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

GOLDFIELDS TVET COLLEGE

PURCHASING CONSORTIUM SOUTHERN AFRICA (PURCO SA) IN COLLABORATION WITH GOLDFIELDS TVET COLLEGE (GTVETC)

REQUEST POTENTIAL BIDDERS FOR PROPOSALS (RFP) FOR SUPPLY, DELIVER, INSTALLATION AND COMMISSIONING – 41IR CYBERSECURITY LAB, CODING AND ROBOTICS

TENDER NO: PU8111/087

Prospective Suppliers who are interested in participating in the aforementioned tender are invited to submit a proposal in full compliance to the requirement of this tender document. Completed documents with all attachments must be signed and submitted on the **PURCO SA Website**.

The closing time and date for receipt for online tender **PU8111/087** is**11h00.**

Tender number	**PU8111/087**
Date issued	**16/11/2026**
Tender closing date	**30/11/2026** **11h00 on Monday** **Tender Submission will be Electronic on www.purcosa.co.za** **Supplier Hub- Online Tender Submission Guide**
Non-compulsory information session	**20/11/2026** **11:00 on Friday** **An online non-compulsory briefing session will be facilitated via MS Teams**

Company name		
Address		
Contact person	Mr/Mrs/Ms/Dr/Prof.	
Contact numbers	(w)	(cell)
Email address		

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1.1.1 PRE-QUALIFICATION/MANDATORY INFORMATION REQUIREMENT

The Pre-qualification/Mandatory Information Requirement phase validates the tenderers' compliance with the legal requirements to conduct business in SA, as well as to specific industry requirements for the supply of services where applicable.

Please see table below for the list of mandatory requirements and tick yes if documentation is submitted and no if not submitted.

Description	Requirement	YES	NO
RFP Document	Each page of the RFP document to be **initialled** by a delegated representative	Yes	No
Completed Technical specifications and pricing	Attach fully signed technical specifications and pricing **(Don't change the pricing schedule and specification)**	Yes	No
Proof of Bank Account	Signed or electronically stamped letter from bank (not be older than 6 months)	Yes	No
Company registration documents	Submit copy of company registration documents	Yes	No
Tax Compliance Certificate	Copy of valid SARS Tax compliance status (must be valid on the tender closing date)	Yes	No
B-BBEE Certification	A valid B-BBEE certificate from a SANAS accredited agency/Affidavit	Yes	No
Board resolution	Submit a copy of signed board resolution. Unless if you are sole proprietor	Yes	No
ID documents	Certified copy(s) of Identity Document(s) (ID) for directors/shareholders (not be older than 6 months)	Yes	No
Declaration of Interest	Please sign point 9 of this tender document	Yes	No
Bank Rating Letter	Letter of Good Standing from the bank (Bank Rating Letter) (not be older than 6 months)	Yes	No
Registration National Treasury (**CSD**)	Provide a copy of the full report of registration on National Treasury Central Supplier Database.	Yes	No
Accreditations (Relevant Bodies)	Submit a relevant copy of Accreditation certificate, e.g. State Information Technology Agency (SITA)	Yes	No
COIDA – (Relevant Industry)	Submit valid letter of good standing from the department of labour	Yes	No
SBD Forms	Copy of completed and signed **SBD 1, SBD 4, SBD 6.1**	Yes	No

Original Equipment Manufacturer (OEM)	Submit proof of OEM certificate / authorised reseller / distributorship agreement	Yes	No

NB: No points will be allocated to this phase; however, tenders that do not meet the pre-qualification requirements may not advance to the next phase of the evaluation process.

1.1.2 STAGE 1: EVALUATION OF FUNCTIONALITY

The below mentioned criteria regarding Functionality is required for responsiveness and therefore eligibility for the next stage of evaluation. This is done to determine the ability of each tenderer to successfully execute the contract according to specifications. Failure to score minimum of 70 out 100 points will lead to non-compliance and non-responsiveness.

These criteria shall only determine whether a tender will further be evaluated and will not influence the points scored on Price. If any criterion is rated zero (0) points, the tenderer will be rejected, even if the required 70 out of 100 points are achieved.

For purposes of comparison and in order to ensure meaningful evaluation, bidders are requested to furnish detailed information in substantiation of compliance to functionality.

