRL 25-2	SPRING 2025	TBA

DATA FOR SAFETY MANAGEMENT (DATA)

The analysis of digital flight data collected from actual flights is resulting in tremendous steps forward in aviation safety. It is no longer necessary for an accident or incident to occur in order that safety hazards are revealed. Flight Data Analysis provides a wealth of safety critical information that can be utilized to identify trends, issues and potentially dangerous practices. All modern commercial and business jet aircraft are equipped with flight data recorders that serve as the initial collection devices for flight data analysis. This course will present the basics of flight data analysis based upon real-time flight information. It will present opportunities to analyze collective flight data as would be utilized by a commercial aircraft operator. The course will present animation software that depicts flight profiles and examine other sources of data including video and air traffic control data that may be used in creating a data-based safety case.

Objective: To provide first-hand experience in the collection and analysis of safety critical flight data. To create an understanding of the basics of Flight Data Analysis, how Flight Data Analysis contributes to a SMS, and how Flight Data Analysis can result in positive improvements in aviation safety performance.

Who Should Attend: Individuals from aviation enterprises that are involved in or wish to be involved in the collection and analysis of safety related aviation data.

Course Outline

- Flight Data Recorders, Types, Capabilities and History
- Evolution of Flight Data Analysis
- Relationship to Aircraft Accident Investigation
- Relationship to SMS
- FOQA, ASAP, ASRS, ADS-B
- Cockpit Voice Recorders
- Video Data
- Recovery of CVR's and FDR's
- Air Traffic Control Data
- Components with Non Volatile Memory
- Commercial Safety Data Services
- Animation of Flight Data

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
DATA 24-1	30 Oct – 03 Nov 2023	\$2,950
DATA 24-2	15 – 19 Apr 2024	\$2,950
DATA 25-1	21 – 25 Oct 2024	TBA

INCIDENT INVESTIGATION/ANALYSIS (IIA)

The investigation of incidents has assumed a predominate role in creating safety within an organization. Incident investigation can yield great benefits in the identification of hazards. This course now integrates a full day lab session, highlighting the practical aspects of incident investigation. The course presents the principles of Management, Investigation and Analysis. It will explain how incidents are discovered, investigated, and reported in writing. The student will learn the techniques of data collection and analysis.

Objectives: To provide concepts and practical knowledge to be used in incident investigation and trend analysis programs.

Who Should Attend: Supervisors who will investigate incidents, part time safety advisors, Quality Assurance, and ATC supervisors. This a good course for personnel responsible for the data analysis program.

Course Outline

1. Investigations:

- Basis for Incident Investigation
- Reporting Criteria
- Reporting Methods
- Investigation Techniques
- Analysis, Root Cause Analysis Techniques,
- Safety Risk Management
- The Failure Modes and Effects Analysis (FMEA) Process
- An Overview of Data Programs (FOQA)
- Report Writing
- Recommendations
- Safety Management System Integration Concepts
- Implementation
- Organizational Management, Accountability and Responsibilities

2. Human Factors:

- Stress
- Fatigue
- Decision Making
- Human Reliability and Error Analysis
- Judgment Chain
- Attitude
- Behavior
- SHEL Models, HFACS

3. Case Study Practical Exercise at Lab

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
IIA 24-1	09-13 Oct 2023	\$2,950
IIA 24-2	22-26 Apr 2024	\$2,950
IIA 25-1	07-11 Oct 2024	TBA

SeMS AVIATION SECURITY MANAGEMENT SYSTEMS (AVSEC)

This course is designed for individuals responsible for managing and implementing aviation security measures at medium to small size aircraft operators, all airports and Indirect Air Carriers (IAC's). The course applies the fundamentals of SMS (hazard identification, risk assessment and mitigation of risk) to the field of aviation security. It demonstrates how to conduct a risk-based security program that builds upon national and international standards and requirements. The course presents the PRIFISE operational risk assessment tool as a framework for meeting emerging security threats. As cyber security has become a more important issue this course has been extended to include a half-day on cyber security. Note: This is a non-SSI course.

Objectives: To provide individuals with the knowledge and skills to develop a SeMS based aviation security management system that is compliant with Federal requirements, International Standards and reflective of organizational needs.

Who Should Attend: Individuals responsible for implementation of aviation security requirements in medium to small size aircraft operators, all airports and Indirect Air Carriers. This course would also be of interest to those individuals and managers who are seeking to apply a systems management approach to aviation security within their particular areas of jurisdiction. Individuals involved in the design and integration of security measures into airport environments would find benefit in this course. This course would be beneficial to government agencies responsible for aviation security.

Course Outline

1. Primary Lessons of Aviation Security

- Evolution of the Threat
- Evolution of the Response
- Development of Countermeasures

2. Legal Programs as Countermeasures

- ICAO
- SeMS
- U.S. Regulations

3. Principles of Aviation Security Management Systems

- Positive Leadership Culture
- Data-based Decision Making
- Shared Framework with SMS

4. Audits and Inspections
 - Internal Audits
 - Risk Assessment Matrix
 - Synergy with ICAO and National Requirements and Inspections
5. Practical Applications
 - PRIFISE Operational Risk Assessment Tool
 - Non-Regulatory Security Practices that Make Sense and Diminish Risk
 - Operating in Unfamiliar Environments
6. Security Technologies
 - Cost Benefit
 - Emerging Technologies
 - Cyber Security
7. Threats
 - Threats to Aircraft
 - Threats to Airports
8. Case Studies and Practical Exercise
 - Audit of Aviation Entity
 - Application of SMS Principles

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
AVSEC 24-1	14 – 18 Aug 2023	\$2,950
AVSEC 24-2	13 – 17 May 2024	\$2,950
AVSEC 25-1	04 – 08 Nov 2024	TBA

ACCIDENT/INCIDENT RESPONSE PREPAREDNESS (AIP)

This course is designed for individuals who are involved in either preparing emergency response plans or responding to incidents and accidents as a representative of their organization. It is based on the premise that accidents are relatively rare events and organizations may have little experience in dealing with them. The aftermath of an accident or serious incident typically involves complex, challenging, and stressful situations.

An organization can significantly reduce the negative impact of these events with preparation and the development of an effective response plan.

This updated course has been extended to four and a half days to integrate communications in the digital age, and a capstone emergency response tabletop exercise that provides interactive, practical application of course subject matter.

Objectives: To provide information on effective preparation for accident/incident response, including organizational policy and planning, operational and technical aspects, and humanitarian considerations. To provide the knowledge needed to function effectively during post-accident activities and situations. To provide the skills required to write an effective company emergency response plan.

Who Should Attend: Management and safety personnel involved in planning for, responding to, or recovering from incidents and accidents.

