

ELECTRICAL ENGINEERING

INVITATION TO QUOTE

An invitation is hereby issued to suitably qualified and experienced services providers to provide services as described on the table below:

Quotation Number	Quote Description	Price & BBBEE	Closing Date	Mandatory Requirements
RFB MUT 09/2025	An appointment of an experienced and qualified service provider to supply and deliver Test Bench for Electrical Machines for MUT	80/20	16 September 2025 at 10h00	 Valid Tax certificate Refer to document Bidders are requested to label their document as per TRS reference in the Bid document

Mangosuthu University of Technology is committed to the implementation of its Procurement Policy on Broad-based Black Economic Empowerment (BBBEE). For enquires please contact on Ms. Philly Hlophe, email philly@mut.ac.za, for Procurement related matters. For enquires please contact on Mr. Stephen Gumede, email stephen@mut.ac.za, for Technical related matters.

Quotation documents are to be downloaded via MUT website and must be deposited in the email address philly@mut.ac.za from Procurement, Umlazi Campus. No facsimile, late or bids will be accepted. The University does not bind itself to accept the lowest bid and reserves the right to accept the whole or part of any quotation. If you are not contacted within 90 working days after the closing date of the quotation, consider your quotation unsuccessful.





RFB MUT 09/2025SUPPLY, DELIVERY, COMMISSIONING, INSTALLATION AND MAINTANANCE OF ELECTRICAL

TEST BENCH FOR ELECTRICAL MACHINES, SLIP RING THREE PHASE ASYNCHRONOUS MOTOR, STARTING AND SYNCHRONOUS UNIT FOR SLIP RING MOTORS, ROTOR STARTER AND OPENLAB SEMI AUTOMATIC CONFIG

BID NUMBER:	RFB MUT 09/2025
BID ADVERTISED:	24 AUGUST 2025
BID ISSUED ON:	25 AUGUST 2025
COMPULSORY BRIEFING SESSION/SITE INSPECTION:	NOT APPLICABLE
BID CLOSING DATE & TIME:	16 SEPTEMBER 2025 @ 11:00AM
SUBMISSION FORMAT	ONE (1) ORIGINAL DOCUMENT AND ONE (1) ELECTRONIC COPY IN A USB (IN PDF SECURE FILE FORMAT)

Bid Documents marked "REQUEST FOR BID RFB MUT 09/2025 for the supply, delivery, commissioning, Installation and maintenance of **TEST BENCH FOR ELECTRICAL MACHINES, SLIP RING THREE PHASE ASYNCHRONOUS MOTOR AND STARTING AND SYNCHRONOUS UNIT FOR SLIP RING MOTORS, ROTOR STARTER AND OPENLAB SEMI AUTOMATIC CONFIG at MANGOSUTHU UNIVERSITY OF TECHNOLOGY (MUT) must be dropped off in the Bid box situated at Security Foyer, West Wing -Administrative Building ,Main campus, Mangosuthu Highway, Umlazi**

BIDDER'S INFORMATION

COMPANY NAME:	
ADDRESS:	
CONTACT NUMBER:	
NAME & SURNAME OF AUTHORISED	
PERSON:	
EMAIL:	
COMPANY REGISTRATION NUMBER	

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TRS 1: FORM OF OFFER/ BID OPENING

1. Bid Opening

Bidders shall complete this form of offer and submit it with the bid to facilitate the bid opening process.

This form does not replace the Pricing schedule.

Name of bidder submitting the bid:				
Offer (as is on the pricing schedule):				
Offer in words.				
Details of contact person:				
Name (Print):	_			
Telephone No:				
Cell Phone:	_			
E-mail Address:				
Signature:(Person authorised to sign the bid)				

1.2 COMPULSORY BRIEFING IS NOT APPLICABLE TO THIS TENDER.

1.3 Bid Submission / Closing Date

Tender Submission. Request for Bid RFB Mut 09/2025, Supply, Delivery, Commissioning, Installation and Maintenance of TEST BEANCH FOR ELECTRICAL MACHINES, SLIP RING THREE PHASE ASYNCHRONOUS MOTOR AND STARTING AND SYNCHRONOUS UNIT FOR SLIP RING MOTORS, ROTOR STARTER AND OPENLAB SEMI AUTOMATIC CONFIG AT MANGOSUTHU UNIVERSITY OF TECHNOLOGY (MUT) must be dropped off in the Bid box situated at Security Foyer, West Wing -Administrative Building ,Main campus, Mangosuthu Highway, Umlazi.

Closing Date: 16 September 2025

Filing Guidelines:

- Section one (1) Mandatory documents must be marked as Commercial Proposal.
- Section two (2) Pricing Section / and Financial Statement (where applicable)

 Marked as Financial Offering

NB: No late bids will be accepted.

Queries relating to the issue of these documents shall be addressed to the Employer's Agent(s)

MUT Representative/s to whom Commercial Enquiries must be addressed	Name: Miss Philly Hlophe Telephone Number: 031 907 7160 Email address: philly@mut.ac.za (All enquiries must be in writing.)	
MUT Representative to whom Technical Enquires must be addressed to	Name: Mr Stephen Gumede Telephone Number: 031 907 7211 Email address: stephen@mut.ac.za (All enquiries must be in writing.)	

TRS 2: BACKGROUND, OVERVIEW AND SCOPE OF REQUIREMENTS

TRS 2: BACKGROUND, OVERVIEW AND SCOPE OF REQUIREMENTS

2. Introduction

- Mangosuthu University of Technology (MUT) is situated at Umlazi South of Durban and overlooks the beautiful Indian Ocean. MUT provides students with career-oriented skills through a combination of theoretical knowledge and practical experience in the workplace.
- MUT co-operates closely with commerce and industry to ensure that the curriculum of a particular qualification is completely relevant to the chosen field and that the qualification is market related.
- MUT provides quality education and prepares its undergraduate and post-graduate students on its campus to be leaders of the highest calibres.
- Graduates enter the workplace equipped with the essential knowledge, range of abilities and
 practical experience relevant to their chosen careers. MUT provides students with careeroriented skills through a combination of theoretical knowledge and practical experience in the
 workplace.

2.1 Completion of Bid Document forms Special Instruction and Notice

- 2.1.1 Under no circumstances may the bid document be retyped or redrafted. Photocopies of the original bid document may be submitted electronically, but an original signature must appear on the physical document and the electronic copy of the original.
- 2.1.2 The bidder is advised to check the number of pages and satisfy himself that none are missing or duplicated.
- 2.1.3 Bids submitted must be fully completed, initialled, and signed where necessary failure to which may lead to disqualification.
- 2.1.4 The bid document must be submitted at the address indicated not later than the closing time specified, and in accordance with the directives in the bid documents.
- 2.1.5 All bids received in sealed envelopes with an electronic copy included (via USB in PDF file secure format),
- 2.1.6 All bids must be received sealed, and any opened envelopes will not be accepted.
- 2.1.7 No bids submitted by telegraphic or other electronic means will be considered unless otherwise stated.
- 2.1.8 Where samples are required, clear instruction will be given for the submission of such.
- 2.1.9 No alteration made by the bidder in the bid document shall be accepted (exceptions may be considered on the pricing schedule and must be initialled.
- 2.1.10 Use of correcting fluid is prohibited.
- 2.1.11 Bids will not be opened in public.
- 2.1.12 Prices will not be announced publicly.
- 2.1.13 In the case of more than one offer against any individual item, such offers should be given on a separate pricing schedule marked option two (2).

2.2 MUT's Rights

- 2.2.1 The MUT reserves the right not to award nor to further negotiate with the successful bidder(s) an applicable cost dispensation. All prices to be inclusive of VAT.
- 2.2.2 The MUT reserves the right not to appoint the lowest bidder.
- 2.2.3 The MUT may request clarification on any aspect of a bid submitted by the Bidders, such requests, and the responses to be in writing.
- 2.2.4 The MUT may reject all responses submitted by Bidders and embark on a new bidding process as it deems fit if there is failure to receive satisfactory responses.
- 2.2.5 The Bid awarded will be conditional and subject to successful negotiations and signing of a written contract, failing which MUT reserves the right to withdraw the bid and to award same to another bidder without the need to repeat the bidding process.
- 2.2.6 The MUT may in promotion of local to site Small Emerging Enterprises give preference to Designated Group.
- 2.2.7 MUT will endeavour to promote enterprise development in line with the Codes of Good Practice.
- 2.2.8 The treatment of Exempted Micro Enterprises (EMEs) will be as prescribed in the current B-BBEE Act.
- 2.2.9 The MUT reserves the right not to appoint a Bidder in the event where the bidder has existing contracts with MUT.
- 2.2.10 Bidders who previously provided unsatisfactory service to MUT will be disqualified.