FUNCTIONALITY CRITERIA		**POINTS ALLOCATED**
Experience **Proven track record with contactable reference letters for similar projects completed within five (5) years in the cybersecurity and cloud computing provision of cybersecurity and cloud computing. The reference letters must be on legitimate letterhead and clearly indicate the type of service provided, contract duration, contract value, and the relevant contact person's name, surname, position, and contact number(s). Reference letters that are not signed and dated will not be acceptable**. 3 - Reference letters for similar project = 30 points 2 - Reference letters for similar project = 20 points 1 - Reference letter for similar project = 10 points	= 30 points = 20 points = 10 points	**30**
Project Team and key account manager **Project team comprising skilled officials to successfully complete the project. Service providers must attach certified copies of three years qualifications and CV of the technicians.** 4 - qualified Technicians = 20 points 3 - qualified Technicians = 15 points 2 - qualified Technicians = 10 points 1 - project manager qualification = 05 points	= 20 points = 15 points = 10 points = 05 points	**20**
Regulatory: POPIA Certified The bidder is required to provide POPIA compliance as a demonstration that it has the capacity and capability to handle GTVETC TVET College's critical data securely and comply with the confidentiality, integrity, and availability (CIA triad). Please provide a valid certificate of POPIA Certificate**.** Bidder submitted a certificate confirming **POPIA** certification = 05 points		**05**

Bidder did not submit a certificate confirming = 00 points	= 05 points = 00 points	
Security – Information Security Management System The bidder is required to provide **ISO/IEC 27001** as a demonstration that it has the capacity and capability to handle GTVETC TVET College's critical data securely and comply with the confidentiality, integrity, and availability (CIA triad). Please provide a valid certificate of **ISO/IEC 27001.** Bidder submitted a certificate confirming **ISO 27001** certification = 05 points Bidder did not submit a certificate confirming = 00 point	= 05 points = 00 points	**05**
Project Approach and Methodology **The bidder must submit a detailed implementation methodology demonstrating how the services outlined in the Scope of Work will be delivered, including network management, cybersecurity remediation, patch management, reporting, and skills transfer. The methodology must include a project implementation plan and timelines.** Comprehensive methodology covering all aspects of the scope with implementation plan and timelines = 20 points Methodology covers most aspects with limited implementation details = 10 points Poor or generic methodology = 05 points	= 20 points = 10 points = 05 points	**20**
Relevant Certifications and Vendor Partnerships **The bidder must submit proof of vendor accreditations relevant to networking and cybersecurity.** 3 relevant accreditations = 10 points 2 relevant accréditations = 05 points 1 relevant accréditation = 2.5 points	= 10 points = 05 points = 2.5 points	**10**
Proof of locality in Free State Province (submit proof of address (e.g., municipal letter/lease agreement/traditional authority letter) Based in Free State = 10 points Based outside Free State = 05 points None provided = 00 point	= 10 points = 05 points = 00 point	**10**
TOTAL POINTS		**100**

4IR CYBERSECURITY LAB AND CODING AND ROBOTICS LAB

Scope Supply, deliver, install and commission the complete equipment and software schedule on the above pages. This is one specified solution

Capacity 20 cybersecurity learner PCs, 30 coding learner PCs and two instructor PCs; 52 monitors; 18 compatible robotics learning sets; two managed 48-port switches; one security gateway; two projectors; 15 standalone VR headsets; furniture, security, cabling, power protection and software.

Design Cybersecurity practical work runs in isolated local virtual machines. Coding and robotics uses one PC per learner and one robotics set per pair. Five four-person clustered pods reproduce the collaboration approach shown in the proposal image. The photograph does not determine room dimensions.

Supply conditions All goods shall be new, complete and compatible. Supply all necessary adapters, cables, chargers, mounting, licences and configuration. Bidders shall state exact make/model and compliance for every line. Functionally equivalent brands must meet every stated minimum without changing quantities or the solution.

Site basis Two existing rooms on one campus, with suitable structure, cooling, ablutions and College internet service. Include the fixed electrical, network and security works listed. Verify the 72 data outlets, four camera links and 100 m fibre route allowance against a measured survey before tender release. Major building/HVAC works are College prerequisites.

Boundary This schedule includes equipment induction and technical handover.

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SPECIFICATION FOR: SKILLS CENTRE CYBERSECURITY & CLOUD COMPUTING LAB EXTENSION (PENTERSTERLAB)

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE (INCL.VAT)	TOTAL PRICE (INCL.VAT)
COMPUTER EQUIPMENT (Quantities below provide 50 learner positions and two additional instructor positions. Monitors and headsets are separate line				
1	**CYBERSECURITY LEARNER DESKTOP** New business-class tower or small-form-factor desktop; x86-64 processor with at least 8 physical cores and 16 threads; hardware virtualisation and SLAT; 32 GB RAM expandable to at least 64 GB; 1 TB NVMe SSD; Gigabit LAN; TPM 2.0; secure boot; two digital display outputs; at least 6 USB ports including USB 3; Windows 11 Pro 64-bit OEM licence; wired keyboard and mouse. Three-year supplier-backed on-site warranty covering all components. Run three concurrent local VMs per learner, totalling 16 GB guest RAM, while retaining normal host responsiveness	20 units	R	R
2	**CODING AND ROBOTICS LEARNER DESKTOP** New business-class x86-64 desktop; at least 6 physical CPU cores and 12 threads; 16 GB RAM expandable to at least 32 GB; 512 GB NVMe SSD; Gigabit LAN; TPM 2.0; secure boot; two digital display outputs; at least 6 USB ports including USB 3; Windows 11 Pro 64-bit OEM licence; wired keyboard and mouse. Compatible with the supplied controller drivers, IDEs and simulators. Three-year supplier-backed on-site warranty covering all components.	30 units	R	R
3	**INSTRUCTOR DESKTOP** Same minimum configuration as PC01, one per laboratory. Include webcam of at least 1080p resolution, wired keyboard and mouse. Provide simultaneous outputs for the instructor monitor and projector, including all adapters.	02 units	R	R
4	**DESKTOP MONITOR** Minimum 23.8-inch IPS or equivalent wide-view panel; 1920 x 1080 native resolution; anti-glare finish; HDMI or DisplayPort matched to supplied PC; height and tilt adjustment; VESA mounting capability. Include compatible signal cable and power cord. Three-year warranty. One screen per workstation in the base supply.	52 units	R	R
5	**USB HEADSET**	52 units	R	R

