



higher education
& training
Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA



Eastcape
Midlands
TVET College

creating new futures

SCM-022

REQUEST FOR APPROVAL – RFQ / RFP / BID

SOURCING OF SERVICE PROVIDER FOR PROGRAMMING AND ROBOTICS

Procurement method: Estimated delivery date: **25 January 2025**

Shorter Bidding

1. BACKGROUND

The ETDP SETA and Eastcape Midlands TVET College (EMC) signed a Memorandum of Understanding (MOU) on March 11, 2024 to establish a 4IR Centre of Excellence. Eastcape Midlands TVET College (EMCOL - COE) to support the institutional strategic goal of teaching unemployed youth, semi-skilled and skilled employees in technologies connected to the Fourth Industrial Revolution

2. PURPOSE

To source a service provider for a Programming and Robotics software, hardware, training, support and curriculum for technologies.

3. SPECIFICATION(S)

Detailed specifications and conditions attached for:

Arduino micro controller starter kits	Buzzer	Infrared sensor
Raspberry PI starter kits	Transistor	LCD Display
ESP development board	Power source	Switch
USB Cable for Arduino	Breadboard	Push buttons



Resistors	Ultrasonic sensor	Capacitors
H – bridge	Servo motor	Diode
Battery holder	TIP Darlington transistor	Robot chasis kit
Batteries	Submersible DC water pump	Temperature and humidity sensor
DC Motor	Stepper motor	Segment display
Mini solar panel	Display Dot matrix	LDR
Potentiometer	PIR Sensor	LED
Relay	A3 cutting mat	

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ACCOUNTING OFFICER or
AUTHORISED DELEGATE

DATE

COMMENTS:

Detail Specifications

COMPONENTS			
Material	Description	Value	Quantity
Arduino Microcontroller Starter kits	 Uno R3		15
Raspberry Pi 4 Starter kits (4/8GB) + SD card			15
ESP Development board	 ESP8266 development board.		30
USB Cable	 Arduino USB Cable type A-B.		15
Resistors	1/2 watt; Fixed 100 Ohm 330 Ohm 470 Ohm 680 Ohm 22 Kilo-Ohm 47 Kilo-Ohm		45 45 45 45 45 30



		1.2 Kilo-Ohm	30
Buzzer	small	1.5 – 15V 10mA	15
Transistor	NPN	BC547	30
		BC107	30
		2N2222	30
Transistor	PNP	BC177	30
		2N2907	30
Power source	Battery/ DC power supply	4.5 – 12V	30
Breadboard		400 400 Point Breadboard	30
Ultrasonic sensor	HC-SR04 Ultrasonic Sensor 	HC-SR04	15
180 Degree servo motor	180 Degree servo motor 	SG90 Micro Servo Motor 180 degrees	30
Infrared Sensor	Infrared Obstacle Avoidance Sensor module IR 	IR Sensor Module	60
16 x 2 LCD Display with I2C interface	IIC/I2C 1602 Serial LCD Display 	Serial LCD Display	15



Switch	On/ Off switch	Contact switch	
Mini pushbutton s (or Tactile Buttons)	Single pole-throw buttons	Mini pushbuttons	15 60
Capacitors	Electrolyte	10 micro-Farad 42 micro-Farad	30 30
Diode		1N4001 or equivalent	60
Robot Chassis + Wheels and DC Motors + Encoder disks	 (or variant)		15
H-Bridge	 or 	L9110S H-bridge Or Dual L298N H-Bridge Stepper Motor Driver 2A	15
Battery holder		AA Type battery	15
Batteries	Batteries	AA – 1,5 V	60
TIP Darlington transistor		TIP122 NPN	30



Submersible DC Water pump		Mini DC 3-6V Water 120L/H Brushless Motor Submersible pump	15
Stepper Motor		5V Stepper Motor with ULN2003 Driver Board Set	30
DC Motor		3V /5V Mini DC Motor	15
Mini Solar Panel 5V		5V/150mA 110*60mm Solar Panel 1W	15
Display Dot Matrix Module 4-in-1		MAX7219 4-in-1 Dot Matrix Display Module	15
Potentiometer		Potentiometer 10k Ohm	30



Temperature and humidity sensor		DHT11 Temperature and Humidity Sensor	15
7 segment Display		7 segment Display	15
LDR		Photoresistor (LDR) 4-7kOhm 5mm Diameter	60
PIR Sensor		PIR Infrared Motion Sensor (HC-SR501)	15
Buzzer 5V		Buzzer pcb 5V	15
LEDs		Mixed LED's Different colours	5 x pkt of 100
5V Relay		5V relay module with Status LED	30
A3 Cutting mat		Mat Length 450 mm Mat Width 300 mm Mat Thickness 3.0 mm Number of Layers 5 layer Colour Dark Green	15



	Printed Grid Side A	YES – Metric cm grid (with mm marks)
	Grid Size Side A	44cm x 29cm
	Printed Grid Side B	YES – Imperial inch grid (with ¼
	Grid Size Side B	17
	Printed Angle Lines	Yes – both sides – 30°, 45° & 60°