



# PhilGEPS

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Bid Notice Abstract

Invitation to Bid (ITB)

Reference Number

4155820

Procuring Entity

BATAAN PENINSULA STATE UNIVERSITY

Title

BPSU Orani Campus – PR no. 16-10-262 – Equipment for Laboratory of Science & Technology Building

Area of Delivery

Bataan

<b>Solicitation Number:</b>	11032016	<b>Status</b>	<b>Failed</b>
<b>Trade Agreement:</b>	Others		
<b>Procurement Mode:</b>	Public Bidding	<b>Associated Components</b>	3
<b>Classification:</b>	Goods		
<b>Category:</b>	Laboratory Supplies and Equipment	<b>Bid Supplements</b>	0
<b>Estimated Budget for the Contract:</b>	PHP 1,110,837.00		
<b>Delivery Period:</b>	30 Day/s	<b>Document Request List</b>	5
<b>Client Agency:</b>			
		<b>Date Published</b>	03-Nov-2016
<b>Contact Person:</b>	Randy Almazan Rodriguez Procurement Unit Capitol Site Balanga City Bataan Philippines 2100 63-47-2379213 63-47-2379213 dyrodriguez_15@yahoo.com	<b>Last Updated / Time</b>	23-Feb-2017 00:45 AM
		<b>Closing Date / Time</b>	01-Dec-2016 14:00 PM

**Description**

2 pc Mechanical Equivalent of Heat with Digital Mutimeter and Triple Beam Balance [1] This Apparatus is accurate to 5 % [2] It has rugged ball bearing construction and a Thermistor that way there is no thermometer to break [3] There is also a crank counter attached so you can't forget how many times you have cranked [4] It has double ball bearings to prevent the wear on moving parts [5] The apparatus is simple and accurate. As the crank is turned, the friction between the rope and the cylinder is just enough to support a mass hanging from the other end of the rope. [6] The ratio between the work preformed and the thermal energy produced and transmitted to the cylinder determines the mechanical equivalent of heat. This apparatus INCLUDES: The base, cylinder, crank and counter with a built-in clamp 2.7 meters of flat nylon rope A 1 gallon can that can be filled with a measured mass of sand or water (if 10 g of laboratory masses are not available) Laboratory manual including theory, step-by-step instructions and data tables. A refrigerator (or ice) for cooling the cylinder below room temperature. Calipers and a thermometer for measuring room temperature are helpful, but not necessary

2 pcs Force Table with Mass and Hanger Set This has detachable legs for easy storage includes three low-friction pulleys with clamps and spool of thread, adjustable pulley heigth for reduced parallax, laminated surface with built in flash memory, durable digital signal processing insures accurate, stable and repeatable measurements.

2 pcs Motion Sensor Ultrasonic range-finding sensor range 0.15 to 8 m sensor rotates 360, mount on table top, support rod or dynamic tracks with 1.8 meter cable, resolution: 1mm, sample at up to 50 Hz

2 set 550 Universal Interface [1] 2 MHz sampling rate [2] 2 high speed analog inputs Measurement Range: +/- 10V differential input Input Impedance: 1 Megaohm Input Protection: +/- 250 V continuous Selectable Voltage Gain: x1, x10, x100 Resolution: 14 bit, 0.12 mV [3] 2 digital inputs for photogate and other timing sensors [4] 2 PASPORT sensor ports [5] signal generator with built in Voltage and Current sensor Waveforms: sine, triangle, square, wave,



positive and negative ramps, DC Frequency Range: 0.001Hz to 100KHz: 1 Mhz resolution Amplitude Range: +/- 8Vresolution 1.33Mv, 12 -bit DAC[6] connect to computer via USM and Bluetooth connectivity