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	Wired USB headset with adjustable headband, microphone, volume and mute controls; replaceable or cleanable ear pads. Compatible with the supplied operating system. One per learner and instructor position.			
6	**WORKSTATION SECURITY RESTRAINT** Locking cable or chassis restraint compatible with each supplied PC and its furniture; tamper-resistant mounting where required. Supply keys and a recorded key schedule. Monitor security shall be included where compatible with the selected furniture.	52 units	R	R
7	**NETWORK LASER PRINTER** One per laboratory; monochrome A4 laser, at least 35 pages per minute, automatic duplex, Gigabit or 100 Mb Ethernet, USB, minimum 250-sheet input tray. Include installation, drivers, initial toner plus one additional high-yield cartridge rated at least 3,000 pages per printer, and three-year warranty. Limit access through approved network rules.	02 units	R	R
ROBOTICS LEARNING SETS (18 complete, mutually compatible sets: 15 for learner pairs, one instructor set and two spare sets. Each of the 30 learners has a dedicated PC. Individual robot assessment is delivered in two sittings using the 15 learner sets).				
9	**PROGRAMMABLE CONTROLLER AND INTERFACE BOARD** 32-bit educational development controller; at least 256 KB RAM and 2 MB flash; USB programming; Wi-Fi and Bluetooth; digital and analogue inputs; PWM, I2C, SPI and UART. Support C/C++ and MicroPython, with a supported block-coding route demonstrated on the offered controller. Include USB data cable, breadboard-compatible breakout or expansion board, pin labels, driver package and mounting base. Document logic voltages and include level conversion needed by R03.	18 units	R	R
10	**MOBILE ROBOT CHASSIS AND DRIVE** Rebuildable two-wheel-drive chassis with two geared DC motors, wheel encoders, wheels and caster; compatible dual motor driver; structural parts, fasteners and mounting points for controller and sensors. Include rechargeable protected battery pack, matched charger, power switch and regulated controller supply. Motors must not draw power directly from controller GPIO pins. Provide collision-resistant cable routing and reusable assembly instructions.	18 sets	R	R
11	**SENSORS AND ACTUATORS** Per set: one distance sensor; one minimum three-channel line-tracking sensor; one temperature/humidity sensor; one light sensor; one three-axis accelerometer or IMU; two micro servos; one small display; one buzzer. Include mounts, connectors, drivers and required voltage conversion. All components shall operate with R01 and the R02 power system.	18 sets	R	R
12	**ELECTRONICS PROTOTYPING COMPONENTS**	18 sets	R	R

	Per set: one minimum 800-point breadboard; 60 reusable jumper leads in mixed connector types; 20 LEDs; 100 assorted resistors; 20 assorted capacitors; 10 pushbuttons; two potentiometers; five general-purpose transistors; five diodes; one USB supply cable; and a labelled compartment box. Supply a full component inventory and safe example circuits for the supplied controller.			
13	**ROBOT STORAGE AND IDENTIFICATION** Durable lidded carry case with compartments or inserts for each complete R01-R04 set. Label controller, chassis, accessories and case with the same set number. Supply printed and editable inventory sheets, assembly manual, wiring diagrams and troubleshooting guide.	18 sets	R	R
14	**LEARNING SOFTWARE AND EXERCISE PACK** Provide required device drivers, firmware, programming libraries and perpetual local access to installation files where licensing permits. Include at least 12 progressive exercises covering logic, inputs/outputs, movement, sensor response, line following, data logging and a wireless IoT activity. Include editable learner sheets and instructor solutions. Any subscription content shall include 12 months of institutional rights for 30 learners and two instructors.	01 lot	R	R
ROBOTICS TOOLS & EQUIPMENT (Shared workshop equipment supplements the 18 robotics sets. Supply low-voltage teaching equipment and all adapters needed for safe operation. Consumables below are a defined starter stock, not an assumed annual consumption allowance).				
15	**DIGITAL MULTIMETER** Auto-ranging handheld digital multimeter with DC/AC voltage, resistance, continuity and diode testing; fused current input; protective holster; test leads and batteries. Suitable for the supplied low-voltage electronics exercises. One per complete learning set.	18 units	R	R
16	**ELECTRONICS HAND TOOLS** Per set: precision screwdriver set; side cutters; long-nose pliers; wire stripper; tweezers; small adjustable spanner; and reusable storage pouch. Match tools to all supplied mechanical and electrical fittings.	18 sets	R	R
17	**BENCH DC POWER SUPPLY** Adjustable regulated 0-30 V DC supply, at least 3 A; separate voltage and current display; adjustable current limit and short-circuit protection. Include shrouded test leads and adapters. Instructor-supervised low-voltage use; set current and voltage limits appropriate to the connected controller.	06 units	R	R
18	**SOLDERING WORKSTATION** Temperature-controlled soldering iron, stand, tip-cleaning accessories, heat-resistant mat, local fume extractor and safety glasses. Include suitable lead-free solder, desoldering braid and a practice board. Configure designated supervised work areas; no soldering on ordinary computer desks.	06 stations	R	R

