



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

Design Visual And Instrument Flight Procedures Training

Law, Military Science and Security / Safety in Society

Unit Standard 120148 · NQF Level 6 · 18 Credits · 15 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to design visual and instrument flight procedures in accordance with international civil aviation standards. It covers the principles of flight procedure design, including obstacle clearance, airspace structures, and navigation system requirements. Successful learners will be able to produce safe, efficient, and compliant flight procedures for both visual and instrument approaches.

Category	Law, Military Science and Security
Subfield	Safety in Society
Unit Standard	120148
Accreditation	SAQA Accredited · NQF Level 6 · 18 Credits
Duration	15 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply international standards and recommended practices (SARPs) for the design of visual and instrument flight procedures.
- Analyze airspace structures and navigation system capabilities to determine optimal procedure design parameters.
- Design instrument approach procedures (IAPs) and standard instrument departures (SIDs) using appropriate software tools.
- Evaluate obstacle clearance surfaces and ensure compliance with required obstacle assessment criteria.
- Implement quality assurance processes to validate the safety and efficiency of designed flight procedures.
- Demonstrate the ability to document and present flight procedure designs in accordance with regulatory requirements.

WHO SHOULD ATTEND

- This course is designed for aviation professionals, including flight procedure designers, air traffic controllers, pilots, and aviation safety inspectors who require formal training in flight procedure design.

COURSE OUTLINE

Day 1: Introduction to Flight Procedure Design

- Overview of ICAO and SA-CAA regulations
- Roles of procedure designers, air traffic control, and pilots
- Basic terminology: waypoints, fixes, legs, segments
- Principles of safety, efficiency, and environmental considerations
- Introduction to the design process lifecycle

Day 2: Aeronautical Charts and Navigation Aids

- Types of aeronautical charts: IFR, VFR, SID, STAR, approach plates
- Navigation aids: VOR, DME, NDB, ILS, GPS
- Chart symbols, scales, and projections
- Latitude/longitude and grid coordinates
- Obstacle identification and charting

Day 3: Obstacle Assessment and Terrain Awareness

- Sources of obstacle data: surveys, databases, charts
- Obstacle clearance surfaces and gradients
- Terrain awareness and warning systems
- Introduction to PANS-OPS obstacle assessment surfaces
- Practical exercise: identify obstacles for a sample airport

Day 4: Instrument Flight Procedure Design Principles

- PANS-OPS design criteria overview
- Conventional vs. RNAV navigation specifications
- En-route segment design: straight, turning, and holding
- Turn protection: radius, bank angle, and wind effects
- Flyability and pilot workload considerations

Day 5: Standard Instrument Departures (SIDs)

- SID design criteria and types (pilot-nav, radar, RNAV)
- Obstacle clearance for departures
- Climb gradients and acceleration segments
- SID coding and charting conventions
- Practical exercise: design a SID for a sample airport

Day 6: Standard Terminal Arrival Routes (STARs)

- STAR design criteria and types
- Descent planning: speed and altitude constraints
- Holding patterns: design and placement
- Approach transitions: feeder routes and initial approach fixes
- Practical exercise: design a STAR for a sample airport

Day 7: Non-Precision Approach Procedures

- NPA types: VOR, NDB, GPS, LOC
- Final approach segment design: descent gradient, stepdown fixes
- Obstacle clearance for final and missed approach
- Circling approach: visibility and ceiling requirements

- Practical exercise: design an NPA for a sample airport

Day 8: Precision Approach Procedures (ILS)

- ILS components and categories
- Precision approach terrain clearance (PATC) surfaces
- Obstacle assessment for ILS: OAS, OCA/H
- ILS critical and sensitive areas
- Practical exercise: design an ILS approach for a sample airport

Day 9: Visual Flight Procedures and Segmented Circuits

- VFP design principles: circuit patterns, entry and exit
- Visual obstacle clearance: visual segment surfaces
- Segmented circuits: base, final, and crosswind legs
- Integration with IFR procedures: conflict avoidance
- Practical exercise: design a VFP for a sample aerodrome

Day 10: Missed Approach and Holding Procedures

- Missed approach criteria: point of initiation, climb gradient, turning
- Obstacle clearance for missed approach surfaces
- Holding pattern design: inbound leg, timing, protected airspace
- Holding pattern entry procedures and flyability
- Practical exercise: design missed approach and holding for a sample approach

Day 11: RNAV and RNP Procedures

- RNAV navigation specification: RNAV 1, RNAV 2, RNP 0.3, etc.
- RNP system performance: accuracy, integrity, continuity, functionality
- RNP obstacle clearance: containment and protection areas
- RNP AR approach design: curved paths, RF legs
- Practical exercise: design an RNP approach with RF leg

Day 12: Airspace Design and Integration

- Airspace design: controlled, uncontrolled, special use
- Procedure integration: SID/STAR/approach sequencing
- Traffic flow management: arrival/departure routes
- Separation minima: lateral, vertical, longitudinal
- Practical exercise: design terminal airspace for a busy airport

Day 13: Quality Assurance and Validation

- QA standards: ISO, ICAO, SA-CAA requirements
- Validation methods: manual calculation, simulation, flight check
- Error detection: obstacle conflicts, flyability issues, chart discrepancies
- Documentation: design records, change logs, safety assessments
- Practical exercise: validate a sample procedure and report findings

Day 14: Charting and Publication

- ICAO chart specifications: Annex 4, Doc 8697
- Chart types: SID, STAR, approach, airport, VFP
- Chart elements: plan view, profile, text, minima boxes
- AIS publication process: AIP amendments, NOTAMs
- Practical exercise: create a chart for a designed procedure

Day 15: Capstone Project and Review

- Capstone project: SID, STAR, approach (precision/non-precision), missed approach, holding, VFP
- Integration and conflict resolution
- Presentation to peers and instructor
- Final review: common pitfalls, best practices, exam preparation
- Course evaluation 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 **18 NQF credits** at **NQF Level 6**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 53,500.00	R 53,500.00
1	In-House	R 69,500.00	R 69,500.00
1	On-Campus (Pretoria)	R 80,200.00	R 80,200.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	28 Aug 2026	On-Campus	Dubai, UAE
11 Aug 2026	31 Aug 2026	On-Campus	Pretoria, South Africa
12 Aug 2026	01 Sep 2026	On-Campus	Abu Dhabi, UAE
13 Aug 2026	02 Sep 2026	On-Campus	Durban, South Africa
13 Aug 2026	02 Sep 2026	On-Campus	Mauritius
14 Aug 2026	03 Sep 2026	On-Campus	Cape Town, South Africa
17 Aug 2026	04 Sep 2026	On-Campus	Pretoria, South Africa
18 Aug 2026	07 Sep 2026	On-Campus	Abu Dhabi, 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 120148) 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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