



# **Project Lead The Way<sup>®</sup>**

## **2007**

### **High School Program Equipment & Supply Inventory Guide**

**This document has been prepared to aid schools in determining what they already have on site and what they will need to purchase in order to effectively implement the high school program of study. The costs listed for each item reflect the costs that Project Lead The Way<sup>®</sup> has secured for their 2007 Purchasing Manual. The left hand column (“Have on Site”) has been provided to help you record those items that you currently have and will not need to order.**

## Computer Lab

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	5	A	20	Each	Desk Top Computer, See Specifications in the "Purchasing Manual Guidelines" file <b>Order 26 for Middle School</b>	\$987.00	\$19,740.00
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz , See Specifications in the "Purchasing Manual Guidelines" file	\$1,436.45	\$1,436.45
	15	A	1	Each	USB to Serial Port Adaptor Cable (for laptops) BAFO Technologies#BF-810	\$9.10	\$9.10
	20	A	4	Each	HP Design Jet 800 Plotter 42 Inch Model. 96 MB Memory with built-in HP Jetdirect 10/100 BASE-TX Network card, printer stand media bin, spindle power cord, ink cartridges, print heads <b>No Longer Valid, see below</b>	<del>\$4,285.94</del>	<del>\$4,285.94</del>
	20	A	1	Each	HP DesignJet 800 Plotter 42 inch Model, 96 MB Memory with built-in HP Jetdirect 10/100 Base-tx Network card, Printer stand media bin, spindle power cord ink cartridges, printheads	\$4,385.15	\$4,385.15
	25	A	1	Each	HP Laser Jet 5100 series Printer 615n-Fast Ethernet 10/100 Base -TX (required for Networking)	\$1,403.75	\$1,403.75
	30	A	1	Each	Flat Bed Scanner HP #8200 8 1/2 x 14 <b>Purchase either #30 or #35, not both</b>	\$396.95	\$396.95
	35	A	1	Each	HP Scanjet 5550c digital flatbed multiple page scanner <b>Purchase either #30 or #35, not both</b>	\$243.15	\$243.15
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon Cool Pix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	Compact Flash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB	\$8.50	\$8.50

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
					<b>For Optional Digital Camera</b>		
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	100	A	1	Each	Jump Drive, 256MB USB 2.0 Write speed 4.0MB or higher, Read 5.5 MB or higher. Minimum System Requirements: Windows 98SE/ME/2000/ XP, MAC OS X, MAC OS 8.6 or higher <b>Optional Storage Device</b>	\$9.44	\$9.44
	105	A	1	Media	MS Office Pro XP Including Access/Excel/PowerPoint/Word (Media Cost)	\$26.00	\$26.00
	110	A	1	20 Station License	MS Office Pro XP Including Access/Excel/PowerPoint/Word <b>Order for High School</b>	\$1,121.60	\$1,121.60
	115	A	1	26 Station License	MS Office Pro XP Including Access/Excel/PowerPoint/Word <b>Order for Gateway To Technology</b>	\$1,458.00	\$1,458.00
	1005	CS	2	Each	Ink Cartridges Black for HP 750C Design Jet Plotter #HP 51645A	\$23.87	\$47.74
	1010	CS	2	Each	Ink Cartridge Cyan for HP 750C Design Jet Plotter #HP 51644C	\$24.53	\$49.06
	1015	CS	2	Each	Ink Cartridge Magenta for HP 750C Design Jet Plotter #HP 51644M	\$24.53	\$49.06
	1020	CS	2	Each	Ink Cartridge Yellow for HP 750C Design Jet Plotter #HP 51644Y	\$24.53	\$49.06
	1025	CS	2	Each	Ink Cartridge Black for HP 800 Design Jet Printer HP#10 HP#C4844A	\$25.86	\$51.72
	1030	CS	2	Each	Ink Cartridge Cyan for HP 800 Design Jet Printer #HP82 #HP C4911A	\$29.18	\$58.36
	1035	CS	2	Each	Ink Cartridge Magenta for HP 800 Design Jet Printer #HP82 HP C4912A	\$29.18	\$58.36
	1040	CS	2	Each	Ink Cartridge Yellow for HP 800 Design Jet Printer #HP82 #HP C4913A	\$29.18	\$58.36
	1045	CS	1	Each	Toner Cartridge for HP LaserJet 5000N & 5100, #HP C4129X	\$129.59	\$129.59
	1050	CS	3	250/PK	20 Lb. Plotter Bond Non-Glossy 11" x 17" #5811-HR-5 (for 5000N Printer)	\$15.50	\$46.50
	1055	CS	8	Pkg	Alvin Ink Jet Bond, Vista 24# 24" x 50 Yds. (or Equivalent)	\$30.20	\$241.60
	3505	FN	10	Each	Particle Board Table with High Pressure Laminate with One-Inch Adjustable Height Increments (22" High to 30" High) with Dimensions of 30" x 60" Virco #8774 <b>Order 13 for Middle School</b>	\$160.75	\$1,607.50
	3510	FN	10	Each	Wire Management Panel to Fit Virco Computer Table #8774 Virco #WMP60 <b>Order 13 for Middle School</b>	\$9.35	\$93.50
	3515	FN	20	Each	Student Chair on Casters with Height Adjustability Only Virco #9260GC <b>Order 26 for Middle School</b> <b>Purchase either #3515 or #3520, not both</b>	\$116.79	\$1,167.90
	3520	FN	20	Each	Student Chair on Casters with Height, Tilt & Comfort Adjustability Virco #4501	\$168.97	\$3,379.40

