

# ANNEX “A”

## Technical Specifications

<p><b>I. Background</b></p> <p>SLSU Main Campus intends to purchase state-of-the-art training facilities for the establishment of Productivity and Relevance via Optimization of Science and Engineering Laboratory (PROSE Lab.) to expose students to modern and advance laboratory exercises and activities and continue to produce quality civil engineers.</p>			
<p><b>II. Areas Covered/Delivery Requirement</b></p> <p>The Contract for <b>SUPPLY, DELIVERY, INSTALLATION &amp; COMMISSIONING OF VARIOUS EQUIPMENT FOR THE ESTABLISHMENT OF PROSE LAB.</b> shall include delivery of the goods to SLSU Main Campus at Sogod, Southern Leyte within sixty (60) calendar days upon receipt of the Notice to Proceed.</p> <p>The supplier shall provide SLSU Main Campus the Goods with the following minimum specifications:</p>			<p><b>Statement of Compliance</b></p> <p><i>(Indicate also the brand name, model and detailed specification with supporting brochure and related literature)</i></p>
Item	Qty.	Minimum Specifications	
1	3 sets	<p><b>Soil Hydrometer (151H or 152 in ASTM Specification E100)</b>                      Support to the following standards: AASHTO T 88, ASTM D7928, ASTM D422                      Range: 0.995 - 1.038                      Division: 0.001 at 68 °F (20 °C)                      Length: 11in (280mm)                      Estimated Shipping Weight: 2.0lb (0.91kg)</p>	
2	3 sets	<p><b>Liquid Limit Device w/Grooving Tool</b>                      Support to the following standards: AASHTO T 89, ASSHTO T 90, ASTM D4318                      Product Dimensions: 8 x8 x 6in (203.2 x 203.2 x 152.4mm), WxDxH                      Estimated Shipping Weight: SA – 61:5.0lb (2.27kg)                      Accessories: Liquid Limit Grooving Tool                                        Liquid Limit Brass Cups                                        Liquid Limit/Plastic Limit Accessory Set                                        Glass Plate</p>	
3	3 sets	<p><b>Sand Cone Apparatus/Rubber Ballon</b>                      Support to the following standards: ASTM D1556; AASHTO T191, COE detachable double cone, which is threaded on one end for attaching the threaded plastic jar; and has a 6.5” (165mm) dia. Flanged opening on the other, which fits the opening of the sand cone plate. Cone has a brass cylindrical plate with a 0.5” (12.7mm) dia. Orifice and stops that prevent the valve from rotating past the completely open or completely closed positions.                      Accessories:                                        Sand Cone Plate, 6.5” (165mm) Hole                                        Sand Cone Replacement jar                                        Sand Cone Accessory Kit                                        Density Sand for Sand Cone Test, 50lb.                                        Lid for Plastic Sand Cone Jar</p>	

4	3 sets	<p><b>Permeability Device Set, Falling &amp; Constant Head with Accessories</b>  Chamber Dimensions: 2.5in (63.5mm) Diameter  Estimated Shipping Weight: 12.0lb (5.44kg)  Accessories: Single Tube manometer w/Constant Head  Permeability Compaction Hammer  Constant Head Reservoir</p>	
5	5 sets	<p><b>Compaction Mold, Standard</b>  Supports the following standard(s): AASHTO T 134, AASHTO T 135, AASHTO T 136, AASHTO T 180, AASHTO T 99, ASTM D1557, ASTM D1558, ASTM D698, ASTM D559/559M, ASTM D560/560M  Specimen Size: 4in (101.6mm)  Material: Stainless Steel  Mold Dimensions: 4 x 4.584in (102 x 116.4mm), I.D. x H  Estimated Shipping Weight: 13.0lb (5.90kg)  Accessories: Stainless Steel Straight Edge</p>	
6	2 sets	<p><b>Soil Compaction Hammer, Standard</b>  Supports the following standard(s): AASHTO T 134, AASHTO T 135, AASHTO T 136, AASHTO T 180, AASHTO T 99, ASTM D 1557, ASTM D1558, ASTM D558, ASTM D698, ASTM D559/559M  Product Dimensions: 21 x 2.2in (533 x 55mm) LxDia.  Material: Stainless Steel  Estimated Shipping Weight: 9.0lb (4.08kg)</p>	
7	4 sets	<p><b>CBR Compaction Mold, Strand with Extension Collar (California Bearing Ratio (CBR) Mold Set</b>  Meets standard(s): AAHTO T 193, ASTM D1883  Specimen Size: 6in (152mm)  Mold Dimensions: 6 x 7in (152 x 178mm) I.D. x H  Estimated Shipping Weight: 21.0lb (9.53kg)  Accessories: CBR Spacer Disc  Soil Compaction Hammers</p>	
8	4 sets	<p><b>Compaction Rammer (CBR)</b>  Supports the following standards: AASHTO T 134, AASHTO T 135, AASHTO T 136, AASHTO T 180, AASHTO T 99, ASTM D 1557, ASTM D 1558, ASTM D 558, ASTM D 698, ASTM D 559/559M  Product Dimensions: 21 x 2.2in (533 x 55mm) LxDia.  Material: Stainless Steel  Estimated Shipping Weight: 9.0lb (4.08kg)</p>	
9	1 set	<p><b>Loading Machine, 5,000lb (min) cap. Rate 0.05in/min</b></p>	
10	1 set	<p><b>Direct Shear Testing Machine, Standard</b>  Supports the following standards: BS 1337; EN 1997-2; ASTM D3080</p>	