2 sets "Rotating Platform with Force Sensor  
[1] Dual low friction bearings for shaft[2] Four kg ""A"" frame base with adjustable feet and motor mount[3] 48 cm extruded rotating platform with built in scale[4] Support rod to hold pulley and mass or a 7.5 cm photogate[5] Two 300 g rectangular masses[6] Low-friction pulley mounted on spindle for applying torque  
Force Sensor  
[1] Range: +/- 50 newtons[2] Finger holes for easy grip[3] Mounts on a dynamics cart or a rod (up to 12 mm diameter)[4] Use in muscle fatigue experiments or visual/auditory response time experiments[5] Tare button to zero the sensor[6] Overload protection built in[7] Resolution: 0.03 N or 3.1 grams[8] Includes hook, rubber bumper and mounting thumbscrew[9] Sensor capability description upgradeable[10] Constructed of tough, impact-resistant polycarbonate plastic[11] Digital signal processing insures accurate, stable, and repeatable measurements "

2 sets "PASCAR Dynamics System [1] 1.2 Meter aluminum track with attached metric scale[2] Newly redesigned feet and End stops have captured nuts which automatically align with the track T slot for easy mounting[3] Two 250g carts with neodymium magnets for elastic collisions and three-position plunger[4] One 250 g masses for each cart included[5] One adjustable end stop with magnets and Velcro pads[6] Rod clamp for inclined track experiments  
SUGGESTED EXPERIMENTS:1. Kinematics 2. Coefficient of Friction 3. Predicting Acceleration 4. Cart Calibration (Spring Constant) 5. Sliding Friction and Conservation of Energy 6. Conservation of Momentum in Explosions 7. Conservation of Momentum in Collisions 8. Simple Harmonic Oscillators 9. Oscillations on an Incline10. Springs in Serial and Parallel 11. First's Second Law,12. Newton's Second Law II 13. Acceleration Down an Incline14. Conservation of Energy"

1 set "Field Mapper Kit Includes Conductive Paper with cm grid23 x30 cm (50 sheets)10 pushpins: three wires  
Conductive ink pen and circular templatePlastic Tray with corkboard top: 32 x 48 cmInstruction manuals with 10 experiments "

2 sets Basic Electricity 2 boards Battery Holder (2)Resistor : (1) 3.3 ohm, 2 WLight Sockets (3) with 3 bulbs (#14)Potentiometer: (1) 25 ohm, 2 WSpring Connectors: (32)Transistor Socket: (1)Storage Tube for Holding Components Components Package containing Resistors (23) 10 ohm to 220kiloohm 5% , (1/2 W)Capacitors (4), Diodes (2), Transistors (2), Wire leads 22 gauge

1 pc Metric Spring Scale 10N [1] High-quality metric spring scale - precise and durable.[2] 10 N range with 0.2 N resolution. [3] Sealed Spring; Can't get tangled, over stretched, or lost[4] Zero adjust: turn the knob to zero the balance

1 pc Atwoods Machine [1] Two Super Pulleys mounted on a 6.4 cm long rod produce a classic, low-friction introduction to Newton's Second Law.[2] The Atwood's Machine is ideal for demonstrating and analyzing the gravitational acceleration and force

2 pcs Compact Thermal Expansion Apparatus Compact 0.01 mm dial gauge . Three sample tubes (brass, copper and aluminum 46 cm long.Initial and final temperature are determined by measuring resistance of a 100 kiloohm built in thermistor with a multimeter

2 pcs Projectile Launcher Smart Gate System Includes: Smart Gate ,Mini Launcher ,Steel balls (2) with loading rod,Aluminum Table Clamp ,45 cm Stainless Steel Rod ,2-D Collision Accessory

2 pcs Time of flight accesoriess with extension cord [1] Compatible with high speed USB-based computer interfaces[2] Piezo electric circuit generates TTL timing signal from projectile impact[3] Compatible with spring-powered projectile launchers[4] Pad (20 by 20 cm) made from high strength plastic[5] Includes 1 meter long connecting cable[6] Use with computer interface or equivalent electronic timers

\*\*\*\*\*nothing follows\*\*\*\*\*

The complete set of the Bidding Documents may be purchased by any prospective supplier from the BPSU – BAC Secretariat upon payment of a non-refundable fee of Php 1,100.00

