



The PtSA Tool, Die and Mouldmaking (TDM) Apprenticeship Programme

PtSA, as the Development Quality Partner (DQP), has developed a number of SAQA approved artisan qualifications and apprenticeship programmes for the TDM and Special Machining industry in South Africa.

How does it Work?

A 4-year apprenticeship that combines:

- Trade Theory (theoretical training)
- Simulated practical workshop training.
- Work experience with participating companies (OJT).

What are the Trades and Qualifications?

- SAQA registered and QCTO and merSETA accredited Toolmaker NQF Level 5
- Tooling Machinist NQF Level 5

PtSA Centres of Excellence

The programmes are offered in QCTO accredited PtSA Centres of Excellence:

- Parow in Western Cape
- Gqeberha in Eastern Cape
- Hermanstad in Gauteng
- Pietermaritzburg in KwaZulu-Natal

Who is involved?

The programme is a partnership between PtSA and industry with the support of **the dtic**, focusing on the tool, die, mould and special machining industry in South Africa.

What are the advantages of the PtSA TDM Apprenticeship Programme compared to the Legacy Programme?

LEGACY APPRENTICESHIP PROGRAMME

- Qualifications are not linked to competency in an occupation.
- Many curricula are outdated.
- Long periods between theory and practice.
- The practical training and work experience are not always aligned to the requirements.
- In most instances the students are selected without reference to requirements of employers .

TDM APPRENTICESHIP PROGRAMME OFFERED BY PtSA

- PtSA focusses on toolmaking and special machining qualifications.
- The qualifications reflect occupational competency.
- Industry experts have recently developed the curricula.
- Trade theory, simulated practical training and work experience are closely aligned.
- Apprentices are carefully selected to ensure positive outcomes.
- There is a close interaction between PtSA and employers throughout the training.
- Qualification includes CAD, CNC and EDM.
- PtSA offers Maths, Science and English Remedial Courses to assist the students where necessary.

Change Technical Skills Training in a Company from a cost to a profit

- **During an apprenticeship a company receives benefits such as:**
 - Productive work by the apprentice during work experience (OJT),
 - SETA Grant towards training costs can be accessed,
 - Tax breaks from SARS,
 - BBBEE points for skills development.
- **After an apprenticeship a company benefits from:**
 - Skilled employees (trained to industry standards) are immediately productive,
 - Lower risk from recruitment (recruitment undertaken by PtSA),
 - Enhanced employee retention.

Subsidies and Incentives which can be accessed

Subsidy /Incentive /Allowance	Value	Note
SETA Apprenticeship Grant	R206 000	Paid in four (4) instalments over three (3) years.
SARS Training Allowance	Up to R44 500	Allowed in three (3) annual instalments.
SARS Employment Tax Incentive	R18 000	R1 000 pm for year one and R500 pm for year two.

Costs and Benefits of a PtSA Apprenticeship (per Apprentice)

Costs (based on four (4) year Apprenticeship)		Financial Benefits to the Company	
PtSA training costs @R62 000 PA x 4 years	R248 000	SETA apprenticeship training grant	R206 000
		SARS training allowance	R44 800
Apprentice wages based on MEIBC wage Scale for 2021	R467 000	SARS Tax incentive	R18 000
		Value of apprentice to Company	*R568 000
		Savings on Recruitment costs (recruitment by PtSA)	R50 000
Total Cost to Company:	R715 000	Total Benefit:	R886 800

NET BENEFIT TO COMPANY

R171 800

*Source: - "Final Report of Cost-Benefit-Quality Project" merSETA & University of Bremen June 2016, adjusted to 2021.

