



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: apply@aaticd.co.za · Website: www.aaticd.co.za

COURSE BROCHURE

Human Factors in Aviation Explained

Physical, Mathematical, Computer and Life Sciences / Physical Sciences

Unit Standard 261181 · NQF Level 4 · 8 Credits · 5 Days

COURSE OVERVIEW

This course provides a comprehensive understanding of human factors in aviation, focusing on how human performance, limitations, and behaviors impact safety and efficiency in aviation operations. Learners will explore key concepts such as situational awareness, decision-making, communication, and error management to enhance aviation safety.

Category	Physical, Mathematical, Computer and Life Sciences
Subfield	Physical Sciences
Unit Standard	261181
Accreditation	SAQA Accredited · NQF Level 4 · 8 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Explain the role of human factors in aviation safety and performance.
- Apply models of human error and decision-making to aviation scenarios.
- Analyze the impact of fatigue, stress, and communication on aviation operations.
- Demonstrate techniques for improving situational awareness and crew resource management.
- Evaluate human factors issues in aviation incidents and accidents.
- Implement strategies to mitigate human error in aviation environments.

WHO SHOULD ATTEND

- This course is designed for aviation professionals including pilots, cabin crew, ground staff, maintenance personnel, and aviation managers seeking to deepen their understanding of human factors.
- It is also suitable for individuals entering the aviation industry who need foundational knowledge in this area.

COURSE OUTLINE

Day 1: Introduction to Human Factors and Their Impact on Aviation Safety

- What are human factors? Definitions and scope.
- The SHELL model (Software, Hardware, Environment, Liveware).
- History of human factors in aviation: from early accidents to modern systems.
- Human error: types, causes, and classification (e.g., slips, lapses, mistakes).
- The Dirty Dozen: common human error precursors.
- Introduction to safety culture and just culture.
- Case study: Tenerife runway disaster (1977) – human factors lessons.

Day 2: Human Performance and Limitations – Physiology and Psychology

- Circadian rhythms, sleep, and fatigue: causes, effects, and countermeasures.
- Stress: types, symptoms, and management techniques.
- Sensory systems: vision, hearing, and vestibular illusions.
- Information processing: attention, perception, memory, and decision-making.
- Alcohol, drugs, and medication: impact on performance and regulations.
- Health and fitness for duty: medical standards and self-assessment.
- Practical techniques for managing fatigue and stress in aviation.

Day 3: Communication, Teamwork, and Crew Resource Management (CRM)

- Communication models and barriers: verbal, non-verbal, and written.
- Standard phraseology and read-back/hear-back procedures.
- Team dynamics: roles, responsibilities, and shared mental models.
- Leadership, followership, and assertiveness.
- Crew Resource Management (CRM): history, principles, and applications.
- Decision-making models: naturalistic, analytical, and recognition-primed.
- Case study: Avianca Flight 52 (1990) – communication and decision-making failures.

Day 4: Human Factors in Maintenance, Design, and Automation

- Maintenance human factors: fatigue, procedures, documentation, and shift work.
- The Dirty Dozen in maintenance: examples and prevention.
- Human-machine interface: displays, controls, and alarm design.
- Automation: benefits, pitfalls, and mode awareness.
- Automation bias and complacency.
- Design for error tolerance: forcing functions and barriers.
- Case study: Aloha Airlines Flight 243 (1988) – maintenance human factors.

Day 5: Safety Management Systems (SMS), Threat and Error Management (TEM), and Practical Integration

- Safety Management Systems (SMS): policy, risk management, assurance, promotion.
- Threat and Error Management (TEM): threats, errors, and undesired aircraft states.
- Incident and accident investigation: human factors analysis.
- Reporting systems: just culture and voluntary reporting.
- Organisational factors: culture, resources, and change management.
- Review of key human factors models (SHELL, Dirty Dozen, PEAR).
- Creating a personal human factors action plan.
- Final assessment and course wrap-up.

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **8 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 23,000.00	R 23,000.00
1	In-House	R 29,900.00	R 29,900.00
1	On-Campus (Pretoria)	R 34,500.00	R 34,500.00

UPCOMING SESSIONS

No sessions are currently scheduled. Please contact us to arrange a session at a time and location that suits your team.

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 261181) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call **+27 12 004 8389** or WhatsApp **+27 65 077 6310** and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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