



Republic of the Philippines
WESTERN MINDANAO STATE UNIVERSITY
Zamboanga City
Telephone No.: 062-991-7875
www.wmsu.edu.ph

INVITATION TO BID

The Western Mindanao State University, through its Bids and Awards Committee (BAC), is inviting PhilGEPS registered suppliers to apply for eligibility and to submit bids for the item mentioned hereunder:

- 1.) 1 Lot **Supply, Delivery and installation of Various Engineering Simulation and Automation Laboratory Equipment**, consisting of:

a.) Multi-Technology Design and Simulation Software, 20+1 user licenses (20 for students and 1 for teacher)

Technical Specifications:

This software contains libraries and modules for: Hydraulics, Pneumatics, components sizing-energy, bill of material and report, catalogue manager, Manufacturers catalogues, Control panels and 2D-3D HMI, Teach ware-workflow, Didactic support, SFC Compilers, Sequential function chart, Digital electronics, APISs/, Script language, PLC ladder logic, CAN bus, Block Diagram-Math, electrical Controls, electro technical One-line, Electro technical Mechanical

Descriptions:

- * Interactive lab exercise; These exercises include simple schematic that can be simulated and animated in order to be analyzed. Teachers can also modify these exercises and create ones.
- * Online remote Access Licensing; You can prepare and simulate your courses and homework from home, school or workplace.
- * Teach ware; This software offers guides, lectures, animations and lab notes for all levels of discipline.
- * Workflow; Allows teachers to create and sequence content in order to evaluate students knowledge retention.
- * Configuration tools; allows you to create and configure valves, cylinders, motors etc. to obtain components which are graphically compliant with your requirements and respectful of real technical performance.
- * Create and customize your own symbols, libraries and templates;
- * Component sizing; Provides calculation worksheets specific to each category of pneumatic, hydraulic and electrical components which include calculation tool necessary for component sizing.
- * Adjustable component simulation parameters; This includes parameters such as applied loads, dimensions angles, internal leakages, force, torque, etc.
- * Dynamic, Realistic and Visual Simulation; Accurately reproduce the systems behavior in a dynamic and visual way. During simulation components are animated and lines and wires are color-coded according to their state
- * Virtual System; Using the electrical, PLC libraries and SFC/GRAFNET module, the student simply links sensors, switches, lights, conveyors, etc., in order to make the virtual systems operate according to teacher's instructions.

- * 3D Editing and Animations;
- * Mechanical Links; Mechanical bodies can be linked to fluid power actuators to simulate and animate their effects
- * Cross-section Animation; Users can build cross-section animated views and link them to the simulation results in order to produce synchronized animations.
- * System behavior analysis; You can monitor and visualize simulation variables during simulation
- * Troubleshooting Modules;
- * Circuit Modification during Simulation; Simulation to isolate parts of a circuits, perform measurements, Provides tools for disconnecting wires and pipes during and repair or replace components to fix suspected failures
- * Diagnostic Tools; Provides extensive diagnostic tools allowing to detect inconsistencies or errors such as non-compliance with ISO standards, free connectors, redundant or overlapping lines, etc.
- * Interfaces to programmable logic controllers and equipment;
- * Manufacturers Catalogues; Offering teachers and students an extensive library with thousands of preconfigured components that reproduce real world functions
- * Can Bus Links to Operate Virtual Machines;
- * PLC Export;
- * Block Diagram; It is possible to create a graphical environment for component and system modeling using predefined function blocks.
It can also be used to create and test complete control loops
- * Sequential function charts;
- * HMI and Control Panels; User can easily create animated shapes that reproduce the behavior of the equipment they represent.
- * Electrical Controls; Interacts with all components from other libraries so as to create electrically controlled systems.
- * Electro technical; Offers wide array of components to create AC and DC electrical circuits, from basic to advanced uses.
It supports IEC and NEMA standards.
Motor soft starters and VFDs are available
- * Electro technical One-line; Enables the design of diagrams for all voltage levels in a typical one-line representation of networks for power generation, transmission and distribution
- * Digital Electronics; Includes standard devices such as inverters, logic gates, flip-flop counters, shift registers, comparators, switches, LEDs, 7-bar display, decoders, multiplexers, etc.
- * Programmable logic controller; Offers PLC logic libraries for different brands of PLC
- * Pneumatics; Includes all the symbols necessary to create pneumatic, electro pneumatic and logic systems.
- * Hydraulics; Offers all component symbols required to create mobile and industrial hydraulic systems and functions.