Course Outline

1. Accident/Incident Response Plan Development and Overview
 - The Importance and Value of an Emergency Response Plan
 - The Investigation Process - Domestic and International
 - Effectively Interacting with Government Investigators
 - Informal Communications Discipline
 - Air Carrier/Aircraft Operator Planning Process and Responsibilities
 - Plan Development, Training and Exercises
2. Aviation Disaster Victim and Family Assistance
 - Fundamental Needs of Families and Survivors
 - Requirements, Standards, and Best Practices
 - Roles and Responsibilities: Operators, Stakeholders, and Partner Organizations
 - Response Phases and Milestones
 - Practical Skills for Working with Families and Survivors
 - Responder and Organizational Resilience
 - Resources for Plan Development, Training and Exercises
3. Communications
 - Effective Practical Communication Techniques
 - Understanding the Media's Needs
 - Dealing with Digital and Social Media
 - Internal and External Communications
 - Complying with Communications Policies of Investigative Authorities

4. Preparing for Litigation
 - Understanding Administrative, Civil and Criminal Actions
 - Identifying How Organizations Can Become Involved in Litigation
 - Identifying Evidence and Developing an Evidence Preservation Plan
 - Databases and Document Retention
 - Reducing Exposure of the Organization and Personnel
 - Working with Counsel, Experts, and Insurance Carriers
5. Developing and Drafting a Complete Emergency Response Plan
 - Outline and Organization
 - Format, Dissemination, and Updating
 - The First Two Hours
 - Integrating with Other Departments

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
AIP 24-1	21 – 25 Aug 2023	\$2,950
AIP 24-2	05 – 09 Feb 2024	\$2,950
AIP 25-1	19 – 23 Aug 2024	TBA

AVIATION LAW AND AVIATION DISPUTE RESOLUTION (LEGAL)

This course is designed as an interactive classroom in which students learn about the legal risks inherent in aviation operations, the role of the aviation professional in litigation and an overview of the legal system as it relates to aviation safety. The course uses dynamic group discussions of actual accident and incident case studies to provide an understanding of the various legal processes related to aviation and how students can engage aviation authorities in a responsible and successful manner. The latest developments in aviation law and litigation will be discussed.

Our experienced aviation lawyers, as instructors, will encourage the use of “preventative legal medicine” to avoid legal problems. Classes are not just lectures, but include simulated exercises regarding lawsuit mediations, depositions and trial testimony. These interactive aspects of the class will assist students in working with their organizations’ lawyers, if and when legal issues develop.

Objectives: To provide the participant with a working knowledge of the legal process and trends affecting aviation safety, as well as practical exercises to assist students when working with aviation legal counsel.

Who Should Attend: Aviation professionals who may be involved in aircraft accident investigation, incident investigation, safety analyses, civil litigation or internal aviation disputes.

Course Outline

1. Aviation Accident & Incident Litigation
 - The Litigation Process
 - Civil Litigation
 - How a Case is Structured
 - Discovery, Deposition, Trial
 - U.S. Legal System
 - Federal and State Court Systems
 - Venue and Choice of Law
 - Investigations and Safety Audits
 - Statutes/Case Law/International Law/Treaties
2. Legal Aspects of Accident Investigation
 - Jurisdiction of Federal Agencies
 - Investigative Power vs. Private Rights
 - NTSB Probable Cause Safety Investigations
 - FAA Role
 - Accident Reports and Litigation
 - Witness Statements
 - Legal Issues of Accident Response Planning
 - Attorney-Client Privilege – Work Product Protection
 - Accident Liability
 - Comparative Fault
 - Airline, Air Taxi, Corporate and G/A Accident Issues
3. Duty of Care and Legal Aspects of Selected Safety Regulations
 - Role of Governmental Agencies in Enforcing Aviation Safety Regulations
 - FAA Enforcement Alternatives
 - Administrative Action/Legal Enforcement Action/
 - Criminal Referral
 - Compliance with Safety Regulation
 - Deviation and Non-Compliance

Affirmative Defenses, Waivers and Mitigating Factors
 Aviation Standards of Care: FAR's, Advisory Circulars
 Special Legal Doctrines Involving Aviation Safety
 Case Study – Analyzing Legal Issues
 Burden of Proof, Negligence
 FAA's Emergency Orders
 Accident/Incident Reports

4. Product Liability and Safety
 - Theories of Manufacturer Liability
 - The Concept of Defectiveness
 - Other Potentially Liable Parties in the Chain of Custody
 - Manufacturer's Defenses
5. Aviation Conflict Resolution
 - Resolving Safety Conflicts
 - Mediation/Arbitration
 - SMS Requirements
 - FAA Regulatory Standards
6. The Role of the Aviation Professional as a Witness in Litigation
 - Scope of Activity
 - Ethical Considerations
 - Role of the Aviation Consultant
7. Consultant as a Technical Witness
 - Getting Started
 - Agreements with Law Firm (Client)
 - Investigation/ Discovery
 - Deposition/Trial Preparation
 - Development of Communication Skills
8. Deposition/Trial Demonstrations and Practice
 - Aviation Case Study
 - Deposition Purpose and Goals
 - Trial Testimony of Aviation Professionals

CEU: 2.8

Course Duration: 4.0 Days

Course No.	Dates	Tuition
LEGAL 24-1	28 – 31 Aug 2023	\$2,625
LEGAL 24-2	12 – 5 Feb 2024	\$2,625
LEGAL 25-1	26 – 29 Aug 2024	TBA

SAFETY MANAGEMENT SYSTEMS FOR MANAGERS (SMS-MGR)

SMS has dramatically changed how safety programs are conducted and managed. Its success or failure is dependent on management understanding and support. ICAO has established it as a standard for airports, commercial aircraft operators and air traffic providers. SMS is being implemented throughout the aviation industry. A key feature of Safety Management Systems (SMS) is the active involvement at all levels of management in the safety process. This course is designed to explain the fundamentals of the SMS process to managers and supervisors. It focuses on the particular functions and responsibilities that managers have within a SMS. The particular benefits of an SMS are detailed. Additionally, potential issues which may cause friction as a result of an SMS are discussed.

This course is an introductory level course. It is not intended as a substitute for the full length SMS courses: Aviation Safety Management Systems (ASMS), Safety Management for Aviation Maintenance (MAINT), or System Safety (SSC). The ten hour format is primarily designed for presentation to managers. It will conducted both at USC and via on-site contracts.

Objectives: To provide managers and supervisors an understanding of the principles of an SMS and a clear vision of the role of the manager.

Who Should Attend: Managers and supervisors of aviation operations and aviation related organizations including aircraft operators, airports, and air traffic control facilities.

Course Outline

- Overview of SMS
- Management Roles and Responsibilities
- Management Accountabilities
- Program Document
- Goals and Objectives
- Risk Assessment
- Change Process Management
- Audits and Safety Reviews
- Motivating Safe Behavior

Safety Action Groups
 Safety Culture and Climates
 Education and Training
 Just Reporting System
 Latent Conditions/Active Errors
 Accident/Incident Costs
 Mishap Investigation
 Data Analysis
 Obstacles to SMS

CEU: 1.1

Course Duration: 1.5 Days

Course No.	Dates	Tuition
SMS-MGR 24-1	30 Nov – 01 Dec 2023	\$1,200
SMS-MGR 24-2	29 – 30 May 2024	\$1,200
SMS-MGR 25-1	17 – 18 Dec 2024	TBA

SAFETY PERFORMANCE INDICATORS (SPI)

Safety Performance Indicators (SPI's) are essential to the safe operation of any aviation activity. They are analogous to the instruments that pilots need to safely fly an aircraft. This course teaches how SPI's are developed, monitored, analyzed and modified in order for an organization to correctly know it's safety performance. SPI's are an essential part of any SMS. They form the heart of the Assurance component of SMS. They allow an organization to know their safety performance in the past, the current day and project into the future. SPI's allow an organization to monitor and measure safety performance in order to manage it. The course utilizes guidance provided in ICAO Annex 19 and the ICAO Safety Management Manual Doc. 9859.

The course begins with an introduction to “threats,” which are conditions that increase operational complexity and if not handled properly, can decrease safety margins. Flight operations examples include black hole non-precision approaches, white out conditions and low light conditions, icing, improper use of automation, weather, terrain, mechanical malfunctions and distractions. Maintenance examples are fatigue, poor lighting, unclear work directives, time pressures and uncompleted work that is handed over to another shift. Examples pertaining to cabin crew members

are cabin fires — both hidden and overt, command interruptions, disruptive passengers, rushing and malfunctioning cabin equipment.