2.3 Project/Service Background

The scope of works encompasses the SUPPLY, DELIVERY, COMMISSIONING, INSTALLATION AND MAINTANANCE OF TEST BEANCH FOR ELECTRICAL MACHINES, SLIP RING THREE PHASE ASYNCHRONOUS MOTOR AND STARTING AND SYNCHRONOUS UNIT FOR SLIP RING MOTORS, ROTOR STARTER AND OPENLAB SEMI AUTOMATIC CONFIG as well as training on the usage of the machine.

at Mangosuthu University of Technology - Main Campus, Umlazi.

This service ensures the smooth running of the Electrical laboratories' services in the University. The full extent of the works is defined in the specifications. (see Annexure M)

2.4 Contract Period

There must be a once off installation and commissioning of the equipment. The equipment must come with at least one year warranty/guarantee, thereafter the maintenance period must be 2 years and it should be done once a year.

2.5 Validity of Bid

- Proposals must remain open for a period of hundred and eighty (180) calendar days from date of closure and may be accepted at any time during the said period of hundred and eighty (180) days.
- MUT reserves the right to extend the validity period of the bid if the need arises.

2.6 Tax Compliance Requirements

- 2.6.1 A valid Tax Pin must be attached.
- 2.6.2 Bidders are required to complete the letter of Authorisation Form granting MUT permission to validate/ verify the Bidder's Tax Compliance Status from SARS (annexure D).
- 2.6.3 Non -Compliant status. Bidder will be afforded an opportunity to rectify their status within five (5) working days failing which will lead to disqualification.

2.7 Project/ Service Overview /Scope

Mangosuthu University of Technology (MUT) requests proposal from experienced Bidders for the SUPPLY, DELIVERY, COMMISSIONING, INSTALLATION AND MAINTANANCE OF TEST BEANCH FOR ELECTRICAL MACHINES, SLIP RING THREE PHASE ASYNCHRONOUS MOTOR AND STARTING AND SYNCHRONOUS UNIT FOR SLIP RING MOTORS, ROTOR STARTER AND OPENLAB SEMI AUTOMATIC CONFIG as well as training on the usage of the machine at Mangosuthu University of Technology – Main Campus, Umla

2.8 No Rights or Claims for Bidders

- 2.8.1 Receipt of the invitation to Bid does not confer any right on any bidder in respect of the Services/Goods or in respect of or against the MUT. MUT reserves the right, in its sole discretion, to withdraw by notice to Bidders any Services/Goods or combination of Services from the bidding process, to terminate any party's participation in the Bid process or to accept or reject any response to this invitation to Bid on notice to the Bidders without liability to any party. Accordingly, parties have no rights, expressed or implied, with respect to any of the Services/Goods because of their participation in the bidding process.
- 2.8.2 Neither the MUT nor any of their respective representatives will assume any obligations for any costs or expenses incurred by any party in or associated with any appraisal and/or investigation relating to this invitation to Bid or the subsequent submission of a Bid in response to this invitation to Bid in respect of the Services/Goods or any other costs, expenses or liabilities of whatsoever nature and howsoever incurred by Bidders in connection with or arising out of the Bidding process.

2.9 Non-Disclosures.

- The invitation to Bid and its contents are made available on condition that they are used
 in connection with the bidding process set out in the invitation to bid and for no other
 purpose. All information pertaining to this invitation to Bid and its contents shall be
 regarded as restricted and divulged on a "need to know" basis with the approval of MUT.
- When the Bidder is appointed in accordance with this invitation to Bid such Bidder may be subject to security clearance and Safety, Health, Environmental and Quality (SHEQ) compliance standards prior to commencement of the Services/Goods.
- The Bidder undertakes to ensure that all data and information (including but not limited to any technical, commercial, scientific information, processes, designs, technical specifications, copyright and data in any form) in connection with or arising from this Bid shall be kept confidential and agree not to disclose it to third parties and not to make use of such information other than for the purpose of participating in the Bid and to release such information to its employees on a "Clarity" basis only, provided that such employees undertake to be bound by the confidentiality contained herein.
- The bidder accepts that all information relating to completed bids received is confidential.
 Accordingly, MUT will not disclose this information to any third party.

2.10 Information Accuracy

The information contained in the invitation to bid has been prepared in good faith. Neither MUT nor any of their respective representatives or employees, make any representation or warranty or give any undertaking express or implied, or accept any responsibility or liability whatsoever, as to the contents, accuracy or completeness of the information contained in the invitation to bid, or any other written or oral information made available in connection with the bid and nothing contained herein is, or shall be relied upon as a promise or representation, whether as to the past or the future.

2.11 Competition Act

- 2.11.1 Bidders and their respective officers, employees and agents are prohibited from engaging in any collusive action with respect to the Bidding process which serves to limit competition amongst Bidders.
- 2.11.2 In general, the attention of Bidders is drawn to Section 4(1) (iii) of the Competition Act 1998 (Act No. 89 of 1998) (the Competition Act) that prohibits collusive Bidding.
- 2.11.3 If Bidders have reason to believe that competition issues may arise from any submission of a response to this Bid invitation they may make, they are encouraged to discuss their position with the competition authorities before submitting a response.
- 2.11.4 Any correspondence or process of any kind between Bidders and the competition authorities must be documented in the responses to this invitation to Bid.

2.12 Appeals

- 2.12.1 Bidders who are not successful may appeal in writing to MUT's Head of Supply Chain within three (3) working days of receiving the "Letter of Regret" notifying that the bid was unsuccessful.
- 2.12.2 Bidders are not allowed to enquire about another bidders' response, as this may contain privileged information (e.g., financial statement)

2.13 Fraud and Corruption

- 2.13.1 MUT takes a zero tolerance approach to fraud, corruption, bribery and dishonesty.
- 2.13.2 Any unlawful or illegal practice, or attempt thereto, by the bidder or MUT's personnel to offer, promise or given a bribe in relation to obtaining or the execution of such contract will lead to disqualification of the bidder and disciplinary action taken against the alleged parties.
- 2.13.3 Any bidder who acted in a fraudulent, collusive, anti-competitive or improper manner or in bad faith towards the University; or made any incorrect statement in any bid or declaration and is unable to prove to the satisfaction of the University that the statement was made in good faith or reasonable steps were taken to confirm the correctness of the statements will be disqualified and blacklisted from future opportunities within MUT.
- 2.13.4 MUT will uphold all laws relevant to the countering of bribery and corruption.
- 2.13.5 MUT will disqualify any bidder that was involved in any dishonest acts, is dishonest in the bidding document and makes any attempt to obtain a successful bid improperly.
- 2.13.6 Should the verification process identify any irregularities such bidding organization will be disqualified.

TRS 3: EVALUATION PROCESS



TRS 3: EVALUATION PROCESS

3.1 Introduction

To ensure that all bidders are afforded the opportunity to compete on an equal footing and to enable the Mangosuthu University of Technology to evaluate the Bids received on an equal basis, a predescribed process of evaluating bids will be followed.

3.2 Methodology

The evaluation of bids will be divided into two (2) stages (Mandatory requirements and BBBEE and Price- Preferential point system):

Stage 1: Mandatory Requirements.

Mandatory documentation – MUT will check whether all required documentation and/or certification have been included.

- 3.2.1 The MUT has defined minimum mandatory criteria listed in the table below that must be met by the Bidder for the MUT to accept an offer for evaluation.
- 3.2.2 Where there is failure to comply with the mandatory requirements or for any reason that MUT is unable to verify any of the mandatory documents the bid will not progress to the next stage of evaluation.
- 3.2.3 Documents submitted in support of this Bid must be documents of the Bidding entity. It is not permitted that documents submitted pertain to different companies or units within a group. As an example, a Bidder cannot submit its own BBBEE certificate but the financial statements of its parent or another company in the same group. Similarly, a Bidder cannot submit its own financial statement, but the BBBEE certificate, SARS certificate, etc. of other companies in the group.