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
					<b>Order 26 for Middle School</b> <b>Purchase either #3515 or #3520, not both</b>		
	3525	FN	10	Each	Plywood Folding Table with 3/4 High Pressure Laminated Plastic Top with Fixed Height of 30" & with Backing Sheet with Dimensions of 30" X 96" Virco #62308	\$153.22	\$1,532.20

### COMPUTER REQUIREMENTS

Project Lead The Way<sup>®</sup>, working with its vendors, will specify computers each year that we estimate will run our course software for the next three years.

Many schools have developed policies under which new, more powerful computers are placed in PLTW labs, and the existing computers are moved to areas with less demanding applications. In doing this, they insure the longest useful performance of their computers.

**Computers should meet or exceed the specifications stated here:**

#### DESKTOP

Intel Dual Core P4 – 840 or better 800 MHz FSB 2X1MB L2 Cache Or AMD Dual Core Opteron 285 or better 2MB L2 Cache	2 GIG or more DDR2 SDRam Memory with room to upgrade
Keyboard	Optical Mouse with Wheel
80 + GB (7200 RPM) SATA Hard Drive	Anti-Virus software
CD or optional CDRW/DVD drive	Win XP Pro (32 or 64 bit)
PCI-express x16 Video card with a minimum 256 Megs RAM on board (Must be 3D CAD Compatible Support OpenGL and DirectX 9) See <a href="http://www.autodesk.com/us/inventor/graphic_cards/">http://www.autodesk.com/us/inventor/graphic_cards/</a>	3 year Warranty
Integrated LAN connection	17" SVGA 1280X1024 Color Monitor or optional flat screen
4 USB Ports Minimum - Version 2.0	16-Bit Sound Card (minimum)

#### LAPTOP

Each teacher participating in training and teaching Project Lead The Way<sup>®</sup> courses is required to have a laptop computer for his/her use. Teachers should have Administrator rights on their computer. Specifications for new laptops are as follows:

