



التاريخ 2020/9/16

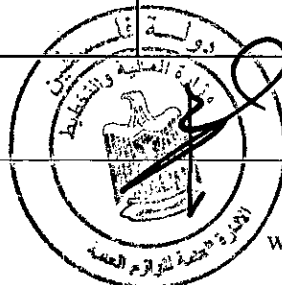
تنويه صادر عن اللوازم العامة لمناقصة رقم ( MOHE- GSD / KFW/ 2020/ 104 )

شراء وتوريد معدات ومستلزمات مختبرات الهندسة الكهربائية لبرنامج الدراسات الثنائية في جامعة القدس / لصالح وزارة التعليم العالي

إشارة إلى الموضوع المذكور أعلاه يرجى العلم ان جدول المواصفات والكميات والاسعار في كراسة المناقصة اعلاه لم تظهر كاملة بسبب مشكلة في الطباعة وعليه يرجى اعتماد الجداول اذناه في تقديم الاسعار:

Specifications and Quantities of EE Labs

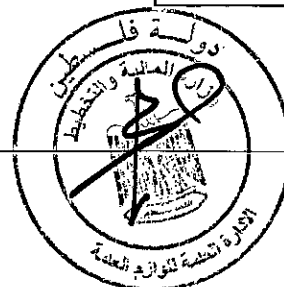
No	Item	Specifications	Unit	Unit price	QTY	Total Price
				Euro		Euro
A	Measuring Instruments					
1	Analog-digital multimeter	<p>Analog-digital multimeter Resolution: 10 <math>\mu</math>V, 10 m<math>\Omega</math>, 1 <math>\mu</math>A Precision temperature measurement Automatic and manual measuring range selection Range: Maximum voltage 1000V, Accuracy <math>\pm(0.1\%+1)</math> AC/DC AC bandwidth 5kHz AC/DC current Maximum amps 10A, Amps accuracy <math>\pm(0.4\%+2)</math> Resistance Maximum resistance 50 M<math>\Omega</math>, Accuracy <math>\pm(0.4\%+1)</math> Capacitance Maximum capacitance 9,999 <math>\mu</math>F, Accuracy <math>\pm(1\%+2)</math>, Best resolution 0.01 nF Frequency Maximum frequency 200 KHz, Accuracy <math>\pm(0.005\%+1)</math>, Best resolution 0.01 Hz Measured value memory, data hold, min-max value Overload and blown fuse indicators IP 40 protection Protective rubber cover 3 year guarantee USB interface enables multiple measuring system and PC analysis Manual and documentation in English language</p>	Instrument		20	
B	Automation, PLC & Microcontroller					





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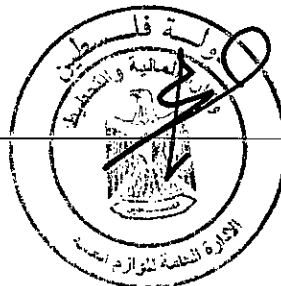
2	Projects - Set of workpieces	20 pcs. red 20 pcs. green 20 pcs. blue  top piece with snap-in mechanism and labelling bottom piece with snap-in mechanism	Electronics	4	
C	Consumption Parts				
4	PCB Soldering Projects - consumables for lead-free soldering training	consisting of typical industrial applications:  4 PCB projects, including PCB and components such as resistors, capacitors, diodes, ICs, transistors, connectors etc.  e.g. Adjustable Power supply 0..30V/2A; Multifunction timer module; Temperature control and display; USB relay interface	Materials	38	
5	Solder for electronic work	Solder for electronic work acc.  antimony-free, soldering flux acc. to DIN EN 29454, 1.1.2.B (F-SW 26),  S-Sn60Pb40, rosin halide-activated 250g Spool	Materials	15	
6	End sleeves Set	End sleeves uninsulated of electrolytic copper, tin-plated , Part 1: 0.75 - 1,0 - 1,5 - 2.5 mm 1000 each  End sleeves DIN 46228 < DIN colour range insulated Electrolytic copper, tin-plated , Part 4: 0.75 - 1.0 - 1.5 - 2.5 mm 500 each  Assortment of insulated terminals Containing: 1000 insulated terminals, press range 1.5 - 6 mm <sup>2</sup> , box  Ring type: 0.25-1.5 M3 100pcs; 0.25-1.5 M4 100pcs; 0.25-1.5 M5 100pcs; 1.5-2.5 M4 100pcs; 1.5-2.5 M5 100pcs; 1.5-2.5 M6 50pcs; 2.5-6 M4 50pcs; 2.5-6 M5 50pcs; 2.5-6 M6 50pcs	Materials	1	