Item no:	Description of Appendix	Compulsory at Evaluation Stage
1	Signed RFB Document	Yes
2	Company Registration Documents	Yes
3	SARS Pin	Yes
4	Certified ID Copies of all Company Directors	Yes
5	Board/Directors Resolution or Proxy (if not sole proprietor) that specifies the person is supposed to sign for the bid document.	Yes
6	Contactable dated, signed Reference in a letterhead – 1 letter from previous clients reflecting that the prospective bidder has delivered, installed, maintained and also provided training to their client with the same model.	Yes

Additional Requirements/Documents

Item no:	Description	Additional Requirements
1	Comprehensive Company Profile	Yes
2	Proof of Bank Account- bank letter confirming bank account details not less than three (3) months old	Yes
3	BBBEE Certificate/Affidavit Bidders will score zero if BBBEE Certificate is not submitted.	Yes
4	CSD registration MAAA number	Yes

Note:

No points are allocated to this phase; however, bids that do not meet the Mandatory requirements will not advance to the next phase of the evaluation process.



Stage 3: Evaluation in terms of the preference point system

Bids to the value of R50 000 000 (fifty million rand) will be evaluated in accordance with the 80/20 preference point system and bids greater than R50 000 000 (fifty million rand) will be evaluated in accordance with the 90/10 preference point system.

Only Bids that meet all the Mandatory requirements will be considered and evaluated further in terms of the relevant preference point system.

3.3 POINTS AWARDED FOR PRICE

THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:

80/20

$$Ps = 80 \left(1 - \frac{Pt - P\min}{P\min} \right)$$

Where

Ps = Points scored for price of bid under consideration

Pt = Price of bid under consideration

Pmin = Price of lowest acceptable bid

POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

1.1 Preference points will be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)	
1	10	20	
2	9	18	
3	6	14	
4	5	12	
5	4	8	
6	3	6	
7	2	4	
8	1	2	
Non-compliant contributor	0	0	

Note:

Non-compliant contributors or failure to provide certification substantiating the BBBEE status level of contribution will result in the Bidder being awarded zero (0) points for the preference point system.



TRS 4
TEMPLATE OF THE REFERENCE LETTERS
FOR A SIMILAR PROJECT, VALUE AND
SIZE.

TRS4: TEMPLATE OF THE REFERENCE LETTER FOR A SIMILAR PROJECT, VALUE AND SIZE.

References for similar size projects should be provided to demonstrate your ability to fulfil MUTs

requirements and demonst be Attached to this or the stamped.					
Supplier Name (Client)					
Name and Designation of Referee					
Telephone No				ч	-
Email Address					<i>>></i>
Date of Reference					
Date or period service was provided					
Contract Value					>
Service Offering (please indicate the service/goods provided/supplied by the Bidder)					
Brief description of the bidder's performance					
Criteria		Needs Improvement	Meets Requirements	Exceeds Requirements	Exceeds Requirements and Adds Value
1. How satisfied are you valued of service/Goods and professionalism received Bidder?	nd				



TRS 5

COMPANY REFERENCES AND PAST EXPERIENCE



TRS: 5 COMPANY REFERENCES AND PAST EXPERIENCE

List all previous contract from customers with similar requirements as MUT. These references may also be contacted by MUT for verification purposes in the event where the provided reference letters cannot be verified.

Name of Company	Contact Name	Value of Contract	Contract period	Contact Number	Email Address
1.					
2.					
3.					
4.				225	
5.				>>	
6.				>>	
7.				- N	



TRS 6 BIDDER FORM, IMPORTANT CONDITIONS & MISCELLANEOUS REQUIREMENTS

TRS: 6 BIDDER FORM, IMPORTANT CONDITIONS & MISCELLANEOUS REQUIREMENTS

- 1. I/We hereby bid to supply all or any of the supplies and/or to render all or any of the services described in the attached documents to MUT on the items and conditions and in accordance with the specifications stipulated in the bid documents (and which shall be taken as part of, and incorporated into, this bid) at the prices and on the terms regarding time for delivery and/or execution inserted therein.
- 2. I/We agree that:
- 2.1 the offer herein shall remain binding upon me/us and open for acceptance by MUT during the validity period indicated and calculated from the closing time of the Bid.
- 2.2 if I/we withdraw my/our Bid within the period for which I/we have agreed that the bid should remain open for acceptance, or fail to fulfil the contract when called upon to do so, MUT may without prejudice to its other rights, agree to the withdrawal of my/or bid or cancel the contract that may have been entered into between me/us and MUT and I/we will then pay to MUT any additional expense incurred by MUT having either to accept any less favourable Bids or fresh Bidders have to be invited, the additional expenditure incurred by the invitation of fresh Bid and by the subsequent acceptance of any less favourable Bid, MUT shall also have the right to recover such additional expenditure by set-off against moneys which may be due or become to me/us under this or any other bid or contact or against any guarantee or deposit that have been furnished by me/us or on my/our behalf for the due fulfilment of this or any other Bid or contract and pending the ascertainment of the amount of such additional expenditure to retain such moneys, guarantee or deposit as security for any loss MUT may sustain by reason of my/our default;
- 2.3 if my/our Bid is accepted the acceptance may be communicated to me/us by electronic mail.

2.4	the law of the Republic of South Africa shall govern the contract created by the acceptance of my/our
	Bid and that I/we choose domicilium citandi et executandi in the Republic as detailed below.



- 3. I/We furthermore confirm that I/we have satisfied myself/ourselves as to the correctness and validity of my/our Bid, that the price(s) and rate(s) quoted cover all the work/items(s) in these documents; and that the price(s) and rate(s) cover all my/our obligations under a resulting contract. I/we accept that any mistakes regarding price(s) and calculations will be at my/our risk.
- 4. I/we hereby accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me/us under this agreement as the Principal(s) liable for the due fulfilment of this contract.
- 5. I/We agree that any action from this contract in all respects be instituted against me/us and I/we hereby undertake to satisfy fully any sentence or judgment which may be pronounced against me/us as a result of such action.
- 6. I/We declare that I/we have participation I/no participation in the submission of any other offer for the supplies/service described in the attached documents. If in the affirmative, state name(s) or bid(s) involved.
- 7. Are you duly authorized to sign for this Bid?

*YES / NO

Has the Declaration of Interest been duly completed and included with the other Bid forms?

*YES / NO

*Delete whichever is not applicable.

	OR ASSIGNEE(S).		
Please complete the following in block letters			
	authority under which this Bid is signed.		
Name of Bidder			
Postal Address			
Telephone number(s) (Toll free if applicable)			
Facsimile number(s)			
Email Address(s)			
Bid Number			
Name of contact person			



TRS 7 DECLARATION OF INTEREST



TRS: 7 DECLARATION OF INTEREST

1.	If Bidder is a Sole Proprietor: Are you (or your spouse, child,	Yes	No
	or parent) currently employed by MUT?		
1.1	If yes, provide particulars:	<u> </u>	
2.	If Bidder is a Sole Proprietor: Have you (or your spouse, child	Yes	No
- 1	or parent) been employed by MUT in the past 12 months?		
2.1	If yes, provide particulars:		
			II 🔪
3.	If Bidder is a Sole Proprietor: Do you (or your spouse, child	Yes	No
	or parent) have any relationship (family, friend or other) with		
	any person who may be involved with the evaluation or		
	adjudication of this Bid?		
3.1	If yes, provide particulars:	L	
			7
			u <i>2</i>)
4	If Bidder is a company, close corporation, partnership, trust	Yes	No
	or association: Are any of the Bidder's employees,		
	shareholders, directors, members, partners, beneficiaries or		
	trustees (or any of their spouses, children or parents)		
	currently employed by MUT?		
4.1	If yes, provide particulars:		
	K Dill i		
5.	If Bidder is a company, close corporation, partnership, trust	Yes	No
	or association: Have any of the Bidder's employees,		
	shareholders, directors, members, partners, beneficiaries or		
	trustees (or any of their spouses, children or parents) been		
	employed by MUT in the past 12 months?		
5.1	If yes, provide particulars:	<u>.</u>	
6.	If Bidder is a company, close corporation, partnership, trust	Yes	No
	or association: Do any of the Bidder's employees,		
	shareholders, directors, members, partners, beneficiaries or		
	trustees (or any of their spouses, children or parents) have		
	any relationship (family, friend or other) with any person who		

	* * *
	may be involved with the evaluation or adjudication of this Bid?
6.1	If yes, provide particulars:
I, declar	(full names), certify that the information furnished in this ation of interest is true and correct.
SIGN	ED aton this day of20
Signe	d by or on behalf of the Bidder.
_	ed on behalf of the Bidder, the signatory hereby warrants that (she/he) is duly authorised to sign this ation on its behalf.