Intel Pentium M 760 (2 MB cache, 533Mhz FSB or better Or Core Duo Processor T2500 or better	USB Memory Key (Memory Stick, Thumb Drive, etc.)
2 GIG DDR2 SDRAM Memory (option for additional)	Integrated 100 Mbps Fast Ethernet connection
60 GB + 7200 RPM SATA Hard Drive	External VGA Port
DVD-CDRW Drive	2 - USB Ports Minimum
14.1 XGA TFT Color LCD Display	Anti Virus software
Li-Ion Battery	Win XP Pro 3 Year Warranty

256 on board MB PCI-express x16 Graphics card (Must be 3D CAD Compatible Support OpenGL and DirectX 9) See <a href="http://www.autodesk.com/us/inventor/graphic_cards/">http://www.autodesk.com/us/inventor/graphic_cards/</a>	
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For further details about graphics cards, see Autodesk's website [http://www.autodesk.com/us/inventor/graphic\\_cards/](http://www.autodesk.com/us/inventor/graphic_cards/)

PLEASE NOTE: Basic Intel graphic chipset and SiS graphic chipsets or other chipsets with shared memory are **not** recommended for video display. All graphic chipsets must be 3D capable and support OpenGL. A third party Graphic card is usually necessary.

### **BARE MINIMUM SPECS TO RUN INVENTOR FOR 2007**

Minimum system requirements should not be used to purchase equipment; rather, they are provided to evaluate existing equipment for use with Inventor.

Minimum hardware required to run (Not recommended for production use).

Intel Pentium® or AMD Athlon Processor 1.6 GH or better

3.5 GB Free (minimum install) Hard Drive Space

1 GB Scratch "Temp" space

512 MB RAM

2-4 Gigs Virtual Memory Space

64+ MB OpenGL Capable Graphics Card

Windows 2000 Pro with Service Pack 4 operating system

Internet Explorer 6 with latest service packs

# **Foundation Courses**

**Introduction to Engineering (IED)**

Have on Site	Item #	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
			1	Each	20 station Computer Laboratory as specified in the <a href="#">Computer Laboratory</a> Specifications Section. Adjust the quantity accordingly to reflect your actual class size.		
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz, See Specifications in the " <a href="#">Purchasing Manual Guidelines</a> " File	\$1,436.45	\$1,436.45
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	CompactFlash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>For Optional Digital Camera</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	100	A	1	Each	Jump Drive, 256MB USB 2.0 Write speed 4.0MB or higher, Read 5.5 MB or higher. Minimum System Requirements: Windows 98SE/ME/2000/ XP, MAC OS X, MAC OS 8.6 or higher <b>Optional Storage Device</b>	\$9.44	\$9.44
	1080	CS	2	Ream	Isometric Graph Paper, 8 1/2" X 11", 1/4" Isometric Squares	\$40.13	\$80.26
	1085	CS	2	Ream	Graph Paper, 1/10th Inch Squares, 8 1/2" X 11"	\$49.00	\$98.00
	1090	CS	2	Pkg/10 00	3/4" Square Wooden Craft Blocks	\$65.00	\$130.00
	1215	CS	20	Each	Paper Covered Ridged Foam Board, 3/16" x 12" 36"	\$1.80	\$36.00
	1305	CS	1	Pkg/5	Replacement Blade for X-Acto Knife #32-6892	\$1.32	\$1.32
	1325	CS	1	Pint	Carpenter's Wood Glue, Elmers #E702	\$3.24	\$3.24
	1330	CS	10	Each	Quick Dry Tacky Glue, 4 oz. Kelvin #930048	\$2.61	\$26.10
	1335	CS	10	Each	Lo-Temp Glue Sticks, 1/2" x 4" Long	\$2.49	\$24.90
	3540	FN	1	Each	Safety Glass Cabinet, Capacity 25 Glasses & 10 Goggles, With Sterilization Light & Timer	\$406.10	\$406.10
	4005	GT	25	Each	Safety Glasses with Side Shields & Adjustable Temple #11782 Phoenix Edge-Black TM-53	\$0.90	\$22.50