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		Fork type: 0.25-1.5 M3 100pcs; 0.25-1.5 M4 100pcs; 1.5-2.5 M5 50pcs; 1.5-2.5 M6 50pcs			
7	Wire H05V-K	Control wire 1,0 qmm Typ H05V-K black 3 x 500m blue 2 x 500m green/yellow 2 x 500m  Control wire 1,5 qmm Typ H05V-K black 2 x 500m blue 1 x 500m green/yellow 1 x 500m	Materials		1
8	PCB copper coated (for PCB milling machine)	30 pieces FR4, 229 mm x 305 mm, 0/35 µm; Epoxy; Single side copper coated 35 µm Cu	Materials		15
10	Analog Parts Kit	Technical Specifications	Materials		14
D	Equipment, Motor Test & Control + PV				
11	Cut-away model of an asynchronous motor	Cut-away model of an asynchronous motor star/delta, 1/4 section, with closed terminal block, shaft end without coupling, mounted on rubber feet	Control Components		2
E	Machine Tools				
12	Table drilling machine incl. Table	Drilling capacity 15/18mm, spindle B16, drilling depth 75mm, distance column spindle 185mm, column dia 70 mm, table size 240x290mm, table height adjustment manually, speed indication Scale, drilling depth indication Scale, drill depth end stop quickly adjustable, end stop ring, feed manually, motor 230V 50Hz, 0,45 kw, Infinitely variable spindle speeds with indicator (display), spindle speeds 0-3600 1/min, Emergency off switch, Quickly adjustable end stop ring, No voltage release, Cable 2,5 m with schuko plug, Drill guard  1 pc spiral drill set HSS 25 parts 1-13,0 x 0,5 mm.	Machine Tool		3



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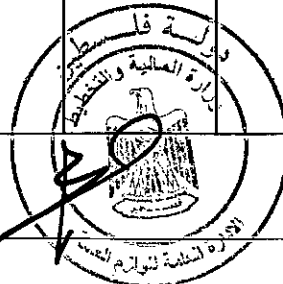
		<p>1 pc keyless drill chuck B 16/1-13 mm</p> <p>1 pc machine vice with prisms, opening 90 mm, jaw width 100 mm</p> <p>Machine lamp with bulb</p> <p>Table stand, designed for the table drilling machine: approx. L = 90 cm, W = 80 cm, H = 90 cm</p>			
13	Manual sheet metal folding machine 500mm	<p>Working width 500mm, sheet thickness 2mm,</p> <p>Quick clamping system for the bending blades</p> <p>Standard accessories; Bending blades, 45° bending blade for upper holder</p> <p>Tools for adjustment and maintenance</p>	Machine Tool		2
15	Manual Swing-Beam Shears	Plate thickness (max.) 2 mm; Working length 1.040 mm; Table dimensions 605x1.100 mm; solid cast-iron construction; adjustable cutting stop; counterweights	Machine Tool		2
16	Marking-off and surface plate with stand	DIN 876, accuracy level 1, made of special cast iron with ribs, Measuring surface finely hand-scraped, 500 x 400 mm	Machine Tool		1
17	Straightening plate with stand	Appr. 500 x 500 x 60mm, machined surface, cast iron, with stand	Machine Tool		1
18	Hacksaw machine	For sawing ferrous and non-ferrous metals; Hydraulic in-feed; Sawing range 90° round stock appr. 210mm; Flat stock appr. 210x210mm; Stroke numbers 50 – 160 1/min, 4 – 6 steps; Electric drive 230V, 50Hz; Cutting force adjustable; Trip switch; Saw blade size 350 x 35 x 2 mm;	Machine Tool		1