19	**DIGITAL OSCILLOSCOPE** Two channels; at least 50 MHz bandwidth and 500 MSa/s maximum real-time sampling; two probes, USB export and teaching guide for low-voltage digital and analogue signals. Include calibration or manufacturer test documentation.	03 units	R	R
20	**REPLACEMENT AND CONSUMABLE STOCK** Supply 6 spare compatible controllers; 6 geared motors; 6 servos; 6 USB data cables; 6 distance sensors; 6 line-sensor modules; 6 replacement protected battery packs; 500 jumper leads; 1,000 assorted resistors; 200 assorted LEDs; 200 assorted capacitors; 100 pushbuttons; 50 m insulated hookup wire; 1 kg lead-free solder; 20 m heat-shrink tubing; and 20 small prototyping boards. All replacement parts must match the installed kits.	01 lot	R	R
21	**ROBOT TEST ARENA** Durable, reusable minimum 2 m x 2 m modular or roll-out testing surface with high-contrast line-following course, removable obstacles and storage bag. Non-slip when deployed; locate outside circulation routes. Include 30 additional pairs of safety glasses for practical activities.	1 set	R	R
ACTIVE NETWORK EQUIPMENT (Base architecture: one access switch in each lab, linked by 10 Gb fibre; one shared security gateway at the College network handoff. This schedule assumes two rooms on one campus. Management, cyber teaching, vulnerable targets, coding/IoT and shared services must be separated)				
22	**MANAGED ACCESS SWITCH** Each: 48 x 10/100/1000 RJ45 access ports; at least 4 x 10 Gb SFP+ uplink ports; PoE+ on all 48 access ports with minimum 370 W total budget. Support VLAN tagging, ACLs, RSTP/MSTP, LACP, QoS, DHCP snooping, port security, 802.1X, SNMPv3, secure management and configuration export. Rack-mount kit included. All required management licences and three-year support included.	02 units	R	R
23	**NEXT-GENERATION SECURITY GATEWAY** Rack-mountable appliance or appliance with shelf; at least 6 Gigabit Ethernet interfaces and dual-WAN support. Stateful firewall, VLAN routing, application control, IPS, malware and web filtering, VPN, MFA-capable administration and log export. Minimum published threat-protection throughput 1 Gb/s; demonstrate at least 200 Mb/s with the proposed inspection profile. Include three years of security subscriptions, firmware updates and support. Supply equivalent performance evidence, not firewall-only throughput.	01 unit	R	R
24	**MANAGED WIRELESS ACCESS POINT** One per lab; Wi-Fi 6, dual-band 2.4/5 GHz, at least 2x2 radios; WPA2/WPA3 enterprise support; multiple SSIDs mapped to VLANs; client isolation; PoE power. Include ceiling/wall mounting. Support at least 30 active clients per lab at the approved teaching workload. VR downloads and	02 units	R	R