Signature:

Designation:

Full details of directors/Trustees/ Members and Shareholders

Full Name	Identity Number

TRS 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

TRS: 8 DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1. This Section must form part of all Bidders invited.
- 2. It serves as a declaration to be used by MUT in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3. The Bid of any Bidder may be disregarded if that Bidder, or any of its directors have:
 - a. abused MUT's supply chain management system.
 - b. committed fraud or any other improper conduct in relation to such system; or
 - c. failed to perform on any previous contract.

4. <u>In order to give effect to the above, the following questionnaire must be completed and submitted with the Bid.</u>

Item	Question	Yes	No
4.1	Is the Bidder or any of its directors listed on the National Treasury/MUT's database as companies or persons prohibited from doing business with the public sector?	Yes	No
4.1.1	If so, furnish particulars.		
4.2	Is the Bidder or any of its directors listed on the Register for Bid Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?	≻e □	No
4.2.1	If so, furnish particulars.		
4.3	Was the Bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes	No
4.3.1	If so, furnish particulars.		
4.4	Was any contract between the Bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes	No 🗌
4.4.1	If so, furnish particulars.		

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

I, the undersigned		
(full name)		
Certify that the information furnished on t to cancellation of a contract, action may be		
Signature	 Date	
Designation		>>
Name of Bidding Entity		

TRS 9 TAX PIN CERTIFICATE REQUIREMENTS

TRS: 9 TAX PIN CERTIFICATE REQUIREMENTS

It is a condition of a Bidder that the taxes of the successful Bidder <u>must</u> be in order, or that satisfactory arrangements have been made with the South African Revenue Service (SARS) to meet the Bidder's tax obligations.

- 1. An original valid Tax Pin Certificate must be submitted together with the Bid. Failure to submit an original and valid Tax Pin Certificate will result in the invalidation of the Bid.
- **2.** Certified copies of the Tax Pin Certificate will not be acceptable.
- 3. Bidders to complete **Letter of Authorisation Form** below, granting MUT authority to verify/validate the Bidders Tax Compliance Status from SARS. The Bidder is also required to attach a copy of their Tax Pin Status printed from the online portal.

Upon evaluation of the bid, should the Bidder's Tax Pin Status printed from the online portal, not be in order, Bidder will be afforded an opportunity to rectify their status within five (5) working days failing which will lead to disqualification.

- 4. In Bids where Consortia/Joint Ventures/Sub-Bidders are involved; each party must submit a separate valid Tax Pin for their organization.
- **5.** Applications for the Tax Pin may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website *www.sars.gov.za*.
- **6.** Copies of the TCC 001 "Application for a Tax Pin" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

TAX PIN LETTER OF AUTHORISATION

I, the undersigned				
(full names)				
Hereby grant authorisation to the Mangosuthu Companies current tax status.	University of	Technology to	validate my	Organisation/
Tax No				
Tax Pin No. issued by SARS.		-		
Signature of authorized person	Date	<u> </u>		

Name of Bidding Entity

Bidders are to ensure that the information supplied in the above form is completed in whole and that the information is true and correct, failing which, this will lead to the Employer not being able to validate the bidders tax status online, which shall lead to the disqualification of the bidders bid.



TRS 10

ACKNOWLEDGEMENT OF BID DOCUMENT

TRS: 10 ACKNOWLEDGEMENT OF BID DOCUMENT

I/We and all other information available the whole of the said works ar documents.	are having examined the e prior to the closing date, hereby offer to exected to supply all the requisite services in con	Request for Bid Document ute, complete, and maintain nformity with the aforesaid
Name of Bidder:		
Address:		
Telephone Number:		S
Email Address:		
		\ *
Company Stamp:		

TRS 11 CERTIFICATE OF INDEPENDENT BID DETERMINATION

TRS: 11 CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Standard Bidding Document (SBD) must form part of all bids¹ invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging). ² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
 - a. disregards the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
 - b. cancels a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.
- This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) must be completed and submitted with the bid:

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:	
(Bid Number and Description)	
in response to the invitation for the bid made by:	
(Name of Institution)	
do hereby make the following statements that I certify to be true and complete	e in every respect:
I certify, on behalf of:	that:

1. I have read and I understand the contents of this Certificate.

(Name of Bidder)

- 2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect.
- 3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder.
- 4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder.
- 5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether affiliated with the bidder, who:

¹ Includes price quotations, advertised competitive bids, limited bids and proposals.

² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

- (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities, or experience; and
- (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
- 6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement, or arrangement with any competitor. However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
- 7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement, or arrangement with any competitor regarding:
 - (a) prices.
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors, or formulas used to calculate prices.
 - (d) the intention or decision to submit or not to submit, a bid.
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
- 8. In addition, there have been no consultations, communications, agreements, or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- ³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill, and knowledge in an activity for the execution of a contract.
 - 10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signature	Date
Position	 Name of Bidder



TRS 12
CODE OF CONDUCT FOR BIDDERS

TRS: 12 CODE OF CONDUCT FOR BIDDERS

- 1. By submitting this bid, the Bidder hereby acknowledges and confirms adherence to the following:
- **1.1.** the founding provisions of the Constitution of South Africa, that describe the Republic as a state founded, inter alia, on human dignity, the achievement of equality and the advancement of human rights and freedoms.
- **1.2.** the provisions in the Bill of Rights that address labour relations, including the right to fair labour practices, to join trade unions and to bargain collectively.
- **1.3.** legislation such as the Labour Relations Act, Basic Conditions of Employment Act and Employment Equity Act, which set out the legal framework for industrial relations.
- **1.4.** the University's Mission Statement, including its commitment to promote equal opportunity and the full development of human potential, to transcend the legacy of apartheid and to overcome all forms of gender and other oppressive discrimination.
- **1.5.** decent standards of work and full adherence to the laws of the Republic of South Africa, including legislation that protects the rights of workers.
- **1.6.** Freedom of association and collective bargaining
- 2. By submitting this bid, the Bidder hereby acknowledges and confirms adherence to the following:
- **2.1** The right of workers to join or form trade unions and to bargain collectively.
- 2.2 A constructive and open attitude towards the activities of trade unions and their organisational activities.
- **2.3** Worker representatives are not discriminated against and are provided with access to the workplace to carry out their representative functions.
- **2.4** Regular monitoring takes place, culminating in an annual report prepared by the Bidder on adherence to the code of conduct.
- **2.5** Permit workers to comment on adherence to the code of conduct and on the employer's report.
- 2.6 Permit MUT to conduct random inspections as deemed appropriate to ensure compliance to code of conduct.

3. Working conditions- The Bidder pledges to:

- **3.1** Ensure a safe and hygienic working environment is provided, bearing in mind prevailing knowledge of the industry and of any specific hazards.
- 3.2 Ensure that adequate steps are taken to prevent accidents and injury to health arising out of, associated with, or occurring in the course of work by eliminating, as far as is reasonably practicable, the causes of hazards inherent in the working environment. Occupational health and safety practices are conducted in accordance with a best practice checklist provided by
- **3.3** Ensure that regular and recorded health and safety training is provided, and such training is repeated for new or re-assigned workers.
- **3.4** Ensure that all its staff members are always provided with PPE as per requirement.
- **3.5** Ensure that all chemicals are handled in the prescribed format.
- **3.6** Ensure that access to clean ablution and changing facilities and to potable water and, if required, sanitary facilities for food storage are provided.
- **3.7** Ensure that responsibility for health and safety is allocated to a senior management representative nominated by the specific Bidder.
- **3.8** Ensure compliance at all times with all laws, rules and regulations to ensure COVID safety.

