



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

Hand Shaping Diamond Gemstones Fancy Cut Techniques Training

Manufacturing, Engineering and Technology / Fabrication and Extraction

Unit Standard 110223 · NQF Level 3 · 21 Credits · 18 Days

COURSE OVERVIEW

This course equips learners with the advanced skills required to hand shape diamond gemstones into fancy cuts, such as princess, emerald, and marquise shapes. Participants will master the techniques of marking, bruting, and polishing to produce high-value finished stones.

Category	Manufacturing, Engineering and Technology
Subfield	Fabrication and Extraction
Unit Standard	110223
Accreditation	SAQA Accredited · NQF Level 3 · 21 Credits
Duration	18 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Analyse rough diamond characteristics to determine optimal fancy cut shapes.
- Apply marking and bruting techniques to shape diamonds into specified fancy cuts.
- Demonstrate faceting and polishing procedures to achieve precise angles and symmetry.
- Evaluate finished stones against industry quality standards for brilliance and proportion.
- Implement safety protocols for handling and shaping diamond gemstones.
- Design a cutting plan that maximises yield while adhering to fancy cut specifications.

WHO SHOULD ATTEND

- This course is designed for diamond cutters, gemologists, and jewellery artisans seeking to specialise in fancy cut diamond shaping.
- It is also suitable for apprentices in the diamond industry who have basic lapidary experience.

COURSE OUTLINE

Day 1: Introduction to Fancy Cut Diamond Shaping

- Course overview and assessment criteria
- Diamond anatomy and crystallography
- Overview of fancy cut categories
- Principles of symmetry and proportion
- Introduction to dop sticks, hand pieces, and scaifes
- Safety procedures in the workshop

Day 2: Diamond Properties and Cleavage Planning

- Diamond hardness and cleavage planes
- Grain direction and its effect on shaping
- Inclusion mapping and yield optimisation
- Loupe and microscope techniques
- Marking and scribing methods
- Cleaving vs. sawing decisions

Day 3: Sawing and Cleaving Rough Diamonds

- Diamond saw types and blade selection
- Sawing parameters: speed, pressure, lubrication
- Cleaving hammer and chisel technique
- Clamping and orientation
- Post-sawing inspection
- Troubleshooting common sawing defects

Day 4: Introduction to Bruting and Girdle Shaping

- Bruting machine components and setup
- Hand bruting vs. mechanical bruting
- Creating a girdle outline for fancy shapes
- Girdle thickness standards
- Measuring with callipers and gauges
- Safety precautions during bruting

Day 5: Faceting Theory and Angle Calculations

- Facet nomenclature and symmetry
- Crown and pavilion angle calculations
- Critical angle and total internal reflection
- Faceting machine parts and adjustments
- Protractor and cheater use
- Angle verification techniques

Day 6: Crown Faceting – Main and Star Facets

- Crown main facet sequence
- Star facet placement and proportions
- Facet alignment and symmetry checks
- Polishing techniques for crown facets
- Common crown defects and corrections

- Practice on quartz or CZ

Day 7: Pavilion Faceting – Main and Lower Half Facets

- Pavilion main facet cutting order
- Lower half facet angles and placement
- Depth percentage and windowing avoidance
- Polishing pavilion facets
- Inspection for symmetry and finish
- Practice on synthetic material

Day 8: Girdle Faceting and Final Shaping

- Girdle faceting techniques
- Girdle thickness optimisation
- Final outline shaping
- Blending girdle with crown/pavilion
- Calliper and gauge measurements
- Weight estimation calculations

Day 9: Princess Cut – Step-by-Step Shaping

- Princess cut proportions and angles
- Pavilion chevron facet arrangement
- Crown facet layout for princess
- Cutting sequence and cheater use
- Symmetry checks
- Practice on CZ or quartz

Day 10: Emerald Cut – Step-by-Step Shaping

- Emerald cut proportions and angle requirements
- Step facet cutting order
- Crown and pavilion step layout
- Maintaining sharp facet junctions
- Polish techniques for step cuts
- Practice on synthetic stone

Day 11: Oval and Pear Cut – Step-by-Step Shaping

- Oval proportions and facet arrangement
- Pear cut proportions and symmetry
- Bow-tie effect minimisation
- Girdle shaping for curved outlines
- Crown and pavilion facet adaptation
- Practice on two synthetic stones

Day 12: Marquise and Heart Cut – Step-by-Step Shaping

- Marquise proportions and facet layout
- Heart cut proportions and cleft shaping
- Point and lobe polishing techniques
- Symmetry and balance checks
- Practice on two synthetic stones

Day 13: Advanced Fancy Cuts – Cushion, Radiant, Trilliant

- Cushion cut – modified brilliant with rounded corners
- Radiant cut – rectangular with trimmed corners
- Trilliant cut – triangular brilliant
- Angle modifications for each shape
- Light performance assessment
- Practice on one advanced shape

Day 14: Polishing Techniques and Surface Finish

- Polishing compounds and their selection
- Scaife conditioning and speed settings
- Hand polishing vs. machine polishing
- Common polishing defects (e.g., burning, scratching)
- Microscopic inspection methods
- Correction of polishing errors

Day 15: Quality Control and Grading of Fancy Cuts

- Grading standards for fancy cuts
- Symmetry evaluation using proportion scope
- Polish quality assessment
- Inclusion visibility and clarity grading
- Light performance analysis
- Documentation and reporting

Day 16: Repair and Recutting of Fancy Cut Diamonds

- Damage assessment and yield analysis
- Repair vs. recut decision-making
- Repolishing chipped facets
- Recutting to improve symmetry or weight
- Minimising weight loss
- Practice on damaged synthetic stones

Day 17: Practical Integration – Cutting a Complete Fancy Cut Diamond

- Rough planning and yield estimation
- Sawing/cleaving, bruting, faceting sequence
- Crown and pavilion cutting
- Final polishing and inspection
- Time management strategies
- Troubleshooting during cutting

Day 18: Final Assessment and Course Review

- Practical assessment – cut a princess, emerald, or oval
- Grading of finished stone
- Course review and Q&A;
- Career pathways in diamond cutting
- Certification process and portfolio requirements
- Course evaluation

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 **21 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 56,300.00	R 56,300.00
1	In-House	R 73,200.00	R 73,200.00
1	On-Campus (Pretoria)	R 84,400.00	R 84,400.00

UPCOMING SESSIONS

Start	End	Method	Venue
04 Aug 2026	27 Aug 2026	On-Campus	Pretoria, South Africa
04 Aug 2026	27 Aug 2026	On-Campus	Lagos, Nigeria
05 Aug 2026	28 Aug 2026	On-Campus	Johannesburg, South Africa
06 Aug 2026	31 Aug 2026	On-Campus	Mauritius
07 Aug 2026	01 Sep 2026	On-Campus	Cape Town, South Africa
10 Aug 2026	02 Sep 2026	On-Campus	Pretoria, South Africa
11 Aug 2026	03 Sep 2026	On-Campus	Abu Dhabi, UAE
12 Aug 2026	04 Sep 2026	On-Campus	Mauritius

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 110223) 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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