TECHNICAL SYSTEMS EDUCATION STEM CLUSTER ENGINEERING EQUIPMENT LIST

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Courses Equipment w/quantities	Foundations of Engineering	Engineering Systems	Engineering Applications	Engineering Research and Design	Cost Per Low	Cost Per High	Total Low	Total High
Drafting, Scales (Architect/ Engineer/ Metric)	12	12	12	12	4	<mark>?</mark>		
Drafting, Tool Kit/Compass/Protractor/Board	12	12	12	12	17	50	204	600
Safety, Safety Glasses	12	12	12	12	5	10	60	120
Computer peripheral, Surge protectors	6	6	6	6	10	20	60	120
Office, Computer Work Stations/adjustable tables w/wire management system	6	6	6	6	100	300	600	1800
Computers w/ monitors Capable of Running Industry Standard Software	6	6	6	6	500	1500	3000	9000
Software, Industry standard, Computer Aided Drafting (Installed On All Computers/Site License)	6	6	6	6	1000	6000		
Computer, Lap Top (Capable of Running Industry Standard Software)	2	2	2	2	500	1000	1000	2000
Precision Measurement, Calipers Vernier	2	2	2	2	75	150		
Precision Measurement, Dial Indicator	2	2	2	2	150	300		
Precision Measurement, Electronic, Digital Multimeter	2	2	2	2	50	200	100	400
Precision Measurement, Electronic, Gram Scales	2	2	2	2	50	100	100	200
Precision Measurement, Outside Micrometer	2	2	2	2	30	150	60	300
Storage, Lockable Storage/Supply	2	2	2	2	200	400	400	800
Computer peripheral, Color Laser Jet/Ink Jet Printer	1	1	1	1	300	500	100	000
Computer peripheral, Internet Connection (Installed On All Computers)	1	1	1	1	000	000		
Computer peripheral, LCD Projector	1	1	1	1	250	500		
Computer peripheral, Scanner/Copier/Printer (Combo)	1	1	1	1	100	300		
Instructional Technology, CD/DVD Player	1	1	1	1	100	250		
Instructional Technology, Digital Point and Shoot Camera (4 megapixel +)	1	1	1	1	75	200		
Instructional Technology, Television (minimum 27")	1	1	1	1	400	1000		
Safety, Eyewear Sterilization Cabinet	1	1	1	1	50	200		
Software, Industry standard, Desktop Publishing (Installed On All Computers/Site License)	1	1	1	1				
Software, Industry standard, Presentation (Installed On All Computers/Site License)	1	1	1	1				
Software, Industry standard, Word Processing (Installed On All Computers/Site License)	1	1	1	1				
Portable Power, Belt Sander			1		75	200		
Portable Power, Circular Saw			1		75	200		
Portable Power, Drill			1		75	150		
Portable Power, Router			1		100	200		
Software, Industry standard, Computer Aided			1	1	500	1000		
Machining				1	500	1000		
Stationary Power, CNC Mill			1		5000	15000	<u> </u>	
Stationary Power, Band Saw			1	1	200	10000		
Stationary Power, Drill Press			1		200	1500		
OPTIONAL								
Finishing, Spray Booth, Portable Small					250			
Hand tool, Vice, Drill Press/Machinist/Pipe								
Hand-tool, Bit Set, Router/Shaper/Panel								
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Hand-tool, Brush, Wire/Nylon/Natural Bristle					1	
Hand-tool, Builders Level w/Rod & Tripod						
Hand-tool, Chalk line						
Hand-tool, Chipping hammer						
Hand-tool, Chisels, Cold/Wood						
Hand-tool, Clamp, Bar/"C"/Spring/Hand Screw						
Hand-tool, Drill Bit, Metal/Wood/Spade/Counter Sink						
Hand-tool, Drivers, Torx/Nut						
Hand-tool, Feeler gauge						
Hand-tool, File, Rasp/Flat/Double Cut/Card						
Hand-tool, Gun, Heat/Stripping/Hot Glue						
Hand-tool, Hammer, Ball Peen/Claw/Sledge/Soft Face						
Hand-tool, Hex Wrench Set						
Hand-tool, Knife, Utility/Hobby						
Hand-tool, Level, Mason/Laser/Torpedo/Cabinet						
Hand-tool, Mallet, Rubber/Wooden/Leather						
Hand-tool, Nail Sets						
Hand-tool, Pipe Wrench/Reamer						
Hand-tool, Plane, Hand/Block/Rabbet/Cabinet						
Hand-tool, Pliers, Groove Joint/Needle Nose						
Hand-tool, Pliers, Lineman/Diagonal Cutting/Front Cut						
Hand-tool, Pliers, Locking/Crimping/Slip Joint						