		<p>Mode of Display: Micro-controller multi-line alpha numeric display for all simultaneous channels</p> <p>Capacity: 2 kN (200 kgf) load cell</p> <p>Range: +20 mm. LVDT displacement sensor with 3 m long cable</p> <p>Shear Measurement: Direct/residual</p> <p>Fast forward/diverse speed: 10mm/min</p> <p>Rates of strain: Up to 9.99 mm/minute</p> <p>Specimen size: 60 x 60 x 25 mm</p>																																																	
11	1 set	<p><b>Apparatus Moisture Content Determination</b></p> <p>Meets standard(s): AASHTO T 217, ASTM D4944, FM 5-507</p> <p>Maximum Particle Size: 20mm</p> <p>Moisture Range: 0-20%</p> <p>Specimen Weight: 20g</p> <p>Dimensions: Vessel: 14 x 5.5in (356 x 140mm), LxDia</p> <p>Estimated Shipping Weight: 14.0lb (6.35kg)</p>																																																	
12	1 set	<p><b>Standard Penetration Test Set (Soil Pocket Penetrometer w/Carrying Pouch)</b></p> <p>Material: Stainless Steel</p> <p>Product Dimensions: 0.75 x 6.6in (19 x 168mm), Dia, xL</p> <p>Net Weight: 6.8oz (193g)</p> <p>Estimates Shipping Weight: 1.0lb (0.45kg)</p>																																																	
13	1 set	<p><b>Compressive Testing Machine, 50 tons cap.</b></p> <p>Specification:</p> <table border="1"> <thead> <tr> <th>Test Type</th> <th>Flexure</th> <th>Compression</th> </tr> </thead> <tbody> <tr> <td>Capacity</td> <td>15-50 kN</td> <td>500 kN</td> </tr> <tr> <td>Class 1 Measuring Range</td> <td>0.5 to 50 kN</td> <td>2.5 to 500 kN</td> </tr> <tr> <td colspan="3">The roughness value for texture of loading and auxiliary platens</td> </tr> <tr> <td>Lower Platen Dimensions</td> <td>165mm</td> <td>165mm</td> </tr> <tr> <td>Upper Platen Dimensions</td> <td>165mm</td> <td>165mm</td> </tr> <tr> <td>Maximum Vertical Clearance between Platens</td> <td>263mm</td> <td>263mm</td> </tr> <tr> <td>Piston Diameter</td> <td>80mm</td> <td>160mm</td> </tr> <tr> <td>Maximum Piston Movement</td> <td>50mm</td> <td>50mm</td> </tr> <tr> <td>Horizontal Clearance</td> <td>200mm</td> <td>300mm</td> </tr> <tr> <td>Power</td> <td colspan="2">750 W</td> </tr> <tr> <td>Oil Capacity</td> <td colspan="2">20 L</td> </tr> <tr> <td>Maximum Working Pressure</td> <td>30 bar</td> <td>125 bar</td> </tr> <tr> <td>Rapid Approach Rate</td> <td>80 mm/min</td> <td>50mm/min</td> </tr> <tr> <td>Dimensions (WxLxH)</td> <td colspan="2">1050x550x1650mm</td> </tr> <tr> <td>Weight</td> <td colspan="2">410 kg</td> </tr> </tbody> </table>	Test Type	Flexure	Compression	Capacity	15-50 kN	500 kN	Class 1 Measuring Range	0.5 to 50 kN	2.5 to 500 kN	The roughness value for texture of loading and auxiliary platens			Lower Platen Dimensions	165mm	165mm	Upper Platen Dimensions	165mm	165mm	Maximum Vertical Clearance between Platens	263mm	263mm	Piston Diameter	80mm	160mm	Maximum Piston Movement	50mm	50mm	Horizontal Clearance	200mm	300mm	Power	750 W		Oil Capacity	20 L		Maximum Working Pressure	30 bar	125 bar	Rapid Approach Rate	80 mm/min	50mm/min	Dimensions (WxLxH)	1050x550x1650mm		Weight	410 kg		
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14	1 set	<b>Penetration Apparatus with Needles</b>																																																	
15	1 set	<p><b>L.A. Abrasion Test Apparatus/Machine</b></p> <p>Support the following standard(s): AASHTO T 96, ASTM C535, ASTM C131/131M</p>																																																	