Objectives: To provide the skills to develop, adopt and analyze Safety Performance Indicators in the Safety Management System of an aviation operator.

Who Should Attend: Any individual involved in the safety program and specifically the SMS of an aviation operation. This includes military, airline, corporate aviation and other public use entities.

Course Outline

1. Role of SPI's in a SMS
2. ICAO Annex 19 and Safety Management Manual Doc 9859
3. Where is the Data Derived to Build SPI's
4. How to Develop and Maintain SPI's
5. The Characteristics of a Good SPI
6. Difficulties of Choosing Too Few or Too Many SPI's
7. Judging the Accuracy of Your SPI Trends
8. How to Present SPI's to Management and Other Portions of the Organization
9. Practical Exercise: Develop SPI's for Your Organization

CEU: 1.4

Course Duration: 2.0 Days

Course No.	Dates	Tuition
SPI 24-1	02 – 03 Oct 2023	\$1,300
SPI 24-2	12 – 13 Feb 2024	\$1,300
SPI 24-3	27 – 28 June 2024	\$1,300
SPI 25-1	23 – 24 Sep 2024	TBA

THREAT AND ERROR MANAGEMENT (TEM)

Threat and Error Management (TEM) is being implemented by operators throughout the world. This course is designed to train those who wish to develop a TEM program within their own organizations. Taught by a leader in TEM development, this course provides an applied, practical approach to explaining TEM principles. Attendees will gain sufficient knowledge to implement a TEM program.

The course begins with an introduction to “threats,” which are conditions that increase operational complexity and if not handled properly, can decrease safety margins. Flight operations examples include black hole non-precision approaches, white out conditions and low light conditions, icing, improper use of automation, weather, terrain, mechanical malfunctions and distractions. Maintenance examples are fatigue, poor lighting, unclear work directives, time pressures and uncompleted work that is handed over to another shift. Examples pertaining to cabin crew members are cabin fires — both hidden and overt, command interruptions, disruptive passengers, rushing and malfunctioning cabin equipment.

Objectives: To provide class participants with sufficient knowledge to develop a TEM program within their respective organizations. To provide participants with the knowledge to effectively add TEM to an organization’s Safety Management System.

Who Should Attend: This course has been designed to appeal to those who are responsible for developing a Threat and Error Management program and/or a Line Operation Safety Audit program within their organization. It will also provide a detailed understanding of TEM to those who wish to improve their professional skills through greater knowledge of TEM and LOSA.

Course Outline

1. Introduction to Threats and Errors
 - Threats and Threat Recognition
 - Error Avoidance and Trapping
 - LOSA and the Expected Training Benefits
 - Personnel Performance During a LOSA
2. ABCD’s of Threat and Error Management
 - Assessing Threats and Acknowledging Errors
 - Barriers to Error and How to Effectively Build Them
 - Communications and its Relationship to Threat and Error Management
 - Distraction and Interruption Management
 - SOPs and Their Role in Threat and Error Management
 - Sensibility Check and Ensuring Situational Awareness
3. Case Studies and Class Exercises
4. TEM /LOSA Applied to All Divisions Within an Organization

5. TEM Toolkit for Incident and Accident Analysis
6. TEM Applied to Automated Aircraft
7. TEM as an Integral Part of a Safety Management System (SMS)

CEU: 1.8

Course Duration: 2.5 Days

Course No.	Dates	Tuition
TEM 24-1	04 – 06 Oct 2023	\$1,650
TEM 24-2	07 – 09 Feb 2024	\$1,650
TEM 24-3	24 – 26 Jun 2024	\$1,650
TEM 25-1	25 – 27 Sep 2024	TBA

SAFETY MANAGEMENT SYSTEMS FOR AIRPORT CONSTRUCTION OPERATIONS (SMS-ACO)

This course is designed for airport supervisors, managers, operations personnel as well as all stakeholders that are involved in airport construction and construction management. The FAA requires that the Safety Risk Management process and the Construction Safety Phasing Plan processes be integrated into most significant airport construction projects. SRM is the heart of an airport’s Safety Management System. How to conduct the SRM process, integration of the CSPP and how these integrate with the airport’s SMS is the core objective of the course.

Objectives: To provide students with the ability to conduct, participate in or oversee an SRM and/or CSPP process. To provide students with an understanding of how SRM and CSPP perform vital functions within an airport SMS.

Who Should Attend: Airport engineers in charge, airport operations personnel, ATC, Tech Ops personnel, engineering company project representatives involved in airport construction, FBO supervisors, AARF personnel as well as airline management pilots.

Course Outline

1. The Standard – ICAO SMS
 - Annex 19
 - Annex 14
 - ICAO Safety Management

2. The Framework
 - ICAO + FAA
 - NPRM FAA 2010-0997 (Proposed Rule Part 139)
 - 14 CFR 5
3. Types of Requirements
 - Laws, Standards, Regulations, Approved Programs, Advisory Circulars, Orders, Notices, SAFOs, Emergency Amendments
4. FAA Directives (all LOBs) on SMS and SRM
 - 8000.369B
 - 8040.4A
5. Airport Pilot Studies
 - ACRP Synthesis 37 – Lessons Learned
6. Airport Specific Guidance on SMS, SRM
 - Operational Safety on Airports During Construction
 - AC 150/5200 – 37
 - FAA Order 5200.11 (change 3)
 - AC 150/5370 – 2, Implementing CSPP
 - FAA JO 7400.2
7. Exercises
 - CSPP
 - FMEA
 - SRA

CEU: 2.1

Course Duration: 3.0 Days

Course No.	Dates	Tuition
SMS-ACO 24-1	22 – 24 Jan 2024	\$2,000
SMS-ACO 25-1	SPRING 2025	TBA

SAFETY MANAGEMENT SYSTEMS FOR GROUND OPERATION SAFETY (SMS-RAMP)

This course presents practices and methodologies for the identification and mitigation of hazards that occur in all phases of airport ground operations. Ground operations are often the environment in which numerous costly incidents resulting in damage or injury occur. Ground mishaps cause cancelled flights, alienated customers, increased personnel costs, injured personnel and a wide range of direct and indirect negative consequences. This course teaches best practices on how to identify and mitigate ground damage and injury mishaps before they happen. The course shows how to integrate these ground safety practices into an airport's overall SMS.

Objectives: To provide airport, air carrier and ground service company supervisors and managers with practices that will reduce ground operation mishaps to personnel and equipment. It provides an understanding of how ground operations safety management is an essential part or an airport's or air carrier's SMS.

Who Should Attend: Managers, supervisors and safety officers with responsibility for airport ground operations.