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		Accessories : Machine light with bulb; Stand (support) with roller and height adjustment for long bars; Stopper with measuring scale, 0 – 500 mm; Coolant equipment; 20 spare saw blades each, high speed steel 350 x 35 x 2mm; 6 teeth per inch, 8 teeth per inch and 10 teeth per inch; spares for appr. 2 years			
19	Anvil with support	two beaks (round and square); Appr. 125kg made from special steel; Hardened and surface ground top face, Face width appr. 130mm, length appr. 750mm, height appr. 350mm; Accessories: Anvil support made from cast iron, round shape with inserted end-grained wood, fitting the anvil	Machine Tool		1
20	High Speed PCB Drilling Machine	High Speed PCB Drilling Machine; For drilling prototypes and small batches of PCBs; The machine should be of a robust steel construction.  Throat depth: 115 mm; Motor 230 Volt; Infinitely adjustable 10000 ..... 30.000 RPM; Power output 90 Watts; Chuck: 1/8" (3,2mm); Drill size 0,6 to 3,2 mm; Adjustable stroke speed; Adjustable m/c tilting between 0 - 30; Lighting unit built-in; Complete system with integrated dust extraction; Including external vacuum cleaner; Including foot switch for easy operating. Including 5 sets of Carbide Drills for drilling PCBs; Two flutes, righthand turn; Diameter: 0.3 ... 3.0 mm in 0.1 mm increments	Machine Tool		2
21	PCB Board cutter	Cutting width max. 530 mm; Two knives made of hardened and ground steel; Spring loaded built-in clamping unit in the front; Transparent cover hood for user safety and visual control; Metric edge scales in the front; Fully adjustable back stop with metric scale for batch work (0...300 mm); Smallest cutting size (front) 45 mm; Durable full steel construction; All important parts angular adjustable; Simple exchange of blades; Adjustable cutting angle; Adjustable clearance	Machine Tool		2





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22	Lathe and Milling Machine	lathe : Distance between centers: 19 3/5"., Swing over bed: 16 1/2., Max. longitudinal travel: 17 3/10., Max. cross travel: 7 4/5., Spindle taper: M.T.4., Travel of tailstock barrel: 2 4/5. Taper of tailstock barrel: M.T.3., Spindle hole diameter: Ø1 1/10., Spindle speed: 160-1360r.p.m. (7steps)., Longitudinal lead screw pitch: 6T.P.I. or 0.16 inch., Thread can be cut: 4-120T.P.I./0.008-0.24 inch., Range of automatic feeding , with Accessories as Metal Lathe Mill 6 inch Face Plate, 10 PCS END MILL SET,TOOL HOLDER,TOOL BITS,tap	Machine Tool	1	
F	PCB Exercises				
23	Prototyping PCB CNC milling machine, - automatic tool change - incl. CAD-Software	milling workspace (X/Y/Z): 140 mm x 200 mm x 40 mm repeatability:0.02mm machine dimension: 380mmx460mmx290mm one step for the stepper motor:0.004mm spindle:brushless motor diameter of spindle:3.175mm USB connectivity maximum speed (x):170mm/min maximum speed (y):170mm/min maximum speed (z):170mm/min PCB prototype including Dust extraction including 4x extra - durable cutting bits including 2x allen keys including 4x retention clamps including software CAD/CAM,Software general features: Import: Gerber file (flat CAM ,copper CAM, Protel-PCB-Files Including: Laptop with all necessary software components Including complete documentation and manuals in English language.		1	
24	Set PCB Extension 32 pol	Plug-in board holder for Euro-format PCB 160mm x 100mm x 1.5mm, socket connector 32 pol., DIN EN 606603-2; 20 x Plug connector for PCB mounting 90 degree, 32 pol; 40 x PCB strips with hole arrangement Cu 35 u, 32,64,96 pol connection	machine Tool	18	
25	Set PCB Extension 64 pol	Plug-in board holder for Euro-format PCB 160mm x 100mm x 1.5mm, socket connector 64 pol., DIN EN 606603-2; 20 x Plug connector for PCB mounting 90 degree, 64 pol; 40 x PCB strips with hole arrangement Cu 35 u, 32,64,96 pol connection	Equipment	8	
26	Assembly Vice Spannfix-Vario	assembly vice with interchangeable screw-on work mounts. 5-piece set, consisting of: - Universal clamp mounting ball joint base	Equipment	15	