		Revolutions per Minute: 30-33 Electrical: 5.8Amps Drum Diameter: 28in (711mm) Product Dimensions: 38 x 40 x 46.5in (965 x 1,016 x 1,181mm), WxDxH Estimated Shipping Weight: 1200.0lb (544.32kg) Accessories: Extra Catch-pan for LA Abrasion Wear Resistant-Steel for LA Abrasion Replacement LA Abrasion Charge (12 balls)	
16	1 set	<b>Laboratory Oven (6.7ft<sup>3</sup> chamber)</b> Convection: Forced-air Maximum Temperature: 6500°F (260°C) Uniformity: ±2.5°C Chamber Volume: 6.7ft <sup>3</sup> (189L) capacity Chamber Dimensions: 24x20x40.5in (610x508xx610mm), WxDxH Electrical: 240V / 50-60Hz / 12.4 Amps Product Dimensions: 36x27x40.5in (910x659x1,029mm), WxDxH Estimated Shipping Weight: 365.0lb (165kg)	
17	6 sets	<b>Cylindrical Molds (for concrete)</b> Meets Standard(s): AASHTO R 39, AASHTO T 23, AASHTO M 205/M M 205, ASTM C192/192M, ASTM C31/31M, ASTM C470/470M Material: Steel Product Dimensions: 4 x 8in (102 x 203mm) Dia.Xh Included Items: Steel Concrete Cylinder Mold (4x8in no handle, or 6x12in, with or w/o handle)	
18	6 sets	<b>Steel Concrete Beam Molds (with tamping rods)</b> Meets Standard(s): AASHTO R39, AASHTO T 23, AASHTO T 97, ASTM C192/192M, ASTM C31/31M, ASTM C403/403M, ASTM C78/78M Product Dimensions: 21 x 6 x 6in (533 x 152mm), WxDxH Estimated Shipping Weight: 59.0lb (26.76kg)	
19	1 pc.	<b>Digital Scale (with 0.1g readability)</b>	
<b>III. Terms of Technical Support</b>			
1	The Supplier shall provide 24/7 telephone, e-mail, chat, and remote technical support services covering all Goods with a two-day response time from SLSUs posting of support request.		
2	The Supplier shall provide next-business-day onsite support for technical issues not resolved through the actions described in the preceding paragraph. Hardware defects/errors in any component of the Goods shall automatically require onsite support.		
<b>IV. Delivery and Retrieval</b>			
1	The Supplier shall deliver the goods within <b>sixty (60) calendar days</b> from the receipt of the Notice to Proceed.		
2	The Supplier shall replace Goods found to have satisfactory defects immediately inclusive of cost of replacement/repair.		

	In case replacement or repair will take longer than five (5) working days, the Supplier shall provide a temporary replacement unit of equal capability and features as the item to be replaced/repaired.	
<b>V. Terms of Payment</b>		
1	All payments shall be inclusive of Value-Added Tax (VAT) and other lawful charges.	
<b>VI. Miscellaneous</b>		
1	The Supplier shall agree with the definitions and terms found in the General Conditions of Contract (GCC) and Special Conditions of Contract (SCC) contained in the Philippine Bidding Documents for Procurement of Goods issued by the Government Procurement Policy Board (GPPB).	

**Note:**

Bidder must state compliance to each of the provisions in the Terms of Reference/Technical Specifications, as well as to the Schedule of Requirements. The STATEMENT OF COMPLIANCE must be signed by the authorized representative of the Bidder, with proof of authority to sign and submit the bid for and in behalf of the Bidder concerned. If the Bidder is a joint venture, the representative must have authority to sign for and in behalf of the partners to the joint venture.

Conformé:

\_\_\_\_\_  
[Signature/s]

[Name of Bidder's Authorized Representative/s]

\_\_\_\_\_  
[Position]

\_\_\_\_\_  
[Date]