Course Outline

1. SMS Framework Review
 - Safety Policy and Objectives
 - Safety Risk Management
 - Safety Assurance
 - Safety Promotion
2. Ground Operations Safety Key Stakeholders
 - Airport Rescue and Fire Fighting (ARFF)
 - Airport Operations
 - Law Enforcement
 - Federal, State, and Local Agencies – Mutual Aid
 - Airlines/Tenants/General Aviation
 - Military
3. Airport Operational and Security Areas
 - FAR Part 139 Areas – AOA, Aircraft Movement Area, Non-Movement Area
 - 49 CFR 1542 Areas – AOA, Secure Area, SIDA, Sterile Area

4. Airport Ramp Services
 - Under-Wing Operations
 - Above-Wing Operations
5. Ground Operation Hazards
 - Jet Blast
 - HAZMAT
 - Aircraft Operations
 - First Responder Access
 - Construction
 - Pedestrians
 - Noise
 - Weather
6. Accident and Incident Response
 - Off-Airport Property
 - On-Airport Property
 - Communication
 - After Action Reports/Improvement Plans
7. Documentation
 - Current FAR Part 139 Documentation Requirements
 - SMS Documentation Requirements
8. NPRM Review

CEU: 1.8

Course Duration: 2.5 Days

Course No.	Dates	Tuition
SMS-RAMP 24-1	06 – 08 Sep 2023	\$1,650
SMS-RAMP 25-1	04 – 06 Sep 2024	TBA

PHOTOGRAPHY FOR AIRCRAFT ACCIDENT INVESTIGATION (PHOTO)

****This course is now conducted entirely at our lab located at 905 Westminster Ave, Alhambra, CA 90045. Please book hotels accordingly.****

This specialized course in accident investigation is designed to assist the investigator to improve photographic documentation of an accident site.

Course participants will take photographs of components and critique them as a class. This course assumes that the investigator is not a professional photographer.

Objectives: To provide the aircraft accident investigator with basic accident photographic and video techniques.

Who Should Attend: Individuals involved in aircraft accident investigation.

Course Outline

Digital Photography
 Basic Photographic Equipment
 Lenses and Camera Controls
 Electronic Flash
 General Techniques
 Macro Photography
 Lighting
 Picture Identification
 Specialized Photographic Techniques
 On-Site Photographic Priorities
 Student Practice Session
 Critique of Student Photographs
 Videography
 Basics in Videography
 Uses of Video in an Aircraft Accident Investigation

Required: Each student should bring a Digital SLR camera or digital camera equipped with a Macro (close-up) lens feature, if available, and a flash. A limited number of cameras are available to be checked out from the USC program; please coordinate beforehand to determine availability.

CEU: 1.4

Course Duration: 2.0 Days

Course No.	Dates	Tuition
PHOTO 24-1	28 - 29 Nov 2023	\$1,300
PHOTO 24-2	21 - 22 May 2024	\$1,300
PHOTO 25-1	17 - 18 Dec 2024	TBA

SYSTEM SAFETY (SSC)

The course is based upon the principles and processes described in Military Standard 882-E. All phases of the System Safety processes are addressed. Instruction is given in both system safety engineering and management with emphasis on complex, high technology systems. Engineering methods are illustrated with practical, numerical examples. The principal system safety analysis method is taught with classroom and homework problems. Preparation of a system safety program plan and management of the system safety process in all phases of the system life are examined in depth. A classroom project provides students with the opportunity to apply system safety management and engineering methods while working as a team. Enrichment lectures in special areas of knowledge essential to the system safety process will also be presented. Each student should bring a calculator with statistical functions.

Objectives: To provide a level of knowledge of system safety sufficient to manage a system safety program and to perform associated system safety engineering tasks.

Who Should Attend: Individuals who have safety responsibilities in the design and operation of complex systems in which an accident can cause substantial loss. Emphasis is upon military projects and contracts.

Course Outline

1. Quantitative Methods
 - System Safety Fundamentals
 - Set/Probability Theories
 - Series/Parallel Networks
 - Fault Tree Analysis
 - Event Tree Approach
 - Boolean Algebra
 - Failure Data Analysis
 - Decision Theory
 - Risk Ranking
2. Management
 - Military Standard 882-E
 - System and System Safety Life Cycle
 - Hazard Analysis Techniques including:
 - Logic/Change Analysis
 - Energy/Trace
 - FHA/FMECA
 - FTA

Hazard Analysis Types including:
PHA/SSHA, SHA and O & SHA
System Safety Order of Precedence
Mitigation
System Safety Management Tasks
Objectives/Life Cycles
Definitions
System Safety Program Plan
Types of Risks/Assumption of Risks

Prerequisite: Attendees should have an engineering or hard science background.

CEU: 5.6

Course Duration: 8.0 Days

Course No.	Dates	Tuition
SSC 24-1	10 – 19 Oct 2023	\$4,125
SSC 24-2	05 – 14 Mar 2024	\$4,125
SSC 25-1	08 – 17 Oct 2024	TBA

ADVANCED SYSTEM SAFETY ANALYSIS (ADVSS)

This course is a continuation of System Safety course focused on engineering aspects of the course. The objective is to address advanced issues in system safety analysis and broaden the trainees' perspective on system safety issues. Engineering methods addressed in the System Safety course are reviewed briefly and special advanced topics are addressed. Additional methods for system safety analysis are addressed focusing on the application of these methods.

Objectives: To provide an advanced level of knowledge of system safety analysis methods.

Who Should Attend: Individuals who desire to gain a broad perspective of system safety analysis.

Course Outline

Special Topics in FMEA / FMECA
Special Topics in Fault Tree Analysis

Common Cause Failure Analysis
 Event Tree Analysis
 Cause Consequence Analysis
 Hazard and Operability Analysis
 Special Topics in Decision Theory

Prerequisite: Attendees should have completed the System Safety Course.

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
ADVSS 24-1	18 – 22 Mar 2024	\$2950
ADVSS 25-1	SPRING 2025	TBA

ARTIFICIAL INTELLIGENCE SYSTEM SAFETY (AISYS)

Artificial Intelligence and autonomous systems have become pervasive in software applications. However, the implications for AI safety has created new concerns and risk factors especially for autonomous vehicles. This course provides a thorough survey of AI, machine learning, optimization, and autonomous vehicle techniques followed by safety and hazard analysis methods. Along the way, we will bring clarity to definitions, actual capabilities of AI systems, and the current state of data science. Case studies and real-world incidents will also provide learnings and insights to further advance the goal of AI safety.

Objectives: To provide a survey of current AI and autonomous vehicle techniques as well as discovering and mitigating their hazards. This course will also apply existing software safety methods to artificial intelligence and establish why AI is just another tool in a suite of software functionalities.

Who Should Attend: Engineers, Program Managers and Senior Managers having responsibility for the development and acceptance of systems operating with AI/ML.

Prerequisites: Individuals should be familiar with the concepts and processes of System Safety and Software Safety.

Course Outline

1. Definitions and Concepts
2. AI and ML Capabilities
 - Optimization and routing
 - Metaheuristics and tree search
 - Machine Learning
 - Deep Learning
 - Simulations
 - Reinforcement learning
3. ML Explainability
 - Data analysis and preparation
 - Statistical methods
 - Scientific method versus data mining
 - Confusion matrices, ROC, and AUC
 - P-values and P-hacking
 - Sampling bias, outliers, and data rot
4. Autonomous Vehicles
 - Defining autonomous vehicles
 - Levels of autonomy
 - Air and ground vehicle Instrumentation
 - Air and ground vehicle automation methods
 - Ego, connected, modular, and end-to-end systems
 - Localization techniques
 - Object detection techniques
 - Environment mapping techniques
 - Human factors in autonomous vehicles
5. Data Science Talent Strategy
 - Defining data science
 - State of data science as a discipline
 - Rubrics for hiring a data scientist
6. AI Risk Assessment
7. AI Hazard Analysis
8. AI Safety testing/reliability/maintenance

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
AISYS 24-1	18 – 22 Sep 2023	\$3,125
AISYS 24-2	08 – 12 Apr 2024	\$3,125
AISYS 25-1	16 – 20 Sep 2024	TBA

SOFTWARE SAFETY (SFT)

Software requires special attention in system planning, architecture, design and test. The course now includes machine learning and related artificial intelligence (AI). This course presents philosophies and methods of developing and analyzing software and highlights managing a software safety program. Software design principles will be taught to create programs that are fault tolerant and acceptably safe. Several software hazard analyses methods will be evaluated, including Fault Tree/Soft Tree, Software Sneak Analysis and Petri Nets.