Hand-tool, Propane Torch/Soldering Set						
Hand-tool, Punch, Center/Drift/Peening						
Hand-tool, PVC, Cutter/Reamer						
Hand-tool, Rivet Tool						
Hand-tool, Saw, Rip/Crosscut/Dovetail/Miter/Hack						
Hand-tool, Scissors						
Hand-tool, Screwdriver Set						
Hand-tool, Shovel, Round Point/Square Point/Post						
Hand-tool, Shureform						
Hand-tool, Socket Set, English/Metric						
Hand-tool, Soldering Iron/Heat Sinks						
Hand-tool, Square, Framing/Speed/Tri/Combo						
Hand-tool, Tap and Die Set						
Hand-tool, Tape Measure/Metal Rule/Marking Gauge						
Hand-tool, Tin Snips, Right/Left/Straight						
Hand-tool, Tongs						
Hand-tool, Wheelbarrow/Cart/Wagon						
Hand-tool, Wire Stripper/Crimper						
Hand-tool, Wrench, Box/Combination/Torque						
Instructional Technology, 3-D Printer						
Instructional Technology, Camera Tripod						
Instructional Technology, Computer Interactive Whiteboard						
Instructional Technology, Digital Video Camera						
Instructional Technology, GPS Handheld						
Instructional Technology, Head Phones						
Instructional Technology, Opaque Projector						
Instructional Technology, Projection Screen						
Instructional Technology, Wide Format Printer (24")		\rightarrow		+		
Lab equipment, Beaker						
Lab equipment, Calorimeter						
Lab equipment, Clay Modeling Table						
Lab equipment, Compass						
Lab equipment, Dynamometer				1	1	
Lab equipment, Fan				1	1	
Lab equipment, Graduated Cylinder						
Lab equipment, Heat Pulser						
Lab equipment, Hot Plate/Burner			1			

Lab aquipment Hydromator/Hydromator					
Lab equipment, Hydrometer/Hygrometer Lab equipment, Immersion Heater			 		
Lab equipment, Microscope/Magnifying Lens		-			
Lab equipment, Newton Spring Scale			 	 	
Lab equipment, Physics Air Track and Accessories					
Lab equipment, Prism/Mirror Set					
Lab equipment, Pulley/Gear					
Lab equipment, Signal Generator					
Lab equipment, Solar Cell					
Lab equipment, Spring Scale					
Lab equipment, Spring Test Assembly					
Lab equipment, Stopwatch					
Lab equipment, Weight set and holders					
Module, 2D/3D Modeling					
Module, Aerodynamics/Hydrodynamics					
Module, Agriculture Technology					
Module, Alternative Energy Sources					
Module, Aquaculture/Hydroponics					
Module, Architectural/Mechanical Drafting, Manual					
Module, Artificial Intelligence					
Module, Aviation/Air Transportation			 		
Module, Biotechnology/Genetics/Biomedical					
Module, Broadcasting/Communications					
Module, CNC Pneumatics			 		
Module, CO2 Dragsters/Transportation Modeling					
Module, Computer Aided Drafting (CAD)					
Module, Computer Aided Machining (CAM)					
Module, Computer Aided Sign Making					
Module, Computer Animation/Visualization			 		
Module, Computer Applications/Software Applications					
Module, Computer Construction/Repair					
Module, Computer Networks					
Module, Computer Numeric Control (CNC), Lathe/Mill					
Module, Computer Problem Solving					
Module, Construction Tech., Residential/Commercial					
Module, Control Technology					
Module, Conveyors & Sensors					
Module, Desktop Publishing					
Module, Digital Audio/Music					
Module, Digital Design					
Module, Digital Manufacturing					
Module, Digital Photography/Video					
Module, Drafting, Sketching/Instrument					
Module, Electrical Systems/ Electronics					
Module, Electromagnetism/Magnetism			 		
Module, Environmental Science					
Module, Global Positioning Systems			 		
Module, Hydraulics					
Module, Interactive Multimedia					
Module, Internet Resources					
Module, Landscape Design			 	 	
Module, Lasers/Fiber Optics					
Module, Machine Vision					
Module, Manufacturing/Automation					
Module, Materials and Processes	ļ				
Module, Materials Properties/Testing					
