



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

Techniques for Indefinite and Definite Integrals

Physical, Mathematical, Computer and Life Sciences / Mathematical Sciences

Unit Standard 243832 · NQF Level 4 · 5 Credits · 2 Days

COURSE OVERVIEW

This course equips learners with a comprehensive toolkit for solving both indefinite and definite integrals using a variety of techniques. Participants will develop proficiency in integration methods such as substitution, integration by parts, partial fractions, and trigonometric integrals, enabling them to apply these skills in mathematical modelling and problem-solving contexts.

Category	Physical, Mathematical, Computer and Life Sciences
Subfield	Mathematical Sciences
Unit Standard	243832
Accreditation	SAQA Accredited · NQF Level 4 · 5 Credits
Duration	2 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply substitution techniques to evaluate indefinite and definite integrals.
- Analyze and select appropriate integration methods including integration by parts and partial fractions.
- Evaluate definite integrals using the Fundamental Theorem of Calculus and numerical methods where applicable.
- Demonstrate proficiency in integrating trigonometric, exponential, and logarithmic functions.
- Design solutions to real-world problems by applying integration techniques in modeling contexts.
- Implement error-checking strategies to verify the correctness of integrated results.

WHO SHOULD ATTEND

- This course is designed for professionals, students, and individuals who require advanced calculus skills in fields such as engineering, physics, economics, or data science.
- It is suitable for those who have a foundational understanding of differential calculus and wish to deepen their integration techniques.

COURSE OUTLINE

Day 1: Fundamental Techniques of Indefinite Integration

- Review of derivatives and antiderivatives.
- The indefinite integral and constant of integration.
- Power rule, constant multiple, sum/difference rules.
- Integration of exponential functions (e^x , a^x).
- Integration of basic trigonometric functions.
- Integration by substitution (u-substitution).
- Integration of simple rational functions ($1/x$, $1/(ax+b)$).
- Practice problems with step-by-step solutions.

Day 2: Advanced Techniques and Definite Integrals

- Integration by parts: formula and selection of u and dv.
- Definite integrals: evaluation and properties.
- Fundamental Theorem of Calculus (Parts 1 and 2).
- Area between curves.
- Volumes of revolution: disk and washer methods.
- Integration using partial fractions.
- Trigonometric integrals using identities.
- Mixed practice and problem-solving session.

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 **5 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 15,400.00	R 15,400.00
1	In-House	R 20,000.00	R 20,000.00
1	On-Campus (Pretoria)	R 23,100.00	R 23,100.00

UPCOMING SESSIONS

Start	End	Method	Venue
06 Aug 2026	07 Aug 2026	On-Campus	Dubai, UAE
06 Aug 2026	07 Aug 2026	On-Campus	Johannesburg, South Africa
10 Aug 2026	11 Aug 2026	On-Campus	Abu Dhabi, UAE
10 Aug 2026	11 Aug 2026	On-Campus	Cape Town, South Africa
11 Aug 2026	12 Aug 2026	On-Campus	Pretoria, South Africa
11 Aug 2026	12 Aug 2026	On-Campus	Mauritius
12 Aug 2026	13 Aug 2026	On-Campus	Durban, South Africa
12 Aug 2026	13 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 243832) 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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