Objectives: To provide an understanding of the nature of software hazards, root causes, and the methods by which these hazards may be prevented or discovered. The course will also provide instruction in administrative methods and documentation needed to establish and manage a software safety program. Providing evidence for a safety case or proof will also be covered.

Who Should Attend: System managers and engineers, system safety engineers and software engineers who are involved with developing systems that possess major software components and are responsible for the safety of such systems. Attending the System Safety (SSC) course and some understanding of software beforehand is highly recommended.

Course Outline

1. Software
 - Safety Overview
 - Definitions and Concepts
 - Design Requirements
 - Software Regulations/References
 - System Safety Team Organization
 - Risk Processing/Management
 - Risk by Agency
 - Hazard and Security
 - Catastrophic
 - Probability of Occurrence

- Reliability Issues
- Probability
- Hazard Consideration/Analysis
- Risk Assessment and Risk Levels
- Program Documentation
- Software Reliability/Risk
- Software Engineering/Requirements
- Software Safety Life Cycle Goals
- Security Engineering
- VDHL Synthesis
- Error Classification and Types
- Software Safety Requirements Traceability
- Petri-Net Modeling
- Software Safety Checklist
- Preliminary Hazard Analysis
- Software Language Analysis
- Fault Tree Analysis
- Formal Mathematical Models
- Software Safety Testing
 - Testing Schemes/Strategies
 - Software Safety Reliability/Maintenance

2. References

- Joint Software Systems Safety Engineering Handbook, 2010 Version
- Generic Software Systems Safety Program Plan
- NASA Dryden Flight Research, FAA Software Safety, Office of Secretary of Defense Safety Websites
- Mishap reports: Ariane 5, NASA Mars Climate Orbiter and Mars Polar Lander, Lauda 767
- MIL STD 882-E
- Java Safety Guidelines
- Software Reliability Newsletter

CEU: 2.8

Course Duration: 4.0 Days

Course No.	Dates	Tuition
SFT 24-1	14-17 Aug 2023	\$2,625
SFT 24-2	13-16 May 2024	\$2,625
SFT 25-1	04-07 Nov 2024	TBA

ADVANCED SOFTWARE SAFETY (ADVSFT)

This course builds upon the skills learned in the Software Safety (SFT) course. It is presumed and highly recommended that the student has achieved an active and current understanding of the importance of software safety in the planning, analyses of architecture, design, and code and the testing of automated systems. The course expands upon those skills or as learned in Software Safety (SFT) and presents opportunities to apply them in class in diverse situations using a small unmanned aerial system (sUAS) that is also weaponized.

Objectives: To develop practicing skills in writing a Request for Proposal (RFP) for a safety critical system and performing analyses. To develop the practical use of a Safety Assessment Report (SAR). To develop practical skills in deriving requirements and functions leading to a Functional Hazard Analysis (FHA) and Requirements Hazard Analysis for unmanned “sense and avoid” subsystem. Discussion of how to compose a safety argument using metrics results of many analyses of NASA autonomous aerial systems software that was performed using open source tools. Building confidence with your developer’s tools, looking into why and what to consider in tools, and how to review your story in your SAR. To develop these skills in a team based working environment.

Who Should Attend: Experienced system managers and engineers, system safety engineers and software engineers who have attended SFT or have a solid understanding of the basic software safety principles. Students who have advanced experience will be able to progress in the course but without experience or having just finished the SFT course may present problems with student progress. Principals for Safety (PFS) or Safety Leads who must present to Review Boards should attend to learn active management. Practicing System Safety and Software Safety Engineers who are lining up a professional trajectory into autonomous systems will be better informed by this course. Future follow-on courses will cover deeper safety and security issues, autonomous systems, and in particular artificial intelligence, machine learning (ML) and deep learning (DL) models, life cycles, and contract issues.

Course Outline

1. Advanced Software Safety
 - Basic Safety Overview
 - Definitions and Concepts
 - Goals
 - Small Unmanned Aerial System (sUAS) Overview

ArduCopter and NASA ICAROUS and DAIDALUS Software
Concept of Operations (CONOPS) for Safety
Missions and Functions
Payloads and Hazards
Best Safety Practices in Request for Proposal (RFP)
Performing a Functional Hazard Analyses
Partitioning and Pitfalls
Declaring Software Safety Functions
Setting Levels of Rigor (LOR)
Work Responsibilities for Others...
Plans
Architecture Analyses, Starting with Systems of Systems (SoS)
Assessing Code, COTS, GOTS, and What To Do
Code Analysis
Software Fault Tree (SFTA)
Tools and Their Use for Safety
What Does All This Mean?
Final Safety Assessment Report (SAR)
You Missed Your Level of Rigor (LOR), So What Now?
What About the Review Board?

2. References

Joint Software Systems Safety Engineering Handbook,
2010 Version
MIL STD 882-E
Joint Weapons Safety Review Guide
FAA Software Safety and National Airspace Requirements
FAA Unmanned Airworthiness 8130.34D
MIL-HDBK-516C, Unmanned Systems Chapter
US Army Small Unmanned Systems RFP
Generic Software Systems Safety Program Plan
Generic Safety Assessment Report (SAR)
NASA Langley Research and Software
Office of Secretary of Defense Jointly with FAA, Safety Guidance
USC Software Engineering Center

CEU: 2.8

Course Duration: 4.0 Days

Course No.	Dates	Tuition
ADVSFT 24-1	20 – 23 May 2024	\$2,625
ADVSFT 25-1	SPRING 2025	TBA

HUMAN ERROR ANALYSIS FOR SYSTEM SAFETY (HEASS)

System safety analysis of engineered systems must often deal with the possibility of human error leading to adverse conditions. Hence human error probability evaluation is an important part of system safety. This course presents a summary of the methods and underlying theory for estimating human error probabilities. The course begins with a discussion on human factors and its influence on human error possibility. The various methods for estimating human error probabilities under different conditions are presented. For each method, their background, underlying theory, advantages and disadvantages will be covered. Typical human error probability values used in various industries will be provided.

Objectives: To familiarize class participants with the human error probability evaluation process.

Who Should Attend: Individuals who intend to enhance their understanding and capabilities in system safety analysis.

Course Outline

- Overview of Human Factors
- Major Events Caused by Human Error
- History of Human Error Probability Evaluation
- Performance Shaping Factors
- THERP Method
- ASEP Method
- Other Methods
- Modeling Dependencies Among Human Actions

Prerequisite: Attendees should have completed the System Safety Course.

CEU: 1.4

Course Duration: 2.0 Days

Course No.	Dates	Tuition
HEASS 24-1	28 – 29 Sep 2023	\$1,300
HEASS 24-2	07 – 08 May 2024	\$1,300
HEASS 25-1	04 – 05 Sep 2024	TBA
HEASS 25-2	SPRING 2025	TBA

SYSTEM SAFETY DAMAGE AND INJURY ASSESSMENT AND MITIGATION (DIAM)

This course is intended to provide managers and system safety analysis reviewers with an overall understanding of hazard analysis methods.