Module, Mechanisms/Mechanical Systems					
Module, Medical Technologies					
Module, Meteorology/Weather					

Modulo Microprocesoro	-							
Module, Microprocessors Module, Multimedia Technologies								
Module, Multimedia Technologies								
Module, Optics								
Module, Physics								
Module, Plant Science								
Module, Plastics Technologies								
Module, Pneumatics								ļ
Module, Power Mechanics/Small Engines								
Module, Precision Measurement								
Module, Process Control								
Module, Programmable Logic Circuits								
Module, Programming Theory								
Module, Quality Control								
Module, Radio/Audio Broadcasting/Communications								
Module, Research and Design								
Module, Residential Plumbing								
Module, Residential Wiring								
Module, Robotics								
Module, Rocketry/Aerospace								
Module, Semiconductors	1							
Module, Sensors	1	1						
Module, Solar Energy	1	1						
Module, Structural Engineering								
Module, Telecommunications								
Module, Thermodynamics								
Module, Transportation Systems								
Module, Video Production/Editing								
Module, Web Page Design								
Module, Welding								
Module, Wind Energy								
Module, Writing & Research								
Office, CD/DVD Storage case								
Office, Chairs/Stools								
Office, Desk, Student								
Office, Desk, Teacher								
Office, FAX Machine								
Office, Hole Punch								
Office, Locking File Cabinet					-	-	-	
Office, Photo Copier								
Office, Stapler								
Office, Tack Board								
Office, Telephone								
Office, Waste Basket								
Portable Power Supply, AC/DC Low voltage								
Portable Power, Air Compressor	-							
Portable Power, Air hose								
Portable Power, Air regulator								
Portable Power, Angle Grinder								
Portable Power, Finish Sander								
Portable Power, Heat Strip								
Portable Power, Jig Saw								
Portable Power, Miter Saw		Ι						
Portable Power, Pipe Die Set								
Portable Power, Pneumatic Finish Nail Gun	1	1						
Portable Power, Pneumatic Framing Nail Gun	1				1	1	1	
Portable Power, Scroll Saw	1			-				
Portable Power, Wet/Dry Vacuum	1	1						
Precision Measurement, Engineering transit with								
rod/tripod								
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Precision Measurement, Gauge blocks							
Precision Measurement, Hardness Tester							
Precision Measurement, Oscilloscope							
Precision Measurement, Set (complete)							
Precision Measurement, Thermometer							
Safety, Face shield							
Safety, First Aid Kit	1	1	1	1			
Safety, Hard Hat	-	-	1	1			
Safety, Ladder/Scaffolding							
Sensor, Infrared							
Sensor, Laser							
Sensor, Magnetic							
Sensor, Motion							
Sensor, Photo/Light							
Sensor, Pressure							
Sensor, Proximity							
Sensor, Sonic							
Sensor, Thermal							
Sensor, Vernier Force Sensor, Weight/Strain							
Software, Industry standard, Antivirus							
Software, Industry standard, Photo Editing							
Software, Industry standard, Physics Logging							
Stationary Power, CNC Lathe							
Stationary Power, CNC Router	-		-		-	-	
Stationary Power, Miter Saw	-		-		-	-	
Stationary Power, Pedestal Grinder/Buffer							
Stationary Power, Planer							
Stationary Power, Radial-arm Saw							
Stationary Power, Table Saw							
Stationary, Box and Pan Brake							
Stationary, Metal Shear							
Storage, Flammable Storage Cabinet							
Welding, Gloves/Jacket/Apron							
Welding, Hood/Goggles/Safety Glasses							
Welding, Metal Inert Gas Welder (MIG)							
Welding, Oxyacetylene welding/cutting outfit							
Welding, Resistance Electric Spot	<u> </u>						
Welding, Shielded Metal Arc Welder (SMAW)	<u> </u>						
Welding, Table							
Welding, Tungsten Inert Gas Welder (TIG)							
Work bench							