TRS 13
PREFERENCE POINTS CLAIM FORM IN
TERMS OF THE PREFERENTIAL
PROCUREMENT

TRS: 13 PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE

1. BID DECLARATION

Bidders who claim	points in respe	ect of B-BBEE Status	Level of Contribution must	complete the following:
	P 0			

2.	B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED		
must by a V	EE Status Level of Contribution: = (maximum of 10 or 20 points) be in accordance with the table below and must be supported by means of a B-BBEE certificate issued erification Agency accredited by SANAS or a Registered Auditor approved by IRBA or an Accounting or as contemplated in the CCA).		
3.	DECLARATION WITH REGARD TO COMPANY/FIRM		
3.1	Name of company/firm		
3.2	VAT registration number		
3.3	Company registration number		
3.4	TYPE OF COMPANY/ FIRM ☐ Partnership/Joint Venture / Consortium ☐ Close corporation ☐ Company ☐ (Pty) Limited [TICK APPLICABLE BOX]		
3.5	DESCRIBE PRINCIPAL BUSINESS ACTIVITIES		
	COMPANY CLASSIFICATION [TICK APPLICABLE BOX] nufacturer		
3.7	Total number of years the company/firm has been in business?		
PRO	ERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL CUREMENT SUBSTANTIATED BY B-BBEE VERIFICATION CERTIFICATE TINUED)		

- 3.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in
 - (i) The information furnished is true and correct.

shown and I / we acknowledge that:



paragraph 2 of the foregoing certificate, qualifies the company/ firm for the preference(s)

- (ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 2 of this form.
- (iii) In the event of a contract being awarded because of points claimed as shown in paragraph 2, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct; and
- (iv) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
 - (a) disqualify the person from the bidding process.
 - (b) recover costs, losses or damages it has incurred or suffered because of that person's conduct.
 - (c) cancel the contract and claim any damages which it has suffered because of having to make less favorable arrangements due to such cancellation.
 - restrict the Bidder or contractor, its shareholders, and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state / tertiary institution for a period not exceeding 10 years, after the audit alteram partem (hear the other side) rule has been applied; and forward the matter for criminal prosecution.

SIGNATURE(S) OF BIDDER:	DATE:	
WITNESSES:		
1	2	



TRS 14 AUTHORITY TO SIGN A BID



TRS: 14 AUTHORITY TO SIGN A BID

A. COMPANIES

If a Bidder is a company, a certified copy of the resolution by the board of directors, personally signed by the chairperson of the board, authorizing the person who signs this bid to do so, as well as to sign any contract resulting from this bid and any other documents and correspondence in connection with this bid and/or contract on behalf of the company must be submitted with this bid, that is before the closing time and date of the bid.

AUTHORITY BY BOARD OF DIRECTORS

By resolution passed by the B	Soard of Directors on20	
	ign all documents in connection with this b	
(Name	of	Company)
SIGNED ON BEHALF OF CO (PRINT NAME)	DMPANY:	
SIGNATURE OF SIGNATOR	Y: DATE:	«
WITNESSES: 1		\ «
2		
B. CLOSE CORPORATI	ION	
such corporation shall be in-	ation submitting a bid, a certified copy of the cluded with the bid, together with the real rofficial of the corporation to sign the docu	esolution by its members
By resolution of members at a	a meeting on20	at
signature appears below, has	Mrs/Missbeen authorized to sign all documents in opporation)	connection with this bid on
SIGNED ON BEHALF OF (CLOSE CORPORATION:	
IN HIS/HER CAPACITY AS	DA1	ΓE:
SIGNATURE OF SIGNATOR	Y:	



2



TRS 15
PRICING SCHEDULE – FIRM PRICES (PURCHASES)

TRS 15 PRICING SCHEDULE - FIRM PRICES (PURCHASES)

NOTE:

ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED.

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of bidder......RFB number: RFB MUT 09/2025

Closing Time: 11AM Closing date: 16 September 2025

OFFER TO BE VALID FOR 180 DAYS FROM THE CLOSING DATE OF BID.

BID PRICE MUST BE IN RSA CURRENCY (ALL APPLICABLE TAXES INCLUDED)

	No	Description	Amount
	10	TEST BEANCH FOR ELECTRICAL MACHINES	
	5	SLIP RING THREE PHASE ASYNCHRONOUS MOTOR	S .
	5	STARTING AND SYNCHRONIZATION UNIT FOR SLIP RING	(
	5	ROTOR STARTER	
	1	OPENLAB – SEMI AUTOMATIC CONFIG	
٧	VAT @ 15%		
TOTAL AMOUNT			

-	Required by:	Electrical Engineering

- At: Mangosuthu University of Technology

.....



-	Brand and model		
-	Country of origin		
-	Does the offer comply with the specification	n(s)?	*YES/NO
-	If not to specification, indicate deviation(s)		
-	Period required for delivery	*Delivery: Firr	
-	Delivery basis		

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

^{** &}quot;all applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

^{*}Delete if not applicable

TRS 16 DETAILED SPECIFICATIONS



TRS 16: DETAILED SPECIFICATION

AUTOMATIC TEST BENCH FOR ELECTRICAL MACHINES – DIDACTIC EQUIPMENT

The system must be a multipurpose bench for the study and characterization of the 0.3 kW and 1.1 kW electric machines using an automated test approach.

The system must be composed of the following main sections:

- *Prime mover:* A squirrel cage three-phase asynchronous machine controlled by an inverter in four-quadrant operation providing the mechanical power and torque necessary for the characterization of the machine under study.
- Data acquisition software for electric machines: performing the test automation and providing a user interface to execute the tests. The SW should be developed in LabVIEW for the communication with the acquisition devices via serial port using the Modbus protocol and reading electrical and mechanical data from instruments.
- *Instruments:* collect mechanical (speed, torque, and temperature) as well as electrical data (AC and DC, Voltage, current and Power). Data acquisition system:

The didactic acquisition and automation software must guide the student through the different experiments available for the study of various types of single and three-phase AC machines, DC and brushless machines, motors, and generators, through an intuitive user interface. The automated test approach must enable the student to monitor and control several variables of the electric machine under test in real-time, to easily observe their behavior and interaction under several operating conditions such as load, no load, variable speed and torque, or different excitation values. The characteristic curves that must be obtained with the system provide accurate information to create a model of the machine, tune its controller and study the machine applications.

According to the machine under test, the following curves and experiment analysis that can be performed include:

- Motor and generator operation.
- Torque vs. speed characteristic.
- Torque vs. current characteristic.
- Voltage vs. speed characteristic.
- Efficiency.
- Generator synchronization with network.
- Power factor.

The automatic test bench must be composed by the following modules:

PRIME MOVER

This system, composed by an inverter and a squirrel cage motor, must be used for the electrical machines drive.

SQUIRREL CAGE THREE-PHASE ASYNCHRONOUS MOTOR - Didactic equipment

Induction motor with three-phase stator winding and squirrel cage buried in the rotor.

Technical features: Power: 1.1 kW - Voltage: 220/380 V Δ/Y - Current: 4.3 / 2.5 A Δ/Y - Speed: 2870 rpm, 50 Hz.

It must be possible to couple the electrical machine with other electrical machines through the torque system device.

It must be supplied with a hooked module in aluminium with PVC label and safety terminals for the electrical connection.

A schematic diagram must be shown on the hooked module.

Each machine must be mounted on a base and must be provided with:

- Plate that brings its axis height to the standard measure (112 mm).
- Plates for fixing to the base of the machine.
- Four screws for fixing of the machine.
- InterRail Distance of the plates: 160mm.

INVERTER FOR THREE-PHASE INDUCTION MOTORS - Didactic equipment

Three-phase inverter for asynchronous motor drive and speed control. The speed set point and the sense of rotation must be defined directly on the inverter or manually adjusted using the speed set point potentiometer and direction selection switch on the front panel and can be adjusted in open or closed loop using the actual speed reading from the optical encoder. The front panel must also include a digital instrument that displays the speed and estimated torque and generated mechanical power. The acceleration and deceleration ramps must be separately set from 0.0 to 3200 seconds. The inverter settings must be programmable locally from the keyboard and remotely via RS485.