Hazard analysis requires a clear understanding of sources of harm (hazards) inherent to a system. The analysis should identify the energy sources within the system their potential for harm and the measures that can be used to reduce or eliminate such harm. In this course, discussions are focused on underlying physical, chemical, and biological characteristics and effects and hazard control strategies.

The following hazards are specifically addressed: electrical hazards, electrostatic discharge, toxicity, kinetic hazards, ionizing and non-ionizing radiation, thermal hazards, noise, fire and explosion, high pressure, etc. We will introduce sophisticated mathematical models and methods that have been developed to estimate the level of impact of various hazardous conditions. Specifically we will discuss methods for estimating the impact of fire and explosion, debris distribution from an explosion, and the release of hazardous substances.

Objectives: To provide an overall understanding of the methods and models used to estimate the damage and/or injury from specific hazards or hazardous conditions and options from mitigating such hazards.

Who Should Attend: Individuals who desire to gain a broad perspective of system safety hazard analysis for performance and/or review.

Course Outline

1. Overview of Hazards
2. Specific discussions on each hazard type that includes:
 - Physical properties
 - Chemical properties
 - Biological impact
 - Barriers that can limit the level of harm
3. The following hazard types will be addressed:
 - Fire and explosion
 - Blast waves in air
 - Debris field caused by a vessel explosion or missile explosion in the air

Release of hazardous material
 Electrical hazards
 Electrostatic discharge
 Kinetic energy hazards
 Ionizing and Non-ionizing radiation hazards
 Thermal hazards
 Noise levels
 High Pressure

Prerequisite: Attendees should have an engineering or hard science background.

CEU: 3.2

Course Duration: 4.5 Days

Course No.	Dates	Tuition
DIAM 24-1	11 – 15 Sep 2023	\$2,950
DIAM 24-2	26 Feb – 01 Mar 2024	\$2,950
DIAM 25-1	19 – 23 Aug 2024	TBA
DIAM 25-2	SPRING 2025	TBA

PROGRAM INFORMATION

<i>Main Program Number</i>		310-342-1345
<i>Director</i>	Thomas Anthony	310-342-1349
<i>Business Manager</i>	Jamie Kidder	310-342-1350
<i>Registrar</i>	Raquel Delgadillo	310-342-1348
<i>Accident Lab/Engineer</i>	Daniel Scalese	310-342-1346
<i>Logistics</i>	Oscar De Jesus	310-342-1351
<i>Contract Courses</i>	Holly Inaba	310-342-1352
<i>FAX</i>		844-740-1371
<i>Program E-mail</i>		aviation@usc.edu
<i>Contract Course E-mail</i>		hinaba@usc.edu
<i>Web Site</i>		aviationsafety.usc.edu

Class Hours:

Class hours may vary slightly with each course, but are normally from 8:00 AM to 4:00 PM. Any course that shows a half-day will end by 12:00 noon on the final day of the course.

Certificate/Attendance:

Students are expected to attend all class sessions. Certificates of Completion will only be granted to those who attend at least 90% of a specific class.

Tuition:

A 50% deposit is required for each course. The balance of the tuition payment is due on the first day of class in order to continue the class. For individuals being sent by the U.S. government or corporations contracting with the University, a training document or purchase order is required. Checks should be made payable to the University of Southern California. Tuition fees include all course materials, certificates, audio-visual presentations, and lab time when applicable. Transportation, housing and meals are not included. VISA, MasterCard, Discover and American Express may be used. Credit for classes is dependent upon full payment of tuition.

Discounts:

Discounts are offered to organizations sending three or more participants to an individual class. Please contact the Registrar when registering in order to ensure the discount is applied.

Registration:

All registrations must include an email address to assure written confirmation of space in classes. Registration must be made with a hard copy, scanned PDF copy, or via the website: <https://aviationsafety.usc.edu/registration/>.

Cancellation and Refund Policy:

Participants must inform the program's administrative office of cancellation at least two weeks prior to the course start date. If cancellations are made by phone, a written statement must follow within ten working days of the call in order to receive the refund. **Cancellations of confirmed registrations received less than two weeks prior to the start of the course are subject to 50% of the tuition fees.** If a course is cancelled, enrollees will be notified no less than 10 days prior to the scheduled course opening. USC is not responsible for any airfare penalties incurred in the event of course cancellation. USC has the right to cancel courses and/or substitute faculty when necessary.

Transfers and Substitutions:

If you are confirmed in a course but unable to attend, you may send a substitute or transfer your registration one-time to a future course within the same academic year. The academic year is from July to June.

Parking:

Please contact Raquel Delgadillo at 310-342-1348 for parking options near our 6033 W. Century Blvd., Los Angeles, CA 90045 location.

ACCOMMODATIONS

Hyatt Place LAX

5959 W. Century Boulevard

Los Angeles, CA 90045

Telephone: 310-377-6520

E-mail: sergio.marquez@hyatt.com

\$155.00 +tax (1-6 nights)

\$150.00 +tax (7+ nights)

These rates include 24-hour airport shuttle service and breakfast.

To reserve, please go to: HyattPlaceLAXCenturyBlvd.com click on Book Now. Enter code 04429 in the field labeled Corporate or Group Code.

POC: Sergio Marquez, Dual Director of Sales & Marketing

E-mail: sergio.marquez@hyatt.com

Hyatt House LAX

5959 W. Century Boulevard

Los Angeles, CA 90045

Telephone: 310-377-6520

E-mail: sergio.marquez@hyatt.com

\$165.00 +tax (Studio; 1-6 nights)

\$162.00 +tax (Studio Suite; 7+ nights)

\$175.00 +tax (1 bedroom suite; 1-6 nights)

\$172.00 +tax (1 bedroom suite; 7+ nights)

These rates include 24-hour airport shuttle service, WiFi and breakfast. Rooms have kitchenettes.

To reserve, please go to: HyattHouseLAXCenturyBlvd.com click on Book Now. Enter code 04429 in the field labeled Corporate or Group Code.

POC: Sergio Marquez, Dual Director of Sales & Marketing

E-mail: sergio.marquez@hyatt.com

Hyatt Regency Los Angeles International Airport

6225 W. Century Boulevard

Los Angeles, CA 90045

Telephone: 310-377-6520

E-mail: chontae.brown@hyatt.com

\$165.00 +tax (1-6 nights) King/Two Queen Beds

\$160.00 +tax (7+ nights)

These rates include 24-hour airport shuttle service and breakfast.

To reserve, please go to: losangelesairport.regency.hyatt.com click on Book Now. Enter code 04429 in the field labeled Corporate or Group Code.

POC: Chantae Brown, Reservation Lead

Tel: 424-702-1234

E-mail: chontae.brown@hyatt.com

Homewood Suites by Hilton LAX

6151 W. Century Boulevard

Los Angeles, CA 90045

Telephone: 310-431-4720

\$189.00 + tax (September 9, 2022 – June 10, 2023)

\$199.00 + tax (June 11, 2023 – August 26, 2023)

\$189.00 + tax (August 27, 2023 – December 31, 2023)

*Rates are based on Availability

These rates include daily hot breakfast buffet, WiFi, 24-hour airport shuttle service and complimentary self-parking.

To reserve, please go to: HomewoodSuitesLAX.com and click on Reservations. Enter code 0560035945 in the third field labeled Corporate Account under the section Special Accounts and Rates.