2.) 1 Lot b.) Electronic Circuit Design and 3D Simulation Software (20 user licenses)

Technical Specifications:

Features and Capabilities:

1. Schematic Editor
2. Schematic Symbol Editor
3. Footprint Editor
4. Netlist Editor
5. Live 3D Breadboard Tool

6. Advanced PCB Designer
 - a. Automatic and Manual Design Tools
 - b. Creating flex PCB's
 - c. Animated 3D view
7. Electrical Rules Check (ERC)
8. Interpreter
9. Library Manager
10. Parameter Extractor
11. Text and Equation Editor
12. DC analysis
13. Transient Analysis
14. Fourier analysis
15. Digital Simulation
16. HDL Simulation (VHDL, Verilog, Verilog-A, Verilog-AMS)
17. Microcontrollers (MCU) Simulation
18. Flowchart Editor and Debugger
19. AC analysis
20. Network analysis
21. Noise analysis
22. Symbolic analysis
23. Monte-Carlo and Worst-case analysis
24. Design Tool
25. Optimization
26. Post-processor
27. Presentation
28. Interactive mode
29. Virtual Instruments
 - a. Digital Multimeter
 - b. Function Generator
 - c. Storage Oscilloscope
 - d. Signal and Network Analyzer
 - e. Digital Signal Generator
 - f. Logic Analyzer
30. Real-time Test & Measurements
31. Training and Examination
 - a. Learning Management Tool – Simulator's Training Supervisor
 - b. Teach and Learn Troubleshooting
 - c. Problem Solving
 - d. 1200 circuits and Integrated E-Books

Component Models Included in the Software:

1. Passive components such as resistors, potentiometer, thermistor, lamp, capacitor, inductor, transformer, relay, diodes, etc.
2. Active components such as bipolar transistor, thermistor, thyristor, operational amplifier, etc.
3. Sources such as current source, voltage source, current generator, voltage generator, linear and nonlinear controlled sources, digital pulse source, etc.
4. Basic digital components such as AND, OR, NAND, NOR, XOR gates with 2, 3 and 4 inputs, tri-state buffer, inverter, D SR JK flip-flop, D latch, etc.
5. Digital IC, such as, 4000 logic family, 74000 logic family, VHDL to test and build your own logic components, FPGA and CPLD libraries

- 6. Measuring Instruments, such as voltage meter, ampere meter, current arrow, power meter, impedance meter
- 7. Other components that includes, time controlled switch, voltage controlled switch, AD and DA converter, timers, analog control blocks, pull-up resistor, seven-segment display, keypad, voltage regulator, vacuum tube, passive and active RF components, two ports (S, Z, YH)

3.) 1 Lot

c.) Electro-Pneumatic Trainer with PLC

Technical Specifications:

- * includes some basic pneumatic training set
- * users can have training from basic principle of electro-pneumatic controls to advance training
- * can be interfaced with any PLC

Training Contents:

- * physical principles of electrical systems and pneumatics
- * function and use of electro-pneumatic components
- * recognizing and drawing of electro-pneumatic symbols
- * representation of motion sequences and operating status
- * drawing of pneumatic and electrical circuit diagrams
- * direct and indirect manual controls
- * direct and indirect position-dependent control
- * logical AND/OR function of switch-on signals
- * representing motion sequences and switching states
- * constructing control systems using relays
- * electrical latching circuits
- * application and function of 3/2 and 5/2-way solenoid valves
- * analyzing circuits
- * application and function of limit switches
- * end-position monitoring using electronic proximity sensors
- * realizing oscillating movement
- * time-dependent controls with timer relays
- * using pressure switches
- * troubleshooting simple electro pneumatic circuits

Components:

- * Service Unit (1 unit)
 - Pressure range: 0.5~12 bar
 - Air filter, pressure, regulator, lubricator
 - Shut off valve
 - Filter degree: 40?m
 - Connection plastic hose: Outside diameter 6mm
 - Flow rate: 750 LPM
- * Air Distributor (1 unit)
 - Pressure range: 0~10 bar
 - Input: 1 ea (6 mm)
 - Output: 8 ea, check connector included (4 mm)
 - One-touch connector
- * Single-acting cylinder (1 unit)
 - Pressure range: 0~10 bar
 - Max. pressure: 15 bar
 - Piston diameter: 25 mm
 - Stroke: 50 mm