Line Items

Item No.	Product/Service Name	Description	Quantity	UOM	Budget (PHP)
1	Mechanical Equivalent of Heat with Digital Mutime	This Apparatus is accurate to 5 % [2] It has rugged ball bearing construction and a Thermistor that way there is no thermometer to break [3] There is also a crank counter attached so you can't forget how many times you have cranked [4] It has double bal	2	Piece	256,930.00
2	Basic Calorimetry Set with Steam Generator	Six Styrofoam calorimeters [2] Thermometer with range of 20° C to 110° C with 1° resolution [3] Water trap and plastic tubing included [4] Aluminum,	1	Set	91,930.00

		copper and lead included for specific heat determination[5] Instruction manual and experiment guide			
3	Digital Caliper	This metric /English (15 cm/6 in.) digital caliper measures to 0.01 mm (0.0005in.) [2] It has auto power off and includes a sturdy plastic storage case	2	Unit	17,146.00
4	Force Table with Mass and Hanger Set	This has detachable legs for easy storage includes three low-friction pulleys with clamps and spool of thread, adjustable pulley height for reduced parallax, laminated surface with built in flash memory,durable digital signal processing insures accur	2	Piece	81,512.00
5	Motion Sensor	Ultrasonic range-finding sensor range0.15 to 8 m sensor rotates 360, mount on table top, support rod or dynamic tracks with 1.8 meter cable, resolution:1mm, sample at up to 50 Hz	2	Piece	23,478.00
6	550 Universal Interface	2 MHz sampling rate [2] 2 high speed analog inputs Measurement Range: +/- 10V differential input Input Impedance: 1Megaohm Input Protection: +/- 250 V continuous Selectable Voltage Gain: x1, x10, x100 Resolution: 14 bit,0.12 mV [3] 2 digital inputs f	2	Set	100,266.00
7	Rotating Platform with Force Sensor	Dual low friction bearings for shaft[2] Four kg "A" frame base with adjustable feet and motor mount[3] 48 cm extruded rotating platform with built in scale[4] Support rod to hold pulley and mass or a 7.5 cm photogate[5] Two 300 g rectangular masses[6	2	Set	157,746.00
8	PASCAR Dynamics System	1.2 Meter aluminum track with attached metric scale[2] Newly redesigned feet and End stops have captured nuts which automatically align with the track T slot for easy mounting[3] Two 250g carts with neodymium magnets for elastic collisions and three-	2	Set	69,904.00
9	Field Mapper Kit	Includes Conductive Paper with cm grid23 x30 cm (50 sheets)10 pushpins: three wires Conductive ink pen and circular templatePlastic Tray with corkboard top: 32 x 48 cmInstruction manuals with 10 experiments	1	Set	23,213.00
10	Basic Electricity 2 boards	Battery Holder (2)Resistor : (1) 3.3 ohm, 2 WLight Sockets (3) with 3 bulbs (#14)Potentiometer: (1) 25 ohm, 2 WSpring Connectors: (32)Transistor Socket: (1)Storage Tube for Holding Components Components Package containing Resistors (23) 10 ohm to 220	2	Set	58,298.00
11	Metric Spring Scale 10N	High-quality metric spring scale - precise and durable.[2] 10 N range with 0.2 N resolution. [3] Sealed Spring; Can't get tangled, over stretched, or lost[4] Zero adjust: turn the knob to zero the balance	1	Piece	3,165.00
12	Atwoods Machine	Two Super Pulleys mounted on a 6.4 cm long rod produce a classic, low-friction introduction to Newton's Second Law.[2] The Atwood's Machine is ideal for demonstrating and analyzing the gravitational acceleration and force	1	Piece	8,573.00
13	Compact Thermal	Compact 0.01 mm dial gauge . Three sample tubes (brass, copper and aluminum 46 cm long.Initial and final temperature	2	Piece	104,000.00