Have on Site	Item #	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	4050	GT	13	Each	12" Rigid Rule with 8ths and 16ths Front 64ths and 32nds Opposite Face, Stainless Steel	\$8.90	\$115.70
	4060	H	5	Each	Engineer's Scale, 10Parts/Inch	\$7.15	\$35.75
	4085	GT	1	Each	0-1" Micrometer, accuracy to .001"	\$13.25	\$13.25
	4090	GT	20	Each	6" Steel Dial Calipers, graduated in .001, White faced Dial	\$10.30	\$206.00
	4105	GT	1	Each	Divider, 6" Capacity, Quick Release Nut	\$7.25	\$7.25
	4265	GT	5	Each	Proedge Knife No. 6, MFG #15060	\$3.66	\$18.30
	4280	GT	5	Each	Cutting Mats, Self-Healing, 12" X 18" Kelvin #470079	\$8.80	\$44.00
	4570	GT	10	Each	Lo-Temp Full Size 110 Volt Glue Gun with 12" Glue Sticks	\$5.20	\$52.00
	6060	SE	1	Each	Laser Engraver, Work Area 24" X 12" Maximum Part Size 29" Wide X 17" Deep X 9" Thick. Resolution of a maximum of 1,000 X 1,000 DPI Computer Interface-Parallel Port compatible with Windows 2000 & XP Professional <b>OPTIONAL EQUIPMENT</b> <b>Note: may require exterior venting</b>	\$12,890.00	\$12,890.00
	6065	SE	1	Each	Rapid Prototyping Machine Maximum Part Size 8" X 8" X 6" minimum. Include Specifications with bid. <b>OPTIONAL EQUIPMENT</b> <b>Note: may require exterior venting</b>	\$16,500.00	\$16,500.00
			5	Set	Assorted Markers – Obtain through School General Supply		
			1	Each	Rolling White Board – Obtain Locally <b>OPTIONAL</b>		
			1	Each	Paper Cutter - Obtain through School General Supply		
			20	Each	Scissors - Obtain through School General Supply		
			1	Each	Three Hole Punch - Obtain through School General Supply		
			10	Each	1" Wide Masking Tape - Obtain through School General Supply		
			2	Each	Duct Tape – Obtain Locally		

## Principles of Engineering (POE)

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
					Principles of Engineering will need substantial access to a computer laboratory as specified in the <a href="#">Computer Laboratory</a> section. Refer to the " <a href="#">Purchasing Manual Guidelines</a> " file for scheduling suggestions that could eliminate the need to purchase a second Computer Laboratory		
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz, See Specifications in the " <a href="#">Purchasing Manual Guidelines</a> " File	\$1,436.45	\$1,436.45
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	CompactFlash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>For Optional Digital Camera</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	100	A	1	Each	Jump Drive, 256MB USB 2.0 Write speed 4.0MB or higher, Read 5.5 MB or higher. Minimum System Requirements: Windows 98SE/ME/2000/ XP, MAC OS X, MAC OS 8.6 or higher <b>Optional Storage Device</b>	\$9.44	\$9.44
	1060	CS	1	Box/5	Ink Ribbon for Digimatic Mini-Processor Model #DP-1HS <b>Do not order for model #DP-1VR</b>	\$60.00	\$60.00
	1065	CS	1	Box/10	Paper for Digimatic Mini-Processor Model #DP-1HS <b>Do not order for model #DP-1VR</b>	\$44.00	\$44.00