In order to participate in the PtSA TDM Apprenticeship Programme and receive these benefits you need to:

- Indicate your willingness to participate in the PtSA TDM Apprenticeship Programme by completing an Application Form (Application to Participate in the PtSA TDM Apprenticeship Programme—copy attached).
- Once an application for participation has been approved by PtSA , you need to employ one or more apprentices from a list of pre-screened candidates provided to you by PtSA or to recruit your own apprentice employee. You will be provided with these relevant details for the pre-screened candidates, and you will have the opportunity to interview the candidates in order to make your final selection.
- Be willing to allow the appointed apprentice/s to attend full time lectures and practical training modules at one of the PtSA Training Centres in Gauteng, Western Cape, Eastern Cape and KwaZulu-Natal as required.
- Be willing to host your apprentice/s and other apprentices on a rotational basis during the on-the-job practical work experience sessions. Our intention is to ensure that you always have an apprentice undergoing on-the-job practical training at your company.
- Prepare or provide a Workplace Skills Plan (WSP) for accessing the SETA grant (PtSA can assist with the preparation of such a WSP if needed).

Enquiries:

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Or

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COURSE CONTENT

The following table provides an overview of the content of the course.

Occupational Certificate: Toolmaker (NQF L5) SAQA ID 103177		
Knowledge Modules		
Level I	Level II	Level III
Trade Theory I	Trade Theory II	Trade Theory III
Applied subjects Safety MMS JPBL Introduction to Machining Mathematics	CAD I Plastics Processing I Metal Pressing, Blanking and Drawing I	CAD II Plastics Processing II Metal Pressing, Blanking and Drawing II
Project Management I CNC Milling Theory & Simulation I CNC Turning Theory & Simulation I	Project Management II	Project Management III Enterprise Resource Planning Manufacturing Economics
Practical Modules		
Job Planning, Benchwork and Layout (JPBL) Measurement, Materials and Safety (MMS) Drill Press I Turning Operations Chucking I Turning Operations Between Centres I Milling I Grinding Skills I Welding CNC Turning I CNC Milling I	Turning Operations Chucking II Turning Operations Between Centres II Milling II Grinding Skills II CNC Turning II CNC Milling II EDM Wire II EDM Plunge II	Metal Pressing Project Plastics Processing Project
OJT—Workplace Experience		
Register for Trade Test		

Pre-requisite for Trade Test

PARTNERSHIP FOR SKILLS DEVELOPMENT

To strengthen South Africa's capacity to produce tool, die, mould and special machining skills, the TDM industry, as represented by PtSA, partnered with the Department of Trade, Industry and Competition (**the dtic**) to form the **INTSIMBI** Future Production Technologies Initiative (IFPTI).

The Initiative was designed to meet the demands of the South African manufacturing industry for high-tech future-orientated toolmaking skills.

The PtSA TDM Powered Apprenticeship Programme is presented by PtSA Management Services (Pty) Ltd.

For more information, please contact :

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THE TDM POWERED APPRENTICESHIP PROGRAMME



BACKGROUND

Manufacturing is the process of transforming raw materials into new products. Manufacturing thus means "making things." Whether it is cell phones, computers, motor vehicles or plastic bottles, manufactured products are conceived, conceptualised, designed, created and maintained. The creation of new products happens in different stages starting with the design of the product, followed by the production of the tools required to manufacture the specific product and finally the application of the tools to manufacture the product because manufacturing cannot take place without tooling.

The design and production of these manufacturing tooling are done by highly skilled people known as toolmakers. They use advanced machines and equipment to produce precision tools such as jigs, moulds and dies which are then used in the manufacturing process of products. Toolmakers are employed in all manufacturing sectors from aerospace, automotive, chemical and electronics to the marine, medical, packaging and mining industries.

The TDM Powered Apprenticeship Programme provides toolmaker training at world-class accredited PtSA Centres of Excellence in Pretoria, Cape Town, Gqeberha and Pietermaritzburg. The centres boast conventional and advanced tooling manufacturing skills development infrastructure such as computer-aided design, manufacturing and engineering programmes and machines.

PtSA is a membership-based organisation with the mission of promoting, protecting and supporting the collective interests of the Tool, Die, Mould and Special Machining Industries of South Africa in continual support of the growth and development of all manufacturing sectors. PtSA is the only Association which focusses exclusively on the TDM Industry in South Africa and has a partnership agreement with government to support the TDM Industry.



WHO WOULD BE A GOOD CANDIDATE FOR A CAREER IN TOOLING MANUFACTURING?

Careers in tooling manufacture involve work activities that require a practical aptitude and involve the use of sophisticated computer-controlled equipment and machinery.

