

Aviation Safety (AVSF)

AVSF 202 Introduction to Safety Management Systems (SMS) 3 Credits (3,0)

Introduction to safety management systems (SMS) and their evolution; components of safety policy, safety risk management, safety assurance, safety promotion, and their associated elements; mandatory and voluntary safety programs.

Course Offered at: Daytona Beach, Prescott

AVSF 204 Aircraft Systems and Components for Air Safety 3 Credits (3,0)

Impact of modern aircraft systems and components on air safety: propulsion plants; avionics; pneumatic and hydraulic systems; emergency and flight controls; impact of systems/component failure on safety events and accidents.

Corequisites: AVSF 210

Course Offered at: Daytona Beach

AVSF 210 Introduction to Aerospace Safety 3 Credits (3,0)

Theories, concepts, applications, and practices in aerospace safety; focus on human factors, mechanical factors, accident investigation, safety programs, and safety statistics.

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 299 Special Topics in Safety 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in aviation safety.

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 309 Aerodynamics and Performance for Air Safety 3 Credits (3,0)

Aircraft aerodynamic forces and performance characteristics related to aviation safety. Impact of flight characteristics operational safety; turbine versus piston-driven aircraft; operational safety related accidents.

Prerequisites: AVSF 210 and AVSF 204

Course Offered at: Daytona Beach

AVSF 312 Safety Audit Techniques in Aviation 3 Credits (3,0)

Aviation audit and evaluation program designs, stages, activities, benefits, and constraints; prevalent international and domestic audit standards; development of attributes, skills, and competencies for aviation auditors.

Prerequisites: AVSF 210 and AVSF 204

Course Offered at: Daytona Beach

AVSF 314 Sustainability and Environmental Safety Compliance 3 Credits (3,0)

Principles of environmental safety compliance and sustainability and in aviation: regulatory frameworks and compliance standards in aviation; regulations of hazardous materials storage, handling, and air transportation; environmental impact assessments (IEnvA); waste management strategies; noise and emissions reduction techniques; green aviation technologies; Environmental Management System (EMS) in aviation. Emphasizing the integration of environmental safety within aviation operations.

Prerequisites: SFTY 201 or AVSF 210

Course Offered at: Daytona Beach, Worldwide

AVSF 320 Human Factors in Aviation Safety 3 Credits (3,0)

Emphasis on the major causative agent in aircraft accidents: the human being including psychological and physiological factors that affect accident probability; detailed analysis of ergonomics and its influence on aviation design.

Daytona Beach Prerequisites: AVSF 210

Prescott Prerequisites: AVSF 210

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 330 Aircraft Accident Investigation 3 Credits (3,0)

Methods and procedures in aircraft accident investigation; organization, duties, and procedures of an accident investigation board; analysis of probable cause; role of specialized laboratories; reporting procedures and follow-up to prevent related accidents.

Daytona Beach Prerequisites: AVSF 210

Prescott Prerequisites: AVSF 210

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 335 Mechanical and Structural Factors in Aviation Safety 3 Credits (3,0)

Influence of design, manufacturing, metallurgy, and maintenance on aircraft accidents; analysis of the failure process, stress and design loading, fatigue, corrosion, and the operational envelope.

Daytona Beach Prerequisites: AVSF 330

Prescott Prerequisites: AVSF 330

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 341 Safety and Security of Airport Ground Operations 3 Credits (3,0)

Safety and security hazards in airport ground operations; Federal Aviation Regulations and OSHA compliance; commercial and general aviation operations areas; Safety Management Systems; Airport Certification Manuals; airport emergency plans; human factors in organizational defenses; security barriers and safeguards; risk hazard assessment; personal protective equipment; wildlife management; bird strike mitigation; safety data analysis; ground vehicle operations; airfield terminal procedures; airport movement areas; accident investigation; individual risk reduction.

Prerequisites: AVSF 210

Course Offered at: Daytona Beach, Prescott

AVSF 342 Investigation of Aircraft Systems and Components 3 Credits (3,0)

New avionics technologies and investigative techniques for determining aircraft accident causes. Focus on systems like hydraulics, pneumatics, flight controls, and digital avionics subsystems.