POC: Steve Hellmers, Complex Director of Sales

E-mail: steve.hellmers@interstatehotels.com

H Hotel LAX (Curio Collection by Hilton)

6151 W. Century Boulevard

Los Angeles, CA 90045

Telephone: 310-431-4720

E-mail: steve.hellmers@interstatehotels.com

\$199.00 + tax (September 1, 2022 – June 10, 2023)

\$209.00 + tax (June 11, 2023 – August 26, 2023)

\$199.00 + tax (August 27, 2023 – December 31, 2023)

*Rates are based on Availability (NLRA)

These rates include WiFi, 24-hour airport shuttle service, complimentary self-parking, and access to rooftop fitness center and sky deck lounge.

To reserve, please go to: HHotelLosAngeles.com and click on Reservations. Enter code K1 in the second field labeled Group Code under the section Special Accounts Rates.

POC: Steve Hellmers, Complex Director of Sales

E-mail: steve.hellmers@interstatehotels.com

Sonesta Los Angeles Hotel

5985 Century Blvd., Los Angeles, CA 90045

Adjacent to the USC Aviation Safety Program offices

Telephone: 310-642-7500

Toll-Free: 800-766-3782

*\$159.00 – Standard Room Rate – July 1, 2023 to June 30, 2024

Room rates include breakfast, complimentary WiFi, transportation to/from LAX airport.

Self-Parking – \$15.00/day + tax

To reserve, please go to: <https://www.sonesta.com/sonesta-hotels-resorts/ca/los-angeles/sonesta-los-angeles-airport-lax/>
Group Code: USC

POC: Janice Funes, ph: 747-235-8413

E-mail: janice.funes@sonesta.com

Sheraton Gateway Hotel

6101 Century Blvd., Los Angeles, CA 90045

Telephone: 310-642-1111

Toll-free: 800-820-3408

*\$159 + tax/Traditional

*\$169 +tax/Deluxe Room

*Rates may increase effective 7/1/22. Contact for updated rates.

Room rates WiFi and complimentary airport transportation.
Parking – Valet \$30.00/night +tax.

To reserve, sheratonlax.com and use Corporate/SET# UNC

POC: Seth Franklin, Area Business Travel Sales Manager

Tel: 602-748-2545

E-mail: Seth.Franklin@marriott.com

Residence Inn LAX/Century Boulevard

5933 W. Century Blvd., Los Angeles, CA 90045
1 block from USC Aviation Safety Program offices
Telephone: 310-568-7700

Fax: 310-568-7727

\$182.00 +tax/ One Bed Studio King Suite – July 1, 2022 to June 30, 2023.

Room rates include hot breakfast buffet, WiFi, 24-hour airport shuttle and discounted self-parking (\$15+tax/day)

To reserve, please go to: residenceinnlax.com and use SET# UNC or email rilaxfd@residenceinnlax.com

POC: Tonimarie Cruz, Director of Sales

Tel: 310-568-7721

E-mail: tmacruz@azulhg.com

Embassy Suites LAX North

9801 Airport Blvd., Los Angeles, CA 90045

Telephone: 310-215-1000

Fax: 310-417-8968

*\$182.00 +tax/LRA

Contact for updated rates.

Rate includes grab & go breakfast, WiFi
Complimentary parking per vehicle with USC rate only.

Reservations should be made three (3) weeks in advance to assure accommodations. To receive the special room rates, you must contact the hotel directly and request the “USC Aviation Safety Program” when making your reservations or access the website: laxembassy.com and use Corporate Account 0560035945.

POC: Lisa Wright, Senior Sales Manager

Tel: 858-722-7005

E-mail: lwright@azulhg.com

La Quinta Inns & Suites

5249 W. Century Blvd., Los Angeles, CA 90045

1 mile from classroom location. Must provide own transportation.

Telephone: 310-645-2200

Rate: \$119.00 +tax 01/01/223 – 05/26/2023

Rate: \$129.00 +tax 05/27/2023 – 09/04/2023

Rate: \$119.00 +tax 09/05/2023 – 12/31/2023

Preferred rates will be offered through our central reservations

Number: 1-800-531-5900

POC: Caitlan Hill

Tel: 310-645-2200 Option #2 ext. 3122

E-mail: caitlan.hill@highgate.com

Hyatt Place Pasadena (For AAI & PHOTO classes ONLY)

399 E Green Street

Pasadena, CA 91101

Telephone: 626-788-9108

E-mail: sam.kim@hyatt.com

\$169.00 +tax (King Bed + sofa bed)

These rates include 24-hour airport shuttle service and breakfast.

To reserve, please contact Samuel Kim and reference the “USC Aviation Safety Program.”

POC: Samuel Kim, Director of Sales & Marketing

E-mail: sam.kim@hyatt.com

**PLEASE VISIT [HTTPS://AVIATIONSAFETY.USC.EDU](https://aviationsafety.usc.edu)
FOR THE MOST CURRENT INFORMATION.**

USC AVIATION SAFETY AND SECURITY PROGRAM CALENDAR

AUGUST 2023

14 – 18	AVSEC	24-1
14 – 17	SFT	24-1
21 – 25	HFH	24-1
21 – 25	AIP	24-1
28 – 31	LEGAL	24-1

SEPTEMBER 2023

6 – 8	SMS-RAMP	24-1
11 – 15	DIAM	24-1
11 – 22	ASMS	24-1
18 – 22	AISSYS	24-1
25 – Oct 6	AAI	24-1
28 – 29	HEASS	24-1

OCTOBER 2023

2 – 3	SPI	24-1
4 – 6	TEM	24-1
9 – 13	IIA	24-1
10 – 19	SSC	24-1
16 – 20	HFH	24-2
23 – 27	GTAI	24-1
23 – 27	RPSM	24-1
30 – Nov 3	HAI	24-1
30 – Nov 3	DATA	24-1

NOVEMBER 2023

6 – 17	ASMS	24-2
6 – 10	HFMX	24-1
13 – 17	MAINT	24-1
28 – 29	PHOTO	24-1
30 – Dec 1	SMS-MGR	24-1

DECEMBER 2023

4 – 15	AAI	24-2
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JANUARY 2024

8 – 12	HPRL	24-1
22 – 24	SMS-ACO	24-1
22 – Feb 2	ASMS	24-3

FEBRUARY 2024

5 – 9	AIP	24-2
7 – 9	TEM	24-2
12 – 13	SPI	24-2
12 – 15	LEGAL	24-2
26 – Mar 8	AAI	24-3
26 – Mar 1	DIAM	24-2

MARCH 2024

5 – 14	SSC	24-2
11 – 15	RPSM	24-2
18 – 22	HFH	24-3
18 – 22	ADVSS	24-1
25 – 29	HAI	24-2
25 – 29	GTAI	24-2

APRIL 2024

8 – 19	ASMS	24-4
8 – 12	AISSYS	24-2
15 – 19	DATA	24-2
22 – 26	IIA	24-2
22 – 26	HFMX	24-2
29 – May 3	MAINT	24-2
29 – May 10	AAI	24-4

MAY 2024

7 – 8	HEASS	24-2
13 – 16	SFT	24-2
13 – 17	AVSEC	24-2
20 – 23	ADVSFT	24-1
21 – 22	PHOTO	24-2
29 – 30	SMS-MGR	24-2

JUNE 2024

3 – 14	ASMS	24-5
17 – 21	HFH	24-4
24 – 26	TEM	24-3
27 – 28	SPI	24-3

AUGUST 2024

12 – 16	HFH	25-1
19 – 23	AIP	25-1
19 – 23	DIAM	25-1
26 – 29	LEGAL	25-1

JULY 2024

NO COURSES

SEPTEMBER 2024

4 – 5	HEASS	25-1
9 – 20	ASMS	25-1
9 – 13	HPRL	25-1
16 – 20	AISSYS	25-1
23 – Oct 4	AAI	25-1
23 – 24	SPI	25-1
25 – 27	TEM	25-1