	firmware updates must be scheduled to avoid saturating teaching traffic.			
25	**NETWORK MANAGEMENT SYSTEM** Supply a local hardware management controller covering both switches and both access points. Include all dependencies and three-year support; core local management must have perpetual rights. College-owned administrator account, configuration backup, device monitoring, firmware management and alerting. Essential switching shall continue if the controller or internet service is unavailable.	01 instance	R	R
26	**10 GB FIBRE TRANSCEIVER** 10GBASE-LR SFP+ optic suitable for the supplied switches and OS2 single-mode fibre. Two optics in service for one inter-lab link; two identical spare optics. Include manufacturer compatibility confirmation and diagnostic support.	04 units	R	R
27	**NETWORK CONFIGURATION** Configure separate management, cybersecurity learner, coding/IoT, shared-service and guest networks. Keep vulnerable VM targets on host-only isolated networks by default; prevent bridging to College production. Permit only approved shared-service and internet flows. Provide rule schedule, VLAN/IP plan, device backups and proof of blocked prohibited paths. Do not provide routine student administration of the infrastructure.	01 service	R	R
CABLING & CABINETS (The fixed allowance is 72 Cat6 data outlets: 28 in cybersecurity and 44 in coding/robotics. A site survey must confirm outlet positions and measured cable routes before tender release. All outlets are to be terminated, labelled, patched and tested).				
28	**COMPLETE CAT6 DATA OUTLET** Each point includes solid-copper Cat6 U/UTP cable, matched keystone, faceplate or furniture outlet, containment, termination and identification. No copper-clad aluminium. Maximum 90 m permanent link. Allow 28 points for cyber: 21 PCs, printer, AP, AV position and 3 spares plus SEC03 uplink; 44 for coding: 31 PCs, printer, AP, AV position and 10 spares. Supply permanent-link certification for every outlet.	72 points	R	R
29	**24-PORT PATCH PANEL** 19-inch Cat6 patch panel; matched category performance; numbered ports and rear strain relief. Two panels in each rack. Include cable management and rack fixings. Unused panel positions remain available for expansion.	04 units	R	R
30	**RACK PATCH LEAD** Factory-terminated Cat6 copper patch lead, nominal 1 m, with lengths adjusted to cabinet layout. 72 for outlets and 8 for local equipment/spares; SEC04 camera patch cords are additional. Colour-code by function; do not substitute stranded patch cable for horizontal cabling.	80 units	R	R
31	**DEVICE PATCH LEAD**	72 units	R	R

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	Factory-terminated Cat6 copper patch lead, nominal 3 m, with lengths adjusted to desk and equipment positions. Supply sufficient length without strain or loose loops in walkways.			
32	**NETWORK CABINET** Lockable minimum 18U 19-inch cabinet, at least 600 mm usable depth or deeper to accommodate the selected equipment. One per lab. Include fan tray where needed, two shelves, cable managers, brush entries, earthing kit and labelled 8-way or greater rack PDU. Confirm wall/floor loading and ventilation. PDU included here must not be duplicated under power works.	02 units	R	R
33	**INTER-LAB FIBRE BACKBONE** Provisional route allowance 100 m: minimum 6-core OS2 fibre, appropriate indoor/outdoor and armouring construction for the surveyed route, in protective containment. Include two fibre termination enclosures, LC adapters/pigtails, splicing, four duplex LC patch cords (two active/two spare), labelling and optical test results. Match N05 optics. Confirm actual route length before tender issue; a copper inter-building link is not an automatic substitute.	1 link	R	R
34	**COLLEGE UPLINK AND CONTAINMENT** Complete handoff to the existing College network: allow one Cat6 uplink up to 90 m, patching and approved configuration. Include trunking, floor/pod cable routes, penetrations and finishing for all scheduled works. Where distance or building separation requires fibre, replace the provisional handoff with a measured optical design before issue. Do not drill or energise without site approval.	01 lot	R	R
STORAGE & POWER PROTECTION (Cyber practical VMs run on PC01 and PC03. No dedicated virtualisation server is required in the base design. Shared storage holds teaching images, submissions and backups; it is not the live datastore for 20 concurrent cyber sessions).				
35	**SHARED STORAGE APPLIANCE** Four-bay or greater NAS with minimum 8 GB RAM; four 4 TB NAS-rated drives; RAID 6 or equivalent dual-drive fault tolerance, providing approximately 8 TB decimal usable capacity before formatting and reserves. At least two Gigabit network ports; snapshots, quotas, scheduled backup, encrypted administration and role-based file access. Include all disks, OS and licences. Three-year hardware warranty. Locate on controlled shared-services network.	01 unit	R	R
36	**OFFLINE BACKUP DRIVE** Minimum 12 TB external USB 3 storage, compatible with P01; include cables and protective cases. Configure encrypted rotating backups, keep one copy disconnected, and demonstrate restore. Supply the College with the recovery key through an approved secure handover.	02 units	R	R
37	**RACK UPS**	02 units	R	R