Candidates for a career in toolmaking must have the ability to visualise the product from a drawing and prefer responsibilities with a technical focus. They must enjoy work activities that present mathematical and scientific challenges.

THE PISA TDM POWERED APPRENTICESHIP TRAINING PROGRAMME

MINIMUM ENTRY REQUIREMENTS

Interested applicants must have successfully completed one of the following National Qualification Framework (NQF) Level 4 qualifications:

- Grade 12 with Mathematics (35%), Physical Science (35%) and English (40%)
- NC(V)4 with Mathematics (40%), Physical Science (50%) and English (40%)
- N3 with Mathematics (40%), Engineering Science (40%) as well as Gr 12 or NC(V)4 English (40%)

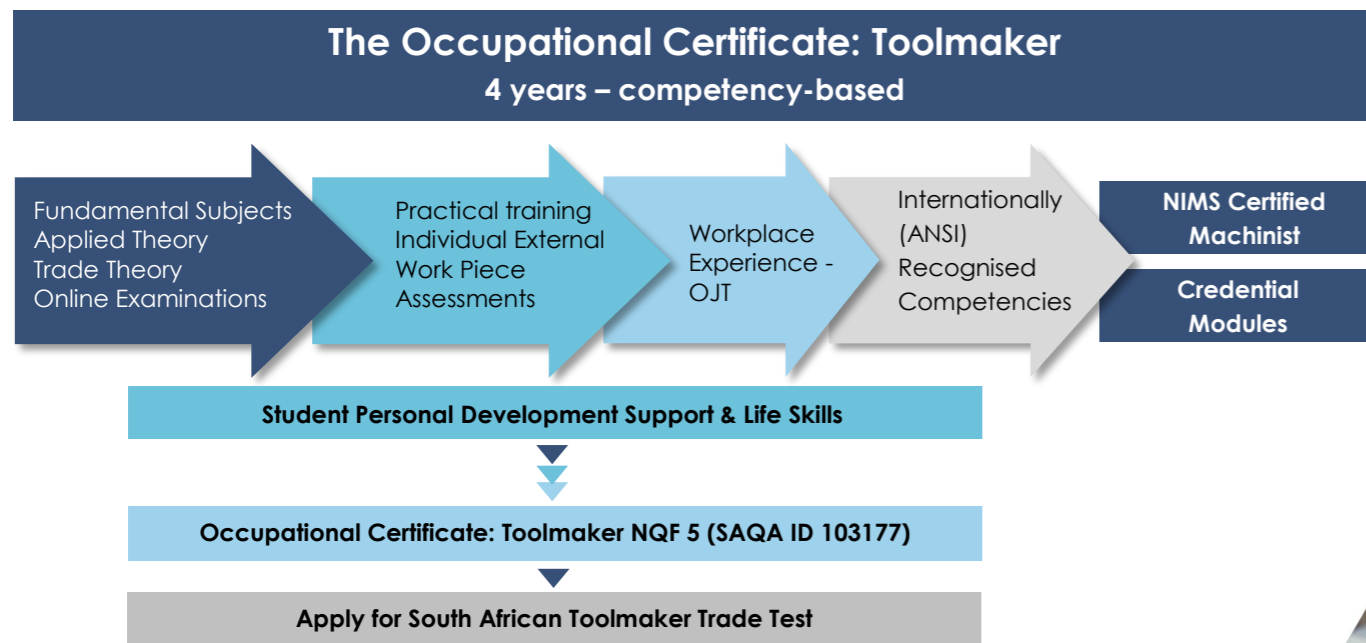
SELECTION FOR THE PISA TDM POWERED APPRENTICESHIP PROGRAMME

To be selected into the PISA TDM Powered Apprenticeship Programme, applicants must complete the application form and submit it on or before the specified closing date. Selected applicants will be interviewed and if successful, will participate in a final assessment for selection.

THE PROGRAMME

The Occupational Certificate: Toolmaker

On successful completion of the Toolmaker Trade Test the student will be awarded The Occupational Certificate: Toolmaker (NQF Level 05) – SAQA ID 103177. The Programme is modular and competency-based (not time-based) with a typical duration of 4 years (full time study) to achieve the Occupational Certificate: Toolmaker.