OCTOBER 2024

7 – 11	IIA	25-1
8 – 17	SSC	25-1
14 – 18	RPSM	25-1
21 – 25	DATA	25-1
21 – 25	HFH	25-2
28 – Nov 1	GTAI	25-1
28 – Nov 1	HAI	25-1

NOVEMBER 2024

4 – 7	SFT	25-1
4 – 8	AVSEC	25-1
11 – 22	ASMS	25-2
11 – 15	HFMX	25-1
18 – 22	MAINT	25-1

DECEMBER 2024

2 – 13	AAI	25-2
17 – 18	PHOTO	25-1
17 – 18	SMS-MGR	25-1

USC AVIATION SAFETY AND SECURITY PROGRAM SCHEDULE

COURSES	2023					2024											
	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AVIATION SAFETY MANAGEMENT SYSTEMS (ASMS)		11-22		6-17		22	2		8-19		3-14			9-20		11-22	
SAFETY MANAGEMENT FOR REMOTELY PILOTED AIRCRAFT (RPSM)			23-27					11-15							14-18		
SAFETY MANAGEMENT FOR AVIATION MAINTENANCE (MAINT)				13-17					29	3						18-22	
AIRCRAFT ACCIDENT INVESTIGATION (AAI)		25	6		4-15		26	8	29	10				23	4		2-13
HHELICOPTER ACCIDENT INVESTIGATION (HAI)			30	3				25-29							28	1	
GAS TURBINE ENGINE ACCIDENT INVESTIGATION (GTAI)			23-27					25-29							28	1	
HUMAN FACTORS IN AVIATION SAFETY (HFH)	21-25		16-20					18-22			17-21		12-16		21-25		
HUMAN FACTORS IN AVIATION MAINTENANCE (HFMX)				6-10					22-26							11-15	
HUMAN PERFORMANCE AND RESILIENCE (HPRL)						8-12								9-13			
DATA SYSTEMS FOR SAFETY MANAGEMENT (DATA)			30	3					15-19						21-25		
INCIDENT INVESTIGATION/ANALYSIS (IIA)			9-13						22-26						7-11		
SEMS AVIATION SECURITY MANAGEMENT SYSTEMS (AVSEC)	14-18									13-17						4-8	
ACCIDENT/INCIDENT RESPONSE PREPAREDNESS (AIP)	21-25						5-9						19-23				
AVIATION LAW & AVIATION DISPUTE RESOLUTION (LEGAL)	28-31						12-15						26-29				
SMS FOR MANAGERS (SMS-MGR)				30	1					29-30							17-18
SAFETY PERFORMANCE INDICATORS (SPI)			2-3				12-13				27-28			23-24			
THREAT & ERROR MANAGEMENT (TEM)			4-6				7-9				24-26			25-27			
SAFETY MANAGEMENT SYSTEMS FOR AIRPORT CONSTRUCTION OPERATIONS (SMS-ACO)						22-24											
SAFETY MANAGEMENT SYSTEMS FOR GROUND OPERATION SAFETY (SMS-RAMP)		6-8												4-6			
PHOTOGRAPHY FOR AIRCRAFT ACCIDENT INVESTIGATION (PHOTO)				28-29						21-22							17-18
SYSTEM SAFETY (SSC)			10-19					5-14							8-17		
ADVANCED SYSTEM SAFETY ANALYSIS (ADVSS)								18-22									
ARTIFICIAL INTELLIGENCE SYSTEM SAFETY (AISYS)		18-22							8-12					16-20			
SOFTWARE SAFETY (SFT)	14-17									13-16						4-7	
ADVANCED SOFTWARE SAFETY (ADVST)										20-23							
HUMAN ERROR ANALYSIS FOR SYSTEM SAFETY (HEASS)		28-29								7-8				4-5			
SYSTEM SAFETY DAMAGE AND INJURY ASSESSMENT AND MITIGATION (DIAM)		11-15					26	1					19-23				

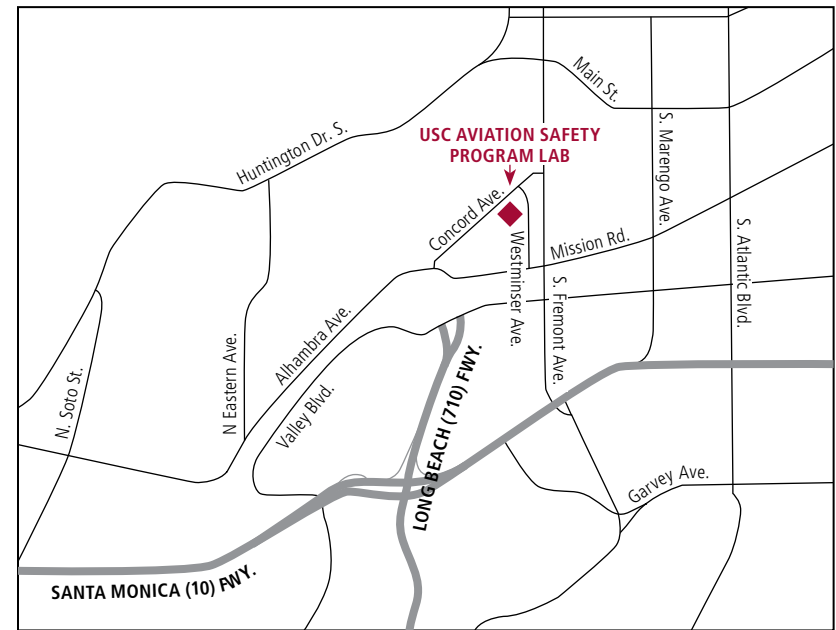
LOCATION – USC AVIATION SAFETY CAMPUS



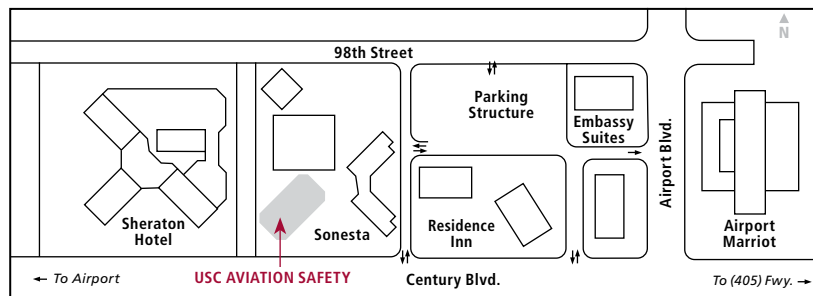
The USC Aviation Safety and Security Program offices are conveniently located near Los Angeles International Airport (LAX), the arrival point of most of our attendees, and adjacent to a number of hotels that provide accommodations within easy walking distance to our classes.

Our address is 6033 West Century Boulevard, Suite 920, Los Angeles, CA 90045.

LOCATION – USC AVIATION SAFETY LAB



The USC Aviation Safety and Security Program Lab is located at 905 Westminister Ave, Unit E, Alhambra, CA 91803. Aircraft Accident Investigation and Photography for Accident Investigation are held entirely at this location. Contact the Registrar or our web page for hotels near this location.



PLEASE VISIT [HTTPS://AVIATIONSAFETY.USC.EDU](https://aviationsafety.usc.edu) FOR THE MOST CURRENT INFORMATION.