



Accredited Africa Training Institute for Capacity Development

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

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COURSE BROCHURE

Routine Test Flying in Aircraft Operations

Physical, Mathematical, Computer and Life Sciences / Physical Sciences

Unit Standard 243289 · NQF Level 6 · 16 Credits · 13 Days

COURSE OVERVIEW

This course equips pilots with the specialised skills and knowledge required to safely and effectively conduct routine test flights in aircraft. It covers pre-flight planning, in-flight test procedures, data recording, and post-flight analysis to ensure aircraft airworthiness and operational safety.

Category	Physical, Mathematical, Computer and Life Sciences
Subfield	Physical Sciences
Unit Standard	243289
Accreditation	SAQA Accredited · NQF Level 6 · 16 Credits
Duration	13 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Plan and prepare for a routine test flight in accordance with manufacturer specifications and regulatory requirements.
- Execute test flight manoeuvres to assess aircraft performance, handling, and systems functionality.
- Analyse in-flight data and observations to identify deviations from expected performance.
- Document test flight results accurately and complete required post-flight reports.
- Evaluate aircraft airworthiness based on test flight outcomes and recommend necessary maintenance actions.
- Demonstrate adherence to safety protocols and emergency procedures during test flights.

WHO SHOULD ATTEND

- This course is designed for licensed commercial pilots and airline transport pilots who are required to perform routine test flights as part of their duties.
- It is also suitable for test pilots and flight operations personnel seeking to enhance their competency in aircraft testing.

COURSE OUTLINE

Day 1: Introduction to Routine Test Flying and Regulatory Framework

- Overview of routine test flying in aircraft operations.
- Regulatory framework: CAA, SA-CATS, and international standards.
- Roles and responsibilities of test team members.
- Safety management systems in test flying.
- Introduction to flight test documentation.
- Pre-flight risk assessment and hazard identification.

Day 2: Aircraft Systems Knowledge for Test Flying

- Powerplant systems: engines, propellers, fuel systems.
- Airframe systems: flight controls, landing gear, hydraulics.
- Avionics and instrumentation.
- Environmental systems: pressurization, air conditioning.
- Emergency systems: fire protection, oxygen.
- System performance monitoring during test flights.

Day 3: Aerodynamics and Flight Performance Principles

- Lift, drag, thrust, and weight relationships.
- Stall characteristics and high-speed aerodynamics.
- Longitudinal, lateral, and directional stability.
- Control surface effectiveness and hinge moments.
- Performance: takeoff, climb, cruise, descent, landing.
- Envelope expansion and flight test limits.

Day 4: Flight Test Instrumentation and Data Acquisition

- Types of flight test instrumentation: sensors, recorders.
- Calibration procedures and traceability.
- Data acquisition systems and telemetry.
- Real-time monitoring and post-flight analysis.
- Data reduction and error analysis.
- Quality control and documentation.

Day 5: Test Planning and Mission Preparation

- Elements of a test plan: objectives, methods, risks.
- Mission planning tools and software.
- Briefing and debriefing techniques.
- Flight test cards: structure and use.
- Airspace coordination and NOTAMs.
- Emergency contingency planning.

Day 6: Conducting Routine Test Flights – Procedures and Techniques

- Standard test maneuvers: climbs, descents, turns.
- Stall and spin testing procedures.
- Handling qualities evaluation.
- Engine performance tests.
- Systems functional checks.

- Emergency procedures during test flights.

Day 7: Data Analysis and Performance Evaluation

- Data reduction techniques.
- Performance parameter extraction.
- Comparison with specifications and models.
- Statistical analysis and uncertainty.
- Anomaly investigation and root cause analysis.
- Report writing and presentation.

Day 8: Aircraft Handling Qualities Assessment

- Cooper-Harper handling qualities rating scale.
- Longitudinal and lateral-directional handling.
- Control harmony and force feel.
- Stall and post-stall characteristics.
- Takeoff and landing handling.
- Pilot workload measurement techniques.

Day 9: Systems Integration and Avionics Testing

- Avionics integration testing.
- Autopilot and flight director evaluation.
- Navigation system accuracy (GPS, INS).
- Communication system performance.
- Display and alerting system testing.
- Failure modes and effects analysis (FMEA).

Day 10: Special Test Conditions and Environmental Factors

- Icing conditions: detection and effects.
- Turbulence and gust response.
- Crosswind takeoff and landing limits.
- High-altitude operations and hypoxia.
- Hot-weather performance and cooling.
- Noise and emission testing.

Day 11: Safety, Risk Management, and Emergency Procedures

- Flight test risk assessment matrix.
- Emergency procedure development.
- Crew resource management (CRM).
- Incident reporting and investigation.
- Safety culture and just culture.
- Lessons learned and continuous improvement.

Day 12: Regulatory Compliance and Certification

- Airworthiness standards (Part 21, Part 23/25).
- Compliance demonstration methods.
- Type certification process.
- Supplemental type certificates (STCs).
- Flight test report submission.
- Regulatory audits and inspections.

Day 13: Integrated Practical Assessment and Course Review

- Practical assessment: plan and brief a test flight.
- Simulated or actual test flight execution.
- Data analysis and report writing.
- Presentation of results.
- Course review and feedback.
- Final Q&A; and certification.

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 **16 NQF credits** at **NQF Level 6**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 47,900.00	R 47,900.00
1	In-House	R 62,300.00	R 62,300.00
1	On-Campus (Pretoria)	R 71,700.00	R 71,700.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	19 Aug 2026	On-Campus	Mauritius
05 Aug 2026	21 Aug 2026	On-Campus	Cape Town, South Africa
05 Aug 2026	21 Aug 2026	On-Campus	Lagos, Nigeria
06 Aug 2026	24 Aug 2026	On-Campus	Dubai, UAE
06 Aug 2026	24 Aug 2026	On-Campus	Johannesburg, South Africa
07 Aug 2026	25 Aug 2026	On-Campus	Pretoria, South Africa
10 Aug 2026	26 Aug 2026	On-Campus	Durban, South Africa
11 Aug 2026	27 Aug 2026	On-Campus	Dubai, UAE

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

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 243289) 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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