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		<ul style="list-style-type: none"> <li>- Screw-on mounting vice with interchangeable jaws</li> <li>- PC-board holder</li> <li>- Universal screw-on plate</li> <li>- Angular adapter</li> </ul>			
27	Rubber mat	<p>with honeycomb pattern w = 460 mm, d = 390 mm, 6 mm thick for soldering jobs, heat resistant, Static Dissipative top layer to drain static electricity, Grounding connector Lead-Free, industrial quality</p>	Equipment		20
G	Practice Wiring				
29	Punched hole panel 60 x 60	<p>Punched hole metal sheet with T-stand (left and right) for electrical installation exercises Size 60 cm x 60 cm, galvanized metal sheet, lacquered Punched holes must be technically alligned to the lab system &amp; local made is acceptable</p>	Piece		20
30	Punched hole panel 60 x 90	<p>Punched hole metal sheet with T-stand (left and right) for electrical installation exercises Size H = 60 cm, W = 60 cm, galvanized metal sheet, lacquered Punched holes must be technically alligned to items no. 53 and 54 local made is acceptable</p>	Piece		20
31	Set Installation Material	<p>Locally deployed set of installation material: On-Off Switch 2x; changeover switch 3x; two-way double-pole reversing switch 2x; 4x push button switch; 1x impulse relay; 1 phase sockets 230V/10A 3x; bulb sockets 3x; fuses 5x; sub distribution for 10 circuits; junction boxes 4x; connectors; tube lights short 2x; compact lights 2x; Set of material for bell signal circuits (low voltage): 3 x bell push button, 2 x bells, 1 x low voltage transformer 230V/9V 50Hz, signal wire 8 x 0.5 mm<sup>2</sup> 100m, 4 x junction boxes; 100m Installation cable NYM-J 3 x 1,5mm<sup>2</sup> 100m Installation cable NYM-J 5 x 1,5mm<sup>2</sup> Control wire 1,5 qmm Typ H05V-U &gt; black 1 x 500m &gt; blue 1 x 200m</p>	Piece		20





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		> green/yellow 1 x 200m 10m PVC cable trough 15 x 30 mm (residential wiring) 50 cable clamps 20mm			
H		Tools			
32	Tool Kit Basic	Hart-top case, Contents: Electrician screwdrivers 2.5 x 75, 3 x 100, 4 x 125 mm, 5 x 150 mm; ross slotted screwdrivers PH, size 1 and 2; Electronic screwdriverset, 7-pieces size 1.0 to 4.0 • Stripper for UTP/STP data cable; side cutters 160 mm; telephone pliers, bent, 200 mm; electronic side cutters, 115 mm; Crimping pliers for modular plugs 4/8 RJ45; soft-grip scissors, 140 mm; combination pliers, 180 mm; Wire stripper, hooked blade, 8 - 28 mm Ø; Cable stripping knife, 4 - 16 mm Ø; Automatic wire stripper, 0,2 - 6 mm <sup>2</sup> ; PUK pocket saw, fixed handle; „Bit box“, 17-pieces; Spirit level, 400 mm; Measuring tape, 3 m; • Voltage tester „Basic“; Sensor Tool LSA wire diameter 0.35 - 0.9mm strands diameter 0.7 -2.6 mm; Crimping plier for end sleeves 0.25 - 6mm;	Piece	20	
		<b>TOTAL</b>			

ويعتبر هذا التنويه جزء لا يتجزء من وثائق المناقصة وسيتم اعتماده عند تقييم المناقصة

دولة فلسطين  
وزارة المالية والتخطيط  
ناصر الخطيب  
مكلف بمهام مدير عام اللوازم العامة  
رئيس لجنة العطاءات المركزية  
مديرية اللوازم العامة