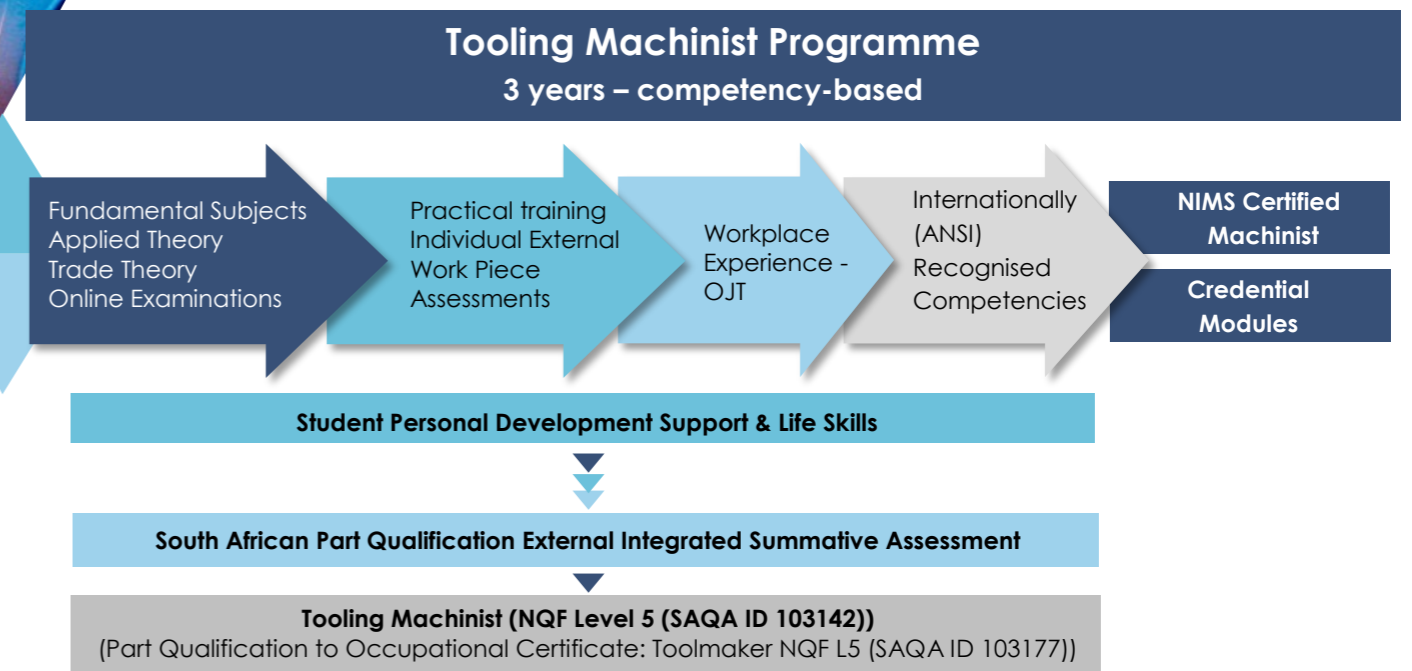
The design of the PISA TDM Powered Apprenticeship Programme allows students to enter and exit the Programme at different stages enabling them to complete credential modules over a period of time.

Tooling Machinist

Specialised machining has always been a part of tool, die and mouldmaking. The industry therefore has a significant need for trained machinists. A student who, for any reason, is unable to complete the PISA TDM Powered Apprenticeship Programme can still obtain a part qualification as Tooling Machinist. This qualification consists of a specific number of conventional and advanced machining credential modules successfully completed by the student.