Technical features:

- Rated power: 1.5 kW.
- Output for the connection with the brake resistance is located on the back panel.
- Maximum output voltage: 3x240V.
- Output frequency: 0.1 to 500 Hz.
- Control interface: two Programmable relay outputs, 4 digital inputs, one analog input for speed feedback.
- Control Method: Sinusoidal Pulse Width Modulation (PWM); Flux-Field Current Vector Control; Set Point Control (PID).
- VF control: V/f Constant, Variable Torque, Automatic Torque Boost, Vector Control, PM Motor Control, 5-point V/F Custom Setting, & Auto-Tuning.
- RS485 Port (MODBUS RTU Protocol).
- Direct current braking.
- Monitoring: Output Frequency, Forward/Reverse Run, Output Current, Input Voltage (DC Detection), Output Voltage, Torque, Inverter Load Factor, Motor Load Factor, Braking Resistor Load Factor, Input Power, Output Power, Input Terminal Status, Output Terminal Status, Overload/Regional Setting, PID Feedback Value.
- Protections against minimum/maximum supply voltage, thermal protection, and limitation of the output current.
- Power supply: 1 x 230 V + PE, 50/60 Hz

It must include:

- 1 display for measuring speed, estimated torque and mechanical power, with "FUNCTION" pushbutton for parameter's selection.
- 1 24Vdc output.
- 4 switches for LOOP function (OPEN/CLOSE), SPEED SENS (EXT through K2 connector/INT through Inverter), SPEED REF (EXT/POT), and DIRection function (CW/CCW).

This didactic panel must be installed on a vertical frame.

It must be supplied with manual in English language.

BRAKE RESISTANCE - Didactic equipment

Brake resistance with cooling fan used for servo motor driver.

Technical features:

- Internal resistor = 68Ω/300W.
- Thermal protection.
- Power supply: 230Vac 50/60Hz.

It must be supplied with manual in English language.

ELECTRIC POWER DIGITAL MEASURING UNIT - Didactic equipment

It must be suitable for the measurement in direct current of voltage, current, power and energy, and measurement in alternate current of voltage, current, power, active energy, reactive energy, apparent energy, cos and frequency.

Main technical features:

• DC voltage: 300 Vdc.

• DC current: 20 Adc.

AC voltage: 690 Vac.

• AC current: 20 Aac.

• Power: 9000 W

Power supply: single-phase, 90-260 V,50/60 Hz. Communication: RS485 with MODBUS RTU protocol. It must have insulated front panel, 4 mm safety terminals. This didactic panel must be installed on a vertical frame.

The unit must be supplied with a manual in English language.

DIGITAL TORQUE, SPEED AND SHAFT POWER METER - Didactic equipment

This module must allow measuring the external and the internal temperature by using a dedicated external probe. Furthermore, the module must allow measuring both the speed of rotation and the torque of an electric machine through a torque system device and calculating the mechanical power.

Through the RS485 port Modbus, it must be possible to acquire the measured data by means of a software and to plot the curves of the acquired parameters.

Technical features:

- External Temperature Sensor (T): 2 to 90 degrees.
- Internal Temperature Sensor (T): 2 to 90 degrees.
- Optical Encoder (K2): 5 pulse/gear.
- Torque Meter Sensor range (K): 0 25 Nm.
- Torque Zero Adjust Button.
- Communication: Modbus (RS485).
- Power supply: 90 240 Vac, 50/60Hz.
- Possibility to read the values with the International System of units (SI) or imperial units (UK).

This didactic panel must be installed on a vertical frame.

It must be supplied with manual in English language.

TORQUE SYSTEM DEVICE AND SPEED ENCODER - Didactic equipment

This device must be placed between two machines to measure the mechanical torque and speed on the motor shaft.

The flexible coupling must ensure a better alignment between the two machines and a more accurate torque measurement.

The speed must be measured with an optical sensor delivering 1 pulse per rotation with a maximum speed of 4000 rpm.

This transducer connected to the test bench must allow the student to acquire the mechanical information needed to determine torque vs.

speed, speed vs. voltage, and torque vs. current and other characteristic curves of the machine under study.

This sensor must be used with the above Digital torque, speed, and shaft power meter.

Technical features:

- Torque measurement range: ± 25 Nm.
- Voltage output signal (torque): ±10 V.
- Speed measurement range: 0÷4000 rpm.

DIGITAL TRUE RMS METER - Didactic equipment

Instrument used to measure the voltage, current and true RMS value. The user can communicate with the device through the RS485 serial port using Modbus protocol.

Technical features:

- Automatic scaling
- Voltage:
 - o 0 ... 1000V DC.
 - o 0 ... 1000VACpp.
 - o 0 ... 750VACrms.
- Current:
 - o 0 ... 20 A DC.
 - o 0 ... 28 A ACpp.
 - o 0 ... 20 A ACrms.
- Accuracy: +/- 0.5%.
- Resolution: 16bits.
- Refresh rate: 0.5s.
- Power supply: 90-260 Vac 50/60Hz.
- Power consumption: 3 VA.
- Communication: Modbus (RS485).

This didactic panel must be installed on a vertical frame.

This module must have insulated front panel, 4 mm. safety terminals.

It must be supplied with manual in English language.

MODBUS COMMUNICATION HUB AND LOAD CONTROLLER - Didactic equipment

Module with insulated front panel including:

• One RS485 input and four RS485 outputs on Channel 1 (4 Wire) on the rear.

- One RS485 input and four RS485 outputs on Channel 2 (2 Wire) on the rear.
- Analog output 1: 0 ÷ 10V.
- Analog output 2: 0 ÷ 10V.
- Twelve relay outputs: 1NO/1NC each with 2 mm terminals.
- One switch for power on/off and a socket for power supply connector.

This didactic panel must be installed on a vertical frame.

It must be supplied with manual in English language.

PERSONAL COMPUTER SUPPLIED WITH THE SYSTEM

SOFTWARE FOR THE ELECTRICAL MACHINES LABORATORY - Didactic equipment

This software shall permit to execute, in an automatic or semi-automatic mode, under the control of the computer, all the tests that must be normally executed inside the Electrical Machines Laboratory.

It shall be designed to measure electrical machines parameter in many working conditions, through dedicated instruments; it must allow the data export, graphs tracing and the computation of main parameters not directly acquirable.

It must be possible to perform the following experiments for asynchronous machines:

- No load test of the Three-phase Asynchronous Motor.
- Short circuit test of the Three-phase Asynchronous Motor.
- Measurement of the internal resistance of a Three-phase Asynchronous Motor.
- Measurement of the transformation ratio of the Three-phase Asynchronous Motor.
- Direct test of the Three-phase Asynchronous Motor.

It must be possible to perform the following experiments for synchronous machines:

- Magnetization Characteristic of a Synchronous Machine.
- Short-circuit Characteristic of a Synchronous Machine.
- Measurement of the Winding Resistance of a Synchronous Machine.
- External Characteristics of the Synchronous Machine.
- Regulation Characteristic of a Synchronous Machine.
- No load Test of a Synchronous Machine as a Motor.
- "V" curve plot of a Synchronous Machine.

It must be possible to perform the following experiments for direct current machines:

- Measurement of the internal resistance of a Direct Current Machine.
- Computation of the conventional efficiency of a DC Generator.
- Magnetization characteristic of a DC Generator.
- External characteristics of the DC Generator.
- Regulation characteristic of the DC Generator.
- No load test of the Direct Current Motor.
- Direct test of the Direct Current Motor.

This software Package must cover all the study subjects and the experiment activities to be performed in a computer controlled electrical machines laboratory. It must work with the following types of machines:

- Single-phase and three-phase transformers
- Direct current machines.
- Synchronous machines.
- Asynchronous machines.

THREE-LEVELS FRAME

Metal frame with three levels for fitting the modules of the laboratory with a led strip on the top and a PC holder. It must be mounted on the workbench.