	Online double-conversion UPS; minimum 2 kVA/1.8 kW per rack; network monitoring card or equivalent network management; automatic safe shutdown support for NAS/controller. Include rails or suitable shelf and all power leads. Size batteries for at least 15 minutes at the measured installed critical load including switch PoE load and SEC03 recorder/cameras. Protect networking, firewall, recorder and storage; full classroom desktop backup is not included.			
38	**ELECTRICAL INSTALLATION AND SURGE PROTECTION** One complete lab installation per lot: supply safe fixed electrical points for 26 equipment positions in cyber (21 PCs, printer, projector, rack, VR cabinet, spare) and 40 in coding (31 PCs, printer, projector, rack, 6 benches). Each position includes sufficient outlets for its complete load. Survey, circuit design, earthing, DB protection, surge protection, containment and electrical certificate included. Ratings and circuits shall follow the competent electrical designer's load assessment.	02 lots	R	R
39	**BACKUP AND RECOVERY CONFIGURATION** Configure shared folders, individual access rights, capacity alerts, snapshots and daily backup of teaching material and learner submissions. Demonstrate recovery of a sample file and a master VM image. Deliver restore guide and administrator handover. RAID alone shall not be represented as a backup.	01 service	R	R
40	**EXISTING ROOM READINESS VERIFICATION** Verify existing rooms, cooling/ventilation, accessible circulation, structural surfaces and ablutions are suitable for the equipment and occupancy. College supplies these existing facilities; major HVAC and building alterations are outside this equipment contract. Record deficiencies before tender issue and resolve them as College prerequisites. Included electrical, access-control and fire equipment remains mandatory.	02 surveys	R	R
PROJECTION & VIRTUAL REALITY (The base specification retains the proposal's two HD 3D projectors and 15 VR headsets. The selected VR approach is standalone six-degree-of-freedom equipment, so dedicated gaming graphics cards are not needed for the base VR activities).				
41	**HD 3D PROJECTOR AND SCREEN** One set per lab: native 1920 x 1080 or higher resolution; minimum 3,500 ANSI lumens; HDMI input; supported 3D input format; manufacturer-rated light source suitable for classroom use. Include minimum 100-inch 16:9 screen, mount, power/signal cabling and adapters. Confirm throw distance, image size and readable sightlines from all seats. State light-source life and three-year warranty.	02 sets	R	R
42	**COMPATIBLE ACTIVE 3D GLASSES**	52 units	R	R

	Supply glasses explicitly compatible with AV01: 21 for the cyber room and 31 for coding. Include batteries/charging arrangements and cleaning/storage accessories. Demonstrate end-to-end 3D playback using legally supplied sample content. Glasses are separate from VR headsets.			
43	**CLASSROOM AUDIO** Powered speaker pair or equivalent classroom sound system with instructor-accessible volume control, connected to the projector/PC audio path. Include brackets, power and audio cables. Provide intelligible speech throughout the occupied room without requiring desktop headset use.	02 sets	R	R
44	**STANDALONE VR HEADSET** Self-contained headset with six-degree-of-freedom inside-out tracking; two tracked controllers; minimum 128 GB storage; minimum 1832 x 1920 per-eye display resolution; refresh rate at least 72 Hz; wireless casting capability; Wi-Fi and rechargeable battery. Include charger, adjustable head strap, glasses spacer or equivalent, washable facial interface and protective case. No mobile phone or tethered PC required for base activities.	15 units	R	R
45	**VR STORAGE AND CHARGING CABINET** Lockable ventilated cabinet for all 15 headsets and controllers; individual storage bays; matched chargers; managed electrical loading and cable organisation. Include protective inserts and cleaning kit. Charging arrangement must follow device manufacturer requirements and the electrical design.	01 unit	R	R
46	**VR MANAGEMENT AND CONTENT ENTITLEMENT** Institutional device setup and management for 15 headsets, including shared-use operation, application deployment, reset/reassignment and casting to AV01. Supply at least three teaching applications or modules covering a virtual learning space, engineering/robotics visualisation and interactive 3D simulation. Include 12 months of required device-management and content rights. Identify the applications and show that institutional classroom use is permitted without learner purchase or personal payment details.	15 devices	R	R
47	**FOUR-PERSON CYBERSECURITY WORKSTATION POD** Octagonal or angled cluster-style pod accommodating four independent work positions, total 20 learner seats. Minimum clear working width 800 mm per learner and usable depth 650 mm.	05 units	R	R

	Durable laminated top, stable frame, concealed cable trays, grommets and secure PC placement. Provide dimensioned drawing demonstrating monitor clearance, access and safe circulation. Avoid screens obstructing the front teaching display.			
48	**TWO-PERSON CODING WORKSTATION DESK** Two full computer positions per desk, total 30 learner seats; minimum overall width 1600 mm and depth 750 mm; hardwearing top, stable frame, cable tray and grommets. Include accessible desk arrangements within the total and sufficient clearance for robotics work away from the computer keyboard.	15 units	R	R
49	**INSTRUCTOR DESK** Minimum 1400 x 700 mm usable top; cable management, lockable drawer/storage and space for monitor, keyboard and teaching materials. Position to retain sightlines and connect to projection controls.	02 units	R	R
50	Ergonomic computer chair 20 cyber learner chairs, 30 coding learner chairs and two instructor chairs. Adjustable seat height and back support, stable five-point base, durable cleanable upholstery; minimum rated user load 120 kg. Match chair dimensions to the desks and clear routes.	52 units	R	R
51	**ELECTRONICS PRACTICAL WORKBENCH** Minimum 1500 x 750 mm; stable work surface suitable for the low-voltage electronics and supervised soldering equipment. Include tool storage, cable management and suitable stools (two per bench). Bench power is under P04. Arrange benches so fume extraction works without directing fumes toward learners.	06 units	R	R
52	**LOCKABLE EQUIPMENT CUPBOARD** Robust shelving and doors; at least 1800 mm high, 900 mm wide and 450 mm deep. Shelves sized and rated for the 18 kit cases, tools and consumables. Allocate one cupboard for shared cyber resources and two for robotics, subject to the approved storage layout.	03 units	R	R
53	**WHITEBOARD** Wall-mounted whiteboard, minimum 1800 x 1200 mm; pen tray, mounting fixings, starter pens and eraser. Locate independently of the projection surface. Include a dimensioned layout identifying all furniture, displays, cabinets, sockets and network points before manufacture.	02 units	R	R
PHYSICAL SECURITY EQUIPMENT (Supply the following fixed security package for the two existing teaching rooms. Camera placement and retention are to be approved by the College. Existing compliant walls, windows and structural doors remain College-provided facilities).				
54	**DOOR ACCESS CONTROL**	02 sets	R	R