This allows students to exit at different levels and be employable prior to completing a full qualification. On successful completion of the Tooling Machinist External Integrated Summative Assessment the candidate will be awarded **NQF Level: 05 Occupational Certificate: Tooling Machinist (NQF Level 05) SAQA ID 103142.**

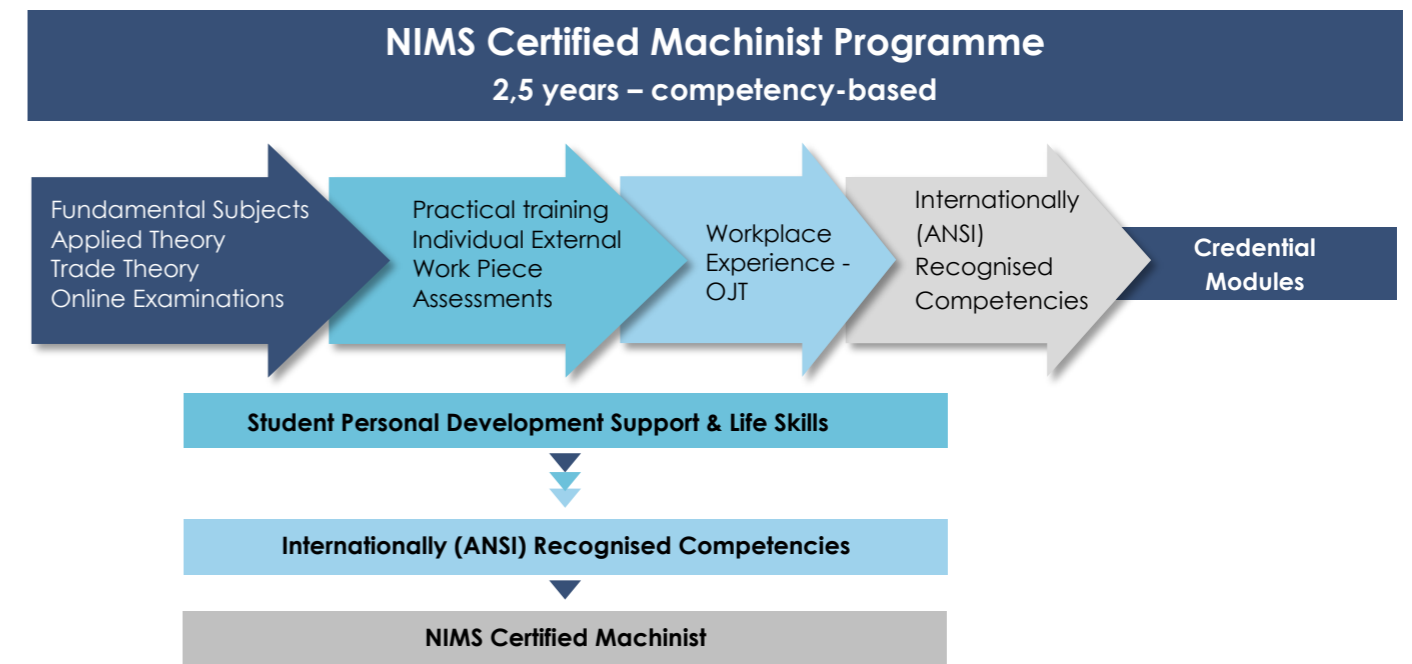
The Programme is modular and competency-based (not time-based) with a typical duration of 3 years (full time study) to achieve the Tooling Machinist qualification.



National Institute of Metalworking Skills (NIMS) Certified Machinist

The NIMS Certified Machinist qualification is an international qualification and forms the core of the tooling and machining qualifications offered by the PISA TDM Powered Apprenticeship Programme.

On successful completion of the NIMS Certified Machinist Programme the candidate will be awarded **the NIMS Certified Machinist** qualification. The Programme is modular and competency-based (not time-based) with a typical duration of 2.5 years (full time study) to achieve the NIMS Certified Tooling Machinist qualification.



Credential Modules

Specific competencies required for machinist and toolmaker qualifications can be attained by completion of stand-alone modules. Credential modules create the opportunity for earlier employability during a student's journey towards a full qualification.

Students who have dropped out but have successfully completed some credentials will get recognition and will be able to work in the industry. A credential job duty comprises of a practical element (a work piece complying with set quality standards), relevant machining theory assessed through an online examination and specific On-the-Job Training (OJT) duties.