- * Double-acting cylinder with cushion (2 units)
 - Pressure range: 0~10 bar
 - Max. pressure: 15 bar
 - Piston diameter: 25 mm
 - Stroke: 125 mm
 - Magnetic for sensor detection
 - Adjustable cushion included
- * One-way flow control, valve (4 units)
 - Pressure range: 0~10 bar
 - 1(A)-->2(B): 0~150 LPM
 - 2(B)-->1(A): 160/130 LPM
- * 3/2-way solenoid valve (Normally closed) (1 unit)
 - Pressure range: 0.5~10 bar
 - Response time: 20 ms
 - Normally closed type valve
 - Spring return
 - LED and protection circuit included
 - Manual override
- * 5/2-way single solenoid valve (2 units)
 - Pressure range: 0.5~10 bar
 - Response time: 20 ms
 - LED and protection circuit included
 - Return: spring and pilot
 - Manual override
- * 5/2-way double solenoid valve (2 units)
 - Pressure range: 0.5~10 bar
 - Response time: 20 ms
 - LED and protection circuit included
 - Manual override
- * Pressure switch (1 unit)
 - Pressure range: 0.5~10 bar
 - Control setting pressure
 - Pressure display
- * Push-button switch set (3 fold) (1 unit)
 - Power: DC 24V
 - Consists of: 2 momentary push-buttons, 1 locking push-button
 - Contact: 2a-contact, 2 b-contact
 - Contact allowable: Max, 1A
 - Power consumption: 0.48 W
- * T-Connector (10 units)
 - Pressure range: 0~10 bar
- * Relay Unit (3 fold) (2 units)
 - Power: DC 24V
 - Contact: 4C (Changeover)
 - Contact load: Max. 5A
 - Allowable: Max.120W
 - Operating time: < 20 ms
 - Block time: < 20 ms
- * Digital Time Relay (1 unit)

- Power: DC 24V
- Contact: 2a-2b
- Contact load: Max. 5A
- Allowable: Max. 100W
- Delay time: 1~99 sec
- On-delay / Off delay
- * Digital Counter (1 unit)
 - Power: DC 24V
 - Contact: 1C(Changeover)
 - Contact load: Max. 5A
 - Power Consumption: 2.4W
 - Counter pulse: 20 ms
 - Display: 4 digits
- * Pilot Lamp and Buzzer unit (1 unit)
 - Power: DC 24V
 - Lamp Power consumption: 1.2W
 - Buzzer Power consumption: 0.04W
 - Buzzer frequency: 420Hz
- * Inductive Sensor (1 unit)
 - Operating voltage: DC10~30V
 - Sensing distance: 5mm
 - Switching frequency: Max. 500Hz
 - Output: Normally open, PNP
 - Output Current: Max. 200mA
 - Short-circuit protection included
- * Capacitive Sensor (1 unit)
 - Switching power: DC10~30V
 - Sensing distance: 8mm
 - Response time: 1ms
 - Output: Normally open, PNP
 - Output Current: Max. 200mA
 - Short-circuit protection included
- * Optical Sensor (1 unit)
 - Switching power: DC10~30V
 - Switching distance: 100mm
 - Response time: 1ms
 - Output: Normally open, PNP
 - Output Current: Max. 200mA
- * Electrical limit switch (left) (2 units)
 - Contact: DC 24V,5A
 - Contact: 1 c
 - Switching frequency: Max,200Hz
 - Roller lever electric switch
- * Electrical limit switch (right) (2 units)
 - Contact: DC 24V,5A
 - Contact: 1 c
 - Switching frequency: Max,200Hz
 - Roller lever electric switch
- * Plastic Hose (1M) (10 units)
 - Operating temperature: -40°C ~ 60°C