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	One set per lab: keypad/card reader, 20 access cards, controller, compatible electric locking hardware, door contact, request-to-exit button, emergency release and standby power. Include installation and account/key register. Locking must allow safe emergency egress and be compatible with the existing door construction.			
55	**IP SECURITY CAMERA** Two per lab; minimum 4 MP resolution; PoE; indoor dome/turret housing; wide dynamic range; configurable privacy masks and scheduled recording. Include mounting, configuration and cabling. Cameras connect to a separate security VLAN.	04 units	R	R
56	**NETWORK VIDEO RECORDER** Minimum 8 IP channels with four integrated PoE camera ports; one surveillance-rated 4 TB disk; H.265 recording; role-based access and secure export.	01 unit	R	R
57	**CAMERA CABLING** Four complete Cat6 camera links additional to N07, terminated and tested, connected to SEC03 PoE ports. Include containment, connectors and four rack patch cords. Keep security cabling identified separately.	04 points	R	R
58	**ROOM FIRE EQUIPMENT** One 5 kg CO2 extinguisher and one fire blanket per room, with brackets and signage. Competent provider to verify suitability and placement alongside the existing building fire provisions. Include installation and inspection documentation; this equipment does not replace the building fire-safety assessment.	02 sets	R	R
SOFTWARE FOR BOTH LABS (Supply supported software licensed for institutional use. Identify all paid components and support separately from open-source Software).				
59	**OPERATING SYSTEM** Windows 11 Pro 64-bit OEM entitlement is included in PC01-PC03; do not duplicate its supply. Install a currently supported release, security updates, hardware drivers and institution-controlled accounts. Supply licence evidence.	52 devices	R	R
60	**ENDPOINT PROTECTION** Centrally managed anti-malware/endpoint protection with policy management, web protection or integration with N02, update scheduling and reporting. Include 36 months of required licences and management dependencies. Instructor and learner accounts shall operate without routine local administrator rights. Define narrowly scoped exceptions for isolated training VMs only.	52 devices	R	R
61	**CLASSROOM MANAGEMENT**		R	R

	Instructor screen broadcast, learner thumbnails, remote assistance, screen lock, application launch and separate classroom groups. Veyon or functionally equivalent supported solution. Configure instructor-only control and consent/notice settings. Include all required add-ons and 12 months of support; use perpetual core functionality where available.	50 learners 2 instructors		
62	**PRODUCTIVITY AND UTILITY SOFTWARE** Supported browser, PDF reader, ZIP/archive tool, media player and office suite capable of opening and saving DOCX, XLSX and PPTX. Supply LibreOffice with institutional installation and configuration. No Flash Player or Internet Explorer dependency. Include offline permitted installation packages and tested file associations.	52 devices	R	R
63	**CODING TOOLCHAIN** Install on 30 coding PCs and two instructor PCs: Python 3, C/C++ compiler, code editor/IDE, Git, controller IDE, MicroPython tools, required drivers/libraries and a supported block-programming tool compatible with R01. Include circuit/robot simulation suitable for the chosen teaching exercises. Demonstrate compile, upload, debug and recovery on actual supplied hardware.	32 devices	R	R
64	**ROBOTICS AND IOT ENVIRONMENT** Install the R06 learning tools on the coding and instructor PCs, plus a local MQTT broker/data dashboard for the supplied wireless exercises where required. Include all dependencies, scripts and configuration. Internet/cloud accounts shall not be mandatory for basic code upload, movement and sensor exercises. The supplied teaching environment shall operate locally; no paid public-cloud consumption is included.	32 devices	R	R
65	**SOFTWARE AND LICENCE HANDOVER** Supply product, version, licence type, seat/device count, account owner, expiry, renewal terms and installation/recovery location for every component. Identify software with additional commercial-use restrictions. College staff shall receive administrator access and permitted installation media; vendor personal accounts shall not control institutional licences.	1 register	R	R
CYBERSECURITY & CLOUD LEARNING SOFTWARE (Provide 22 local virtualisation hosts and 22 online platform accounts. Use Linux-based guests and isolated training targets. No dedicated server or Windows guest licences are required)				
66	**DESKTOP VIRTUALIZATION ENVIRONMENT** Supported hypervisor supporting isolated virtual networks, snapshots/checkpoints, cloning, import/export and at least three concurrent VMs per workstation. Include all licences and any extension rights required for institutional use. Configure a standard learner template and reset mechanism. Demonstrate compatibility with the operating system, endpoint protection and course tools.	22 hosts	R	R