MOTORIZED DC AND AC POWER SUPPLY MODULE - Didactic equipment

This power supply must provide separate fixed and variable three-phase AC voltages and rectified DC voltages to conveniently carry out all the tests for Electric Machines and Electrical Installations laboratories.

It must be intuitive and safe to operate with start and stop pushbuttons to enable the voltage outputs, emergency mushroom push-button, key-unlocked general switch, and magneto-thermal switch.

It must be operated manually or remotely through dedicated 0 ÷ 10 voltage and relay signal inputs.

A dedicated over-speed connector can be used to protect the electric machines under test.

The front panel must include the safety terminals for the voltage outputs, sockets for powering additional modules and control terminals according to the IEC standards.

It must have the following output voltages:

- Selectable variable three-phase AC voltage (voltage or relay controlled): 3x0 ÷ 480V, 5A or 3x0 ÷ 240V, 10A.
- Variable rectified DC (voltage or relay controlled): 0 ÷ 290V, 12A.
- Fixed three-phase AC from the mains.
- Fixed DC: 220 V, 1 A.
- Variable rectified DC: 0 ÷ 225 V, 1 A.

Power supply: three-phase from the mains.

120X90 WORKBENCH

Workbench with melamine flatbed. Two holes must be present on the flatbed to allow the assembly of a three-level frame.

Technical features:

- Dimensions: 80x120x90 cm (HxWxL).
- Complete with locking wheels.
- Supplied with 15 sockets protected by a thermal magnetic circuit breaker.

60X90 WORKBENCH – (2 units)

The multifunctional bench must be used in electrical engineering laboratories as support for electrical machines.

Technical features:

- Dimensions:80x60x90 cm (HxWxL).
- Complete with locking wheels.

UNIVERSAL BASE FOR ELECTRICAL MACHINES

This item must consist of an anodized aluminium structure mounted on anti-vibration rubber feet, provided with slide guides for the fixing of one or two machines and with a coupling guard. Complete with a device for the locking of the rotor of the slip ring asynchronous machines in the short circuit test.

TEST LEADS

Cables kit for the automatic test bench.

SLIP RING THREE-PHASE ASYNCHRONOUS MOTOR - Didactic equipment

Induction motor with both stator and rotor three-phase windings.

It must have the following technical features:

Voltage: 230/400 V Δ/Y,
 Current: 4,3/2,5 A Δ/Y,

Power: 1,1 kW,Cosφ: 0,83,

Speed: 2870 min⁻¹, 50 Hz.

It must be possible to couple the electrical machine with other electrical machines through a hub and spider elastic gear ring in polyurethane.

It must be supplied with a hooked module in aluminum with PVC label and 4 mm safety terminals for the electrical connection with ground.

A schematic diagram must be shown on the hooked module.

Each machine must be mounted on a base and must be provided with:

- Plate that brings its axis height to the standard measure (112 mm),
- Plates for fixing to the base of the machine,
- · Four screws for fixing of the machine,
- · InterRail Distance of the plates: 160mm,
- Coupling Joint: Diameter: 40mm, length 40mm.

The motor must be supplied with manual in English language

STARTING AND SYNCHRONIZATION UNIT – didactic equipment

Starting rheostat for the three phase slip ring induction motors and excitation device for the synchronization of the motor with the mains.

Housed in a metal box with PVC label. On the front side, the different control and connection devices must be arranged.

On the rear side, the connector must be available for the connection to the mains.

A schematic diagram must allow an easy operation of the unit.

It must include the following controls:

- Main switch with pilot lamp.
- Starting and synchronization switch.
- Voltage variator for DC output.
- Motor connection terminals.
- DC Output terminals.
- Protection for DC output.

The panel must have 5 bushes + 1 PE.
The unit must be supplied with a manual in English language.







LOCATION OF SITE

The site is located within Mangosuthu University of Technology, at 511 Griffiths Mxenge Highway, Umlazi Township- Electrical Engineering (New Building).

SERVICE LEVELS

Service Level Targets: Definitions and Principles

Service levels are measured using Key Performance Indicators ("KPIs").

Availability KPIs measure the uptime of services.

Incident response time KPIs measure how long it takes the service provider to take action towards resolving a reported incident or service request.

- Training of 5 personnel within MUT for 3 days
- Incident response and resolution time (telephonically-immediately, major enquiries 24 hours)
- Work in the entire premises of the MUT is stopped or interrupted. (the tenderer must indicate if he anticipates any work to be interrupted during the installation of the equipment)
- Reporting and Review Schedule- reporting on the maintenance conducted in the prescribed intervals

VALUE ADD OFFERING

Please Include other value add offering you have that may be beneficial to MUT as part of this Bid document.

TRS 17 GENERAL CONDITIONS OF CONTRACT



TRS 17 GENERAL CONDITIONS OF CONTRACT

1. OBLIGATIONS OF THE SERVICE PROVIDER

The Service Provider undertakes, but not limited to:

- a) Render a service of the highest possible standard and quality whilst striving to improve efficiency, reduce costs and meet the standards, service levels and criteria as required by the MUT and as specified in this Agreement. The Service Provider shall to this end allow the MUT to undertake inspections where necessary and or performance appraisal and to submit the services rendered to an independent audit if requested to do so by the MUT.
- b) Make available its time and service to MUT to ensure the highest degree of skill, expertise, care, and diligence is exercised in the performance of the service, and to provide competent, sufficient, and suitable personnel in terms of this Agreement.
- c) The onus probandi shall vest with the Service Provider in order to prove that services were rendered according to required standards.
- d) Not to disclose any information concerning the business of the MUT to any person or MUT.
- e) Not to violate the copyright on any of the material, information, or programs of the MUT concerned if applicable.
- f) The Service Provider shall perform the service without causing any interruption or disturbance to everyday personnel or student activities, including but not limited to the academic processes such as lectures, study, research, conducting practical classes or writing examinations.
- g) The Service Provider shall inform the MUT in writing of every failure or foreseeable failure by the MUT, which could result in a position where the Service Provider is unable to fulfil its obligations in terms of this Agreement.
- h) The Service Provider acts as independent Service Provider and not as an agent or employee of the MUT and shall not incur any liability on behalf of the MUT or in any way pledge or purport the MUT's credit. The Service Provider also has no authority to bind the MUT contractually and hereby indemnifies the MUT against any losses and/or damages resulting from such actions or applications.
- i) The Service Provider shall not sub-contract the Service or any part thereof to any third party without obtaining the written consent of the MUT, who in the exercise of its discretion, shall have regard to the extent to which such consent shall adversely affect the standard of the Service.
- j) Designate in writing, a manager in its employ who will liaise with the MUT's Liaison Manager, or his nominee, in respect of the service to be rendered by the Service Provider.

(The Manager so designated, shall, when acting within the scope and ambit of this agreement, have complete authority to represent the Service Provider on all issues pertaining to this Agreement).

k) Ensure that all its personnel employed in the rendering of the Service are at all times whilst on duty neatly dressed, presentable and hygienic.

2. OBLIGATIONS OF MUT

MUT undertakes to:

- a) Make available to the Service Provider such information as may reasonably be required by the Service Provider for the rendering of the specified service.
- b) Pay the Service Provider in full as per the agreement.
- c) Act in good faith.

3. CONDUCT OF THE SERVICE PROVIDER

If, at any time during the Term, MUT, in its reasonable discretion determines that the Service Provider has, in respect of this Agreement:

- a) acted dishonestly and/or in bad faith; and/or
- b) has made any intentional or negligent misrepresentation to MUT, whether in any negotiations preceding the conclusion of or in the execution of the Agreement between the Parties.
- c) Then MUT shall be entitled, by written notice to the and notwithstanding clause 10 (Termination), to forthwith terminate this Agreement and/or any Service Request, either in whole or part.
- d) Upon such termination MUT shall be entitled, in addition to all other remedies available to it, to recover from the Service Provider all damages it has suffered by virtue of such conduct by the Service Provider.
- e) If, at the time of such termination, MUT is indebted to the Service Provider for any amounts whatsoever, MUT shall be entitled to withhold payment in respect thereof for a period of 90 (ninety) days from the date of termination in order to investigate the 's conduct and if any damages are suffered by MUT due to such conduct.