Prerequisites: AVSF 330 and PHYS 113

Course Offered at: Daytona Beach

AVSF 345 Aviation Safety Program Management 3 Credits (3,0)

Examination of principles in the development and management of an effective safety program. Philosophy and historical development of major concepts with emphasis on concern in organizational accident prevention. Influence of morale, education, training, the role of the supervisor, and other interactions between valuable program elements for safety manager. **Daytona Beach Prerequisites:** (SFTY 201 or AVSF 210) and MGMT 201 and (COMM 221 or COMM 222 or COMM 223)

Prescott Prerequisites: (SFTY 201 or AVSF 210) and MGMT 201 and (COMM 221 or COMM 222 or COMM 223)

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 350 Aircraft Crash and Emergency Management 3 Credits (3,0)

Theory, practices, and techniques utilized in the response phase of aircraft crashes and emergencies; emergency response at the CFR agency level; airport response and administration levels; interactions between related and associated entities involved in aircraft mishaps.

Daytona Beach Prerequisites: AVSF 210

Prescott Prerequisites: AVSF 210

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 357 Language as a Factor in Aviation Safety 3 Credits (3,0)

Role of language in aviation accidents; communication factors in aviation safety and operations; Communication Taxonomy.

Course Offered at: Daytona Beach

AVSF 375 Propulsion Plant Investigation 3 Credits (3,0)

Fundamentals of aircraft reciprocating and turbine engines; propulsion and propeller technologies relevant to accident investigative procedures; basic construction and design; power plant and systems mishap investigation; engine teardown and disassembly procedures.

Prerequisites: AVSF 330 and PHYS 113

Course Offered at: Daytona Beach, Prescott

AVSF 399 Special Topics in Safety 1-6 Credit (1-3,0)

Individual, independent, or directed studies of selected topics in aviation safety.

Course Offered at: Daytona Beach, Prescott, Worldwide, Asia

AVSF 401 Fatigue Risk Management Systems 3 Credits (3,0)

Principles and application of Fatigue Risk Management Systems (FRMS) in aviation: human factors and fatigue science; regulatory requirements; fatigue risk assessment and mitigation strategies; implementation and monitoring techniques; case studies and real-world applications; emphasizing SMSs and compliance.

Prerequisites: AVSF 202 and AVSF 320

Course Offered at: Daytona Beach

AVSF 409 Aviation Safety 3 Credits (3,0)

Aviation safety program focusing on flight and ground operations safety; impact of accidents on the industry; human factors, basic accident prevention programs, and roles of government and industry organizations.

Course Offered at: Worldwide, Asia

AVSF 435 Aircraft Crash Survival Analysis and Design 3 Credits (3,0)

Analysis of accident environments with focus on occupant protection. Study of injury mechanisms, impact physics, and methods for reducing accident effects.

Prerequisites: AVSF 330

Course Offered at: Daytona Beach, Prescott

AVSF 445 System Safety and Risk Management 3 Credits (3,0)

Principles of system safety with an emphasis on the aviation/aerospace industry. Risk assessment techniques; safety management systems; hazard identification and analysis; safety performance monitoring; regulatory standards and compliance; human factors in safety; safety culture and leadership; basic design concepts; testing, maintenance / systems management; operational employment.

Prerequisites: SFTY 201 or AVSF 210 and STAT 222

Course Offered at: Daytona Beach, Prescott

AVSF 455 Aviation Safety Analytics 3 Credits (3,0)

Analytics of digital data in aviation, including Flight Operational Quality Assurance. Analysis of operational risks and development of safety interventions based on data.

Prerequisites: AVSF 210 and STAT 222

Course Offered at: Daytona Beach

AVSF 475 Senior Project 3 Credits (3,0)

Capstone research project integrating safety principles and emphasis on practical applications and real-world problem-solving. Risk assessment and mitigation strategies; safety management systems (SMS); human factors and error analysis; regulatory compliance; emergency response planning; research methodology and project presentation.

Prerequisites: AVSF 320 and AVSF 345 and SFTY 355 and SFTY 311 and SFTY 422 and AVSF 445

Course Offered at: Daytona Beach

AVSF 499 Special Topics in Safety 1-6 Credit (1-6,0)

Individual, independent, or directed studies of selected topics in aviation safety.

Course Offered at: Daytona Beach, Prescott, Worldwide