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67	**SECURITY TOOLS AND LOCAL TARGET LIBRARY** Supply a maintained Linux security workstation image; Linux server/client images; deliberately vulnerable web training targets; packet analysis; web testing proxy; network enumeration tools; and secure-code exercises. Examples include Kali Linux, Wireshark and OWASP training applications or equivalents. Include only tools and images with appropriate rights. Keep vulnerable targets on isolated host-only networks; provide no unrestricted route into the College network.	22 hosts	R	R
68	**ONLINE APPLICATION-SECURITY PLATFORM** Pentester-Lab institutional/enterprise service or equivalent. Include named-user access for 22 accounts for 12 months, hands-on web/application-security exercises, progressive learning paths, instructor dashboard and progress export. State account reassignment and cohort-turnover rules.Learners must be able to use the service concurrently. Confirm institutional and intended public-course rights. Do not represent this platform alone as complete cloud or defensive-security training.	20 learners 2 instructors	R	R
69	**DEFENSIVE SECURITY AND CLOUD EXERCISES** Provide at least 12 documented practical activities spanning access control, network analysis, vulnerability findings and remediation, log analysis, incident reporting, secure configuration and cloud/IAM fundamentals. Deliver resettable local templates with synthetic data and instructor guides. Teach cloud concepts using local virtualisation, containers, identity/access and networking exercises; live public-cloud usage is not part of this supply. No perpetual dependence on evaluation/trial Windows images.	1 library for 22 hosts	R	R
70	**MASTER IMAGE AND RECOVERY SETUP** Build and validate standard cyber host configuration, VM library and student save locations. Store distributable master images on P01 and cache working VMs locally. Supply restore scripts/guides. Demonstrate 20 simultaneous learner sessions and reset a test environment within five minutes using the installed workload. Do not run all learner VMs directly from the shared NAS.	1 service	R	R
71	**TEACHING AND ADMINISTRATIVE DOCUMENTATION** Deliver environment diagram, authorised-use rules, permitted target list, lab reset guide, instructor exercise answers and learner reporting templates. Include a method for shutting down an exercise and reporting an incident. Provide all accounts and licence entitlements in the College's name.	1 pack	R	R
INSTALLATION & EQUIPMENT HANDOVER				

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72	**SITE VERIFICATION AND FINAL DESIGN** Survey both rooms and verify existing power, handoff, network services and internet. Confirm N07/N12/N13 quantities, furniture dimensions, cooling, storage and safety works before final tender issue or procurement. Submit final bill of materials and room/network drawings. No substitution or quantity change without written approval.	1 project	R	R
73	**SUPPLY AND COMMISSIONING** Deliver, assemble, asset-label and configure all scheduled base items. Test all PCs, 18 complete robotics sets, displays, all VR units, wireless service and network links. Supply serial-number inventory, warranty evidence, licence register, cabling results and electrical documentation. Remove packaging and leave rooms ready for use.	1 lot	R	R
74	**CYBER LECTURER EQUIPMENT INDUCTION** Two instructor-led days for up to six nominated staff, covering VM use/reset, platform operation, exercise delivery, progress reporting and authorised-use controls. Use the installed lab. Include practical walkthroughs and handover materials; this is equipment induction, not an accredited skills programme.	2 teaching days	R	R
75	**CODING AND ROBOTICS EQUIPMENT INDUCTION** Two instructor-led days for up to six nominated staff, covering component inventory, assembly, programming, sensors, troubleshooting, charging and safe tool use. Demonstrate at least four of the supplied exercises and the software recovery process. Include editable teaching resources.	2 teaching days	R	R
76	**ADMINISTRATOR HANDOVER** One practical day for up to four IT/facilities staff covering accounts, switch/firewall configuration backups, licence management, NAS restore, UPS alerts and support escalation. Transfer credentials securely and remove temporary supplier access.	1 technical day	R	R
77	**INSTALLATION SUPPORT** Twelve months of configuration/installation support from acceptance, in addition to item-specific warranties/subscriptions. During agreed business hours, acknowledge a lab-wide outage within one hour and target restoration/workaround within one business day. Disclose on-site coverage, exclusions and escalation. Resolve commissioning defects before sign-off.	12 months	R	R
78	**FUNCTIONAL ACCEPTANCE** Witness 20 simultaneous cyber practical sessions and 30 simultaneous coding users; all PCs shall function with required applications. Verify prohibited network paths are blocked, all supplied robot components function, projected text is readable from every seat, backup restore succeeds and UPS runtime meets P03. Acceptance requires completed base quantities,	1 sign off	R	R

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	operating manuals and no unresolved safety or lab-blocking defect.			
TOTAL BID PRICE (INCL. VAT AND DELIVERY)				**R**

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