



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

Close Formation Flying for Pilots

Physical, Mathematical, Computer and Life Sciences / Physical Sciences

Unit Standard 243332 · NQF Level 5 · 12 Credits · 9 Days

COURSE OVERVIEW

This course equips pilots with the advanced skills and knowledge required to conduct close formation flying safely and effectively. It covers the principles of formation flight, communication protocols, emergency procedures, and adherence to aviation regulations. By the end, pilots will be able to execute precise formation maneuvers while maintaining situational awareness and minimizing risk.

Category	Physical, Mathematical, Computer and Life Sciences
Subfield	Physical Sciences
Unit Standard	243332
Accreditation	SAQA Accredited · NQF Level 5 · 12 Credits
Duration	9 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply formation flight principles to maintain precise positioning relative to lead aircraft.
- Analyze aerodynamic effects and wake turbulence to adjust position and avoid hazards.
- Implement standard radio communication protocols for formation flight coordination.
- Demonstrate emergency procedures for loss of visual contact, system failure, or weather deterioration.
- Evaluate flight performance using post-flight debriefing techniques to improve teamwork.
- Design formation flight plans that comply with airspace regulations and safety standards.

WHO SHOULD ATTEND

- This course is designed for licensed pilots who wish to specialize in close formation flying, particularly those involved in air shows, military operations, or aerial display teams.
- It is also suitable for flight instructors seeking to add formation flying training to their repertoire.

COURSE OUTLINE

Day 1: Introduction to Close Formation Flying

- Definition and types of formation flying
- Historical context and operational relevance
- Safety culture and risk management
- Pilot roles: Lead, Wingman, Slot
- Standard communication protocols and hand signals
- Regulatory requirements (SA CAA, ICAO)
- Human factors: spatial awareness, fatigue, stress

Day 2: Aerodynamics and Aircraft Performance in Formation

- Aerodynamics of formation flight: induced drag, lift distribution
- Wake turbulence: vortex generation and avoidance
- Aircraft performance: power settings, fuel consumption
- Weight and balance for formation configurations
- Energy management: airspeed, altitude, and configuration changes
- Effects of weather on formation performance

Day 3: Formation Positions and Geometry

- Formation positions: echelon left/right, line abreast, trail
- Visual references: wingtip, canopy, engine cowling
- Station-keeping: maintaining position relative to Lead
- Common errors: over/under correction, drifting
- Position changes: cross-unders, echelon turns
- Use of aircraft lights and markings

Day 4: Communications and Cockpit Procedures

- Radio phraseology: callsigns, commands, acknowledgements
- Standard cockpit procedures: checklists, briefings
- CRM: decision-making, workload management, assertiveness
- Brevity codes: visual signals, hand signs, radio brevity
- Emergency communications: lost wingman, radio failure
- Post-flight debriefing techniques

Day 5: Formation Takeoff and Joining Procedures

- Formation takeoff: line abreast, echelon, interval
- Joining procedures: from behind, from above/below
- Departure procedures: timing, routing, separation
- Visual scanning techniques for formation flight
- Collision avoidance: see-and-avoid, TCAS limitations
- Contingencies: abort, wave-off, rejoin

Day 6: Formation Manoeuvres and Navigation

- Basic manoeuvres: level turns, climbing turns, descending turns
- Formation navigation: pilotage, dead reckoning, GPS
- Crosswind compensation: crabbing, wing-down method
- Fuel management: crossfeed, endurance planning

- Operational tactics: trail formation for navigation
- Emergency procedures: lost wingman, diversion

Day 7: Advanced Formation Techniques

- Advanced positions: fighting wing, combat spread, fluid four
- Formation aerobatics: loop, roll, Immelmann turn
- Instrument approaches: ILS, VOR in formation
- Night formation: lighting, black-hole effect, illusions
- Weather: cloud avoidance, turbulence, icing
- High-density altitude operations

Day 8: Formation Emergency Procedures and Contingencies

- In-flight emergencies: engine failure, fire, system failures
- Lost wingman: procedures, radio calls, rejoin
- Aircraft malfunctions: partial panel, hydraulic failure
- Emergency landing: formation landing, separation
- Egress procedures: bailout, ditching
- Post-emergency debriefing and CRM review

Day 9: Practical Integration and Assessment

- Mission planning and briefing
- Simulated formation mission with multiple phases
- Emergency scenario injection
- Formation landing and taxi
- Debrief and performance evaluation
- Written examination (closed book)
- Course review and feedback

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 **12 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 35,000.00	R 35,000.00
1	In-House	R 45,500.00	R 45,500.00
1	On-Campus (Pretoria)	R 52,500.00	R 52,500.00

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 243332) 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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