- Color: blue
 - Size: outside diameter 4 mm
 - * Hose Cutter (1 unit)
 - PVC Grip
 - Multi-purpose
 - Type: 190 mm
 - Cutting material: Air Hose (0~16mm)
 - * Cable Set (1 set)
 - Color: red, blue, black
 - Length: 1500mm, 1000mm, 500mm, 300mm,100mm
 - High elasticity and special coating
 - * Power Supply (1 unit)
 - Power: AC 220 V,50/60Hz
 - Output power: DC 24V
 - Output current: 5A
 - * Electro-pneumatics textbook (1 unit)
 - Fundamentals of electrical technology
 - Components in the electrical signal control section
 - Electrically actuated directional control valves
 - * Electro-pneumatics workbook (Basic Level) (1 unit)
 - * Cable Hanger (1 unit)
 - * Profile panel (750 x 1200) (1 unit)
 - Size: 1200 (L) x 750 (W) x 30 (T)
 - * Pneumatic basic working table (1 unit)
 - * Air Compressor (1 unit)
 - * Single four layered drawer
 - * Programmable Logic Controller Trainer
 - Digital Input: 16 channels
 - Digital Output: 16 channels
 - 4mm socket
 - Power Supply included
- 4) 1 Lot d.) Advance Virtual/augmented Reality Welding Trainer
- Technical Specifications:
- 1 Unit Welding Simulator Specifications:
- * Welding Processes Supported:
 - GMAW (MIG/MAG) & FCAW G/S, SMAW (MMA Electrode), GTAW (TIG)
 - * Welding Positions:
 - PA, PB, PC, PD, PF/PG, PE, PH/PJ, HL045/JL045,
 - 1F, 2F, 3F, 4F, 1G, 2G, 3G, 4G, 5G, 5F, 6G, 6F
 - * Welding Joints:
 1. Overlapped plate,
 2. V - Butt plate,
 3. T -Angled plate to plate,
 4. V - Butt pipe,
 5. T - Angled pipe to plate
 6. Advanced Welding Multijointed GMAW welding part in carbon steel (Plate-Tube Butt Vertical). Three welding beads, one of them circular
 7. Advanced Welding Multijointed Part for GMAW welding in carbon steel. It has internal welds in different angles and different positions in the same trajectory (horizontal, vertical, 6G, under the ceiling)

8. Advanced Welding Multijointed Part for GMAW welding in carbon steel.
Butt and horizontal welding with splice and obstacle. Corner weld with continuity in PB position, PB-PD corner weld with appendages and splices.
J" and "V" shaped return weld.
- * With Real Welding Torches
 - * With Welding Sounds
 - * Accessories:
 1. Welding Mask,
 2. Welding torches,
 3. Filler rod,
 4. Welding gloves,
 5. Workstand,
 6. Mobile covercase,
 7. GTAW (TIG) Pedal,
 8. Basic Welding Multijoints & Advanced Welding Multijoints
 - * With voltage selection
 - * With Intensity (Amperage) Selection
 - * With Shielding Gas Selection
 - * With Wire Speed Selection in GMAW and FCAW
 - * Coupon thickness Selection:
 - 3mm, 6mm, 10mm
 - * With Possibility to use other Thickness
 - * Electrode Stick/Filler Rod Diameter Selection:
 - GMAW: carbon and stainless steel: 0.8mm, 1mm, 1.2mm
 - GMAW: aluminum: 1mm, 1.2 mm
 - SMAW: carbon and stainless steel: 2.5mm, 3.25mm, 4mm
 - GTAW: carbon steel, stainless steel and aluminum: 2mm, 2.4 mm
 - * With Multi-Pass Exercise with Different Welding Processes
 - * Welding Pattern / Weave
 1. Straight,
 2. Triangle,
 3. Convex,
 4. Circle,
 5. Zigzag,
 6. Push/Drag
 - * Transference Modes
 - Carbon and stainless steel: Short & globular spray
 - * Defects Analyzed
 1. porosity,
 2. splashing,
 3. slag inclusion
 - * Report Features
 1. CTWD,
 2. Travel Speed,
 3. Work Angle,
 4. Travel Angle,
 5. Trajectory,
 6. Voltage,
 7. Wirefeed Speed,
 8. Technical Parameters,

9. Equipment Settings

- * With Analysis Module
- * With On-Screen Help Guides
- * With Classroom Connection with Different Units sharing Information
- * With Real Environment During Simulation
- * Unit Can Be Used with Glasses
- * Power Supply
 - 220 VAC 60Hz Single Phase
- * Processor
 - Intel Core ® i7 or equivalent
- * Chipset
 - Intel ® H110 Express Chipset or equivalent
- * RAM
 - 4GB DDR4 or higher
- * Graphic Card
 - NVIDIA ® GeForce GTX 950 or equivalent
- * Hard Disk
 - Solid State | 64 GB MSATA or higher
- * Display Size
 - 9.7" or higher
- * Rear Panel Ports
 - Screen: HDMI/Display Ports
 - USB: 1x U S B, 2x USB 3.0
 - Connection: 2x LAN, 2x Antennas Wi- Fi Dual Band
 - Audio: Microphone & speakers ports
 - Others: Robotics port
- * Vision Module Resolution
 - HD LCD 4.8"
 - HDMI Display input up to 1024x600
 - Ultra-low video distortion
 - 24-bit True Color
- * Cameras Resolution
 - 800X600
- * Operating Temperature
 - 0 - 45°
- * Humidity
 - 10 - 80%
- * Updates
 - with online and offline Software updates & bug fixing (Same version) included in the license with no additional cost
- * With Remote Maintenance
- * Certifications
 - ISO 9001 Quality Management System
 - ISO 14001 Environmental Management System
- * Language
 - English