4. INTELLECTUAL PROPERTY

For the purposes of this Agreement, all right, title and interest in and to the intellectual property, as per scope of work, will be deemed to vest in the MUT.

- a) The Service Provider hereby irrevocably cedes, assigns, and transfers to the MUT all right, title and interest in and to any intellectual property created by the Service Provider from the first date when the MUT appointed the Service Provider, even where such date may predate the effective date, which will then be deemed to form part of the intellectual property as defined.
- b) The Service Provider shall at no time challenge, question or dispute the intellectual property, nor the ownership thereof and undertakes not to assist any other person in doing so, and further undertakes not to infringe or prejudice any rights of the MUT in and to the intellectual property.

5. INDEMNITY

Both parties indemnify each other against any direct or indirect loss or damage (including consequential loss and loss of profits) which they and/or any third party may suffer due to a breach by both parties of this Agreement unless the breach has been proven that it is due to one party's negligence or misconduct.

6. CONFIDENTIALITY

The Service Provider shall keep and maintain all MUT's materials received, matters discussed or otherwise transmitted to the Service Provider in whatever form or media as part of this Agreement as strictly confidential and shall not disclose such information to any third-party without the MUT's prior written consent.

7. CONFLICT OF INTEREST

- a) The Service Provider shall provide services to the MUT free of any conflict of interest.
- b) By signing this agreement, the Service Provider attests that there is no conflict of interest and no employee of MUT or relative of any employee of MUT holds any interest in the business of the Service Provider either as a director, shareholder or employee of the Service Provider.

8. DISPUTE RESOLUTION

- a) If a dispute of any nature arises between the Parties, including regarding the interpretation of, the effect of, the Parties' respective rights or obligations hereunder, a breach of or the termination of this Agreement, then, upon written request of either Party, each Party may appoint a senior representative from their organization whose task it will be to meet for the purposes of resolving such dispute. If appointed, such representatives will discuss the matter in dispute and negotiate in good faith in an effort to resolve the dispute on amicable terms within thirty (30).) days. No formal proceedings may be commenced until the designated representatives conclude in good faith that an amicable resolution of the matter is not likely to occur.
- b) Should the representatives of the Parties be unable to resolve a dispute in accordance with the foregoing, such dispute may be resolved by mediation.
- c) Should mediation fail to resolve the dispute within thirty 30 days, the matter may be referred to arbitration.
- d) The arbitrator(s) shall be appointed by the Parties within fifteen (15) days by agreement. Should the parties fail to agree on an arbitrator within fifteen (15) days, the arbitrator shall be nominated by the Chairperson for the time being of the KwaZulu Natal office of the Legal Practice Council.
- e) The arbitration shall be held at Durban or one of the suburbs of Durban.
- f) The arbitration shall be held in accordance with the Arbitration Act 42 of 1965 of the Republic of South Africa and any statutory modification or re-enactment thereof.
- g) The arbitrator shall be entitled to:
 - (i) determine and settle the formalities and procedures, which shall be in an informal and summary manner, that is, it shall not be necessary to observe or carry out either the usual formalities or procedure or the strict rules of evidence.
 - (ii) investigate or cause to be investigated any matter, fact or thing which he considers necessary or desirable in connection with any matter referred to him for decision.
 - (iii) decide the matters submitted to him according to what he considers just and equitable in all the circumstances, having regard to the purpose of this Agreement; and any other facts and circumstances that may be relevant to the disputes.
 - (iv) make such award, including an award for specific performance, an interdict, damages or a penalty or the costs of arbitration or otherwise as he in his discretion may deem fit and appropriate. The Parties shall comply fully and promptly with any award, within thirty (30) days of the award.

- (v) This clause (Dispute Resolution) shall not preclude any Party from obtaining interim relief on an urgent basis from a court of competent jurisdiction pending the decision of the arbitrator.
- (vi) The Parties hereby consent to the non-exclusive jurisdiction of the High Court of the Republic of South Africa in respect of the proceedings in this clauase (Dispute Resolution), where applicable, and the above Court shall have jurisdiction to enforce any award made by an arbitrator under this clause (Dispute Resolution), where applicable.
- (vii) An award made by an arbitrator pursuant to the provisions of this clause (Dispute Resolution), shall be final and binding on the Parties unless taken on review by the Service Provider or MUT.

9. GENERAL BREACH

- a) Should either party commit a breach of any provision of this Agreement and fail to remedy such breach within 7 (seven) days or such longer period as directed by the other party in writing after receiving written notice from the party requiring the other party to do so, then the requesting party shall be entitled, without prejudice to its other rights in law or in terms of this Agreement, to lawfully cancel and/or terminate this Agreement or to claim specific performance / payment.
- b) In the event that one party instituting legal proceedings against the other party arising from any breach by one party of any of its obligations in terms of this Agreement, the wrong party shall be liable to pay the other party's legal costs of such proceedings on a scale as between attorney and client, as well as any disbursements which the wronged party may have incurred in the procurement of the services.

10. ENTIRE AGREEMENT

This Agreement, its annexures and the ancillary agreements hereto contain all the terms and conditions of the agreement between the Parties and no representations, warranties, undertakings or promises of whatsoever nature which are not reduced to writing and agreed upon by both Parties and which may have been given by one Party to the other, other than herein contained, shall not be binding or enforceable by any Party against the other.

11. NON-VARIATION

No addition to, variation, or agreed cancellation of this Agreement shall be of any force or effect unless same is reduced to writing and agreed to by the Parties.

12. WAIVER

No act of relaxation, indulgence or extension of time which any Party may grant to the other or others shall operate as a waiver of any of the rights of the first mentioned Party in terms of this Agreement.

13. SOCIAL MEDIA

The Service Provider undertakes for the duration of this Agreement and after the termination thereof, not to make any disparaging remarks about the MUT and *vice versa* on any social network, including but not limited to: Facebook; Twitter; My Space and LinkedIn and similar social networks.

14. CORRUPTION

If, at any time during the Term, MUT has a reasonable suspicion that the Service Provider has, in respect of this Agreement (or any other Agreement), directly or indirectly given or agreed to give or offered to give any gratification to any Person including employees of MUT, whether for the benefit of that Person or any other Person or any employee of MUT in order to improperly influence any Person or any employee of MUT to:

- a) award a tender for provision of services to the Service Provider.
- b) in the absence of a tender process, promote the procurement of a contract with MUT.
- c) withdraw a tender awarded to another public or private Person, including MUT.
- d) fix the price, consideration or other monies stipulated or otherwise provided for in any such agreement.
- e) Then, MUT shall be entitled, by written notice to the Service Provider, to forthwith terminate this Agreement.

15. REPUTATION

The Service Provider shall not do anything, or engage in any activity, which is likely to adversely affect, or damage, MUT's good name and/or reputation and shall procure that its directors and employees involved in the implementation of this agreement, do not do any such thing, or engage in any such activities and shall act in good faith.

16. FORCE MAJEURE:

a) Notwithstanding anything to the contrary herein contained, should either of the parties be prevented from fulfilling in whole or in part its obligation in terms of this A, whether

such prevention arises from force majeure, Acts of God, war, civil commotion, protests, curtailment of electricity, strikes, lockouts, revolutions, fires, explosions, floods, political disturbances, act of any Governmental or local authority, pandemics o, or any other cause whatsoever over which that party has no reasonable control, such Party shall be relieved from liability to the extent and for the period it is thereby prevented from fulfilling its obligations.

- b) The University will not make payment when Services are not rendered during Force Majeure incidents.
- c) The abovementioned term is subject to the conditions that the Party so prevented from fulfilling its obligations hereunder shall immediately notify the other party to that effect in writing, giving a full and complete explanation of the circumstances responsible for such failure or occurrence as well the estimated duration thereof. If requested, the party shall furthermore set out in writing the actions such Party is taking or proposes to take to remove the said circumstances with the least possible delay.

17. GOVERNING LAW

The laws of the Republic of South Africa shall govern the validity, interpretation and performance of this Agreement and the courts of the Republic of South Africa shall have sole jurisdiction.

....2024.

SIGNED AT DURBAN ON THE	. DAY OF
Mr/ Ms (Director / Trustee / Shareholders)	

For and on behalf of the Service Provider