Welding Machine Trainer Specifications:

- * Number of Welding Machine:
 - 2 units
- * Rated Output:

- Current/Voltage/Duty Cycle (MIG)
- 230V: 200A/24V/25%
- * Effective Input Current @ Rated Output:
 - 14.7A
- * Output Range
 - 230V: 20-220 Amps DC, Max.
 - OCV: 56
- * Wire Feed Speed Range:
 - 50-500 ipm (1.3-12.7 m/min)
- * Processes:
 - SMAW & GMAW
- * Input Power:
 - 230VAC 60Hz Single Phase
- * Accessories:
 - Welding Gun
 - 230V Input Cables
 - Work Cable and Clamp
 - Electrode Holder and Lead Assembly
 - Adjustable Gas Regulator and Hose
 - Gas and Gasless Nozzles
 - Gun Cable Liner
 - Spindle Adapter
 - Contact Tips
 - Drive Rolls
 - Knurled Drive Rolls
 - Wire Guides
 - Welding Booth

Additional Conditions:

- ONE (1) year minimum on Parts and Service.
- Bidder may opt to offer for additional warranty terms.
- Equipment must be supplied with manuals in English.
- Bidder must conduct online after sales training or onsite if travelling is already allowed. Also, must provide follow up after sales training within the duration of the warranty period upon request.

The criteria to be used for the eligibility check of the prospective bidders, examination and evaluation of bids, post-qualification and all matters relevant to this procurement shall be in accordance with Republic Act. No. 9184 (The Government Procurement Reform Act) and its Implementing Rules and Regulations.

Interested bidders may obtain further information from WMSU BAC Secretariat regarding the checklist of eligibility and technical requirements.

IMPORTANT NOTICE FOR BIDDERS:

1. Bidding papers shall be available upon payment of a non-refundable fee of Ten Thousand Pesos Only (Php.10,000.00). Eligible bidders that will download the bidding paper from the PhilGEPS website shall pay the said fee before the submission of their bids. (Please attached the Xerox copy of the Official Receipt)

2. All bidders' are required to post a Bid Security, at least Two (2%) Percent of the ABC in the form of Cash, Cashier's Check or Manager's Check or may submit Bid Securing Declaration. Bids without Bid Security will not be considered.
3. The Bidder shall prepare an original of the Eligibility Documents, Technical Proposal, Financial Proposal and clearly mark each "ORIGINAL – ELIGIBILITY DOCUMENTS", "ORIGINAL - TECHNICAL PROPOSAL", and "ORIGINAL – FINANCIAL PROPOSAL", respectively. Bidders shall submit three (3) copies of each bidding documents- "Original", Copy 1", and Copy 2". State the unit price of each item and the total bid price and also state the shortest time of delivery and submit your quotation duly signed by your representative in a sealed envelope.
4. Pre-Bid Conference will be on **April 6, 2021, 10:00 AM** at BAC Office, WMSU, Ground Floor Executive Building, Zamboanga City and/or through video conferencing or webcasting via Zoom, which shall be open to prospective bidders.
5. Bid Submission will be on or before **April 20, 2021 at 10:00 A.M.** through **Manual Submission.**
6. Bid opening shall be on **April 20, 2021** at 10:00 A.M. at BAC Office, Ground Floor Executive Building, WMSU, Zamboanga City, Philippines, 7000. Bids will be opened in the presence of the Bidders representatives who choose to attend at the address above. Late bids shall not be accepted.
7. Price validity shall be for a period of 120 calendar days.
8. Bidders shall submit original brochures showing certifications of the product being offered.
9. Warranty shall be for a period of Six (6) months for supplies and materials. One (1) year for equipment, from date of acceptance by WESTERN MINDANAO STATE UNIVERSITY.
10. Bids received in excess of the ABC shall be automatically rejected at Bid Opening.

The WESTERN MINDANAO STATE UNIVERSITY reserves the right to reject any or all Bids and to accept the bid most advantageous to the government, and to award the contract by lot, if warranted.