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	1070	CS	1	Pkg/10	Thermal Paper for Digimatic Mini-Processor #DP-1VR <b>Do not order for model #DP-1HS</b>	\$116.00	\$116.00
	1240	CS	5	Each	Alloy Free Cutting Round Aluminum Rod 1/4" Diameter, 6' Lengths #6061 T6 <b>Order this item or item #1255, not both</b>	\$9.90	\$49.50
	1245	CS	5	Each	Alloy Free Cutting Round Brass Rod 1/4" Diameter, 6' Lengths, #CDA360 <b>Order this item or item #1260, not both</b>	\$18.95	\$94.75
	1250	CS	5	Each	1018 Carbon Steel Rod 1/4" Diameter, 6' Lengths <b>Order this item or item #1265, not both</b>	\$7.00	\$35.00
	1255	CS	10	Each	Tensile Test Sample, Aluminum <b>Order this item or item #1240, not both</b>	\$3.50	\$35.00
	1260	CS	10	Each	Tensile Test Sample, Brass <b>Order this item or item #1245, not both</b>	\$3.50	\$35.00
	1265	CS	10	Each	Tensile Test Sample, Steel <b>Order this item or item #1250, not both</b>	\$3.50	\$35.00
	1305	CS	1	Pkg/5	Replacement Blade for X-Acto Knife #32-6892	\$1.32	\$1.32
	3010	FT	5	Kit	Fischertechnik's Principles of Engineering Kit ( <a href="#">Click for Description and Parts List</a> )	\$ 1475.95	\$7379.75
	3015	FT	5	Kit	Fischertechnik's Principles of Engineering Supplemental Kit ( <a href="#">Click for Description and Parts List</a> ) <b>OPTIONAL KIT</b>	\$94.95	\$474.75
					<a href="#">Click for a list of all optional Fischertechnik Kits and parts lists</a>		
	3530	FN	13	Each	Storage Organizer with Adjustable Dividers (13.2" X 18.8" X 3") Grainger #3KN85	\$22.90	\$297.70
	3540	FN	1	Each	Safety Glass Cabinet, Capacity 25 Glasses & 10 Goggles, With Sterilization Light & Timer	\$406.10	\$406.10
	4005	GT	25	Each	Safety Glasses with Side Shields & Adjustable Temple #11782 Phoenix Edge-Black TM-53	\$0.90	\$22.50
	4050	GT	13	Each	12" Rigid Rule with 8ths and 16ths Front 64ths and 32nds Opposite Face, Stainless Steel	\$8.90	\$115.70
	4085	GT	1	Each	0-1" Micrometer, accuracy to .001"	\$13.25	\$13.25
	4090	GT	20	Each	6" Steel Dial Calipers, graduated in .001, White faced Dial	\$10.30	\$206.00
	4095	GT	1	Set/3	3-Piece Telescoping Gauge Set Starrett #12-2138	\$69.90	\$69.90
	4100	GT	1	Each	Mitutoyo Screw Pitch Gauges Inch/ Metric 51 Leaves Model #MT1-88151C	\$42.00	\$42.00
	4105	GT	1	Each	Divider, 6" Capacity, Quick Release Nut	\$7.25	\$7.25
	4110	GT	1	Each	Caliper, Outside, 6" Capacity, Quick Release Nut	\$7.25	\$7.25
	4115	GT	1	Each	Caliper, Inside, 6" Capacity, Quick Release Nut	\$7.25	\$7.25
	4265	GT	5	Each	Proedge Knife No. 6, MFG #15060	\$3.66	\$18.30

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	4685	GT	1	Each	Portable Compressor, 5 gal. Tank, Single Cylinder, Single Stage, Oil Free Pump, 110/120 volt Motor Delivery 2 hp, Direct Connection (no belts) With a Minimum of 3.5 cfm at 40 psi & a Minimum of 120psi Maximum Delivery Pressure, with regulator	\$204.00	\$204.00
	4690	GT	1	Each	Air Compressor Hose, 25' Long X 1/4" ID, 200 psi Working Pressure, with NPT 1/4" 2 Swivel Male Fittings	\$16.90	\$16.90
	4692	GT	1	Each	Compressor Accessory Kit, 1 Blow gun, 1 male hose end, 1 male hose mender, 1 female air chuck, 2 female coupler bodies, 3 male coupler plugs, 2 female coupler plugs, 1 tire gauge, 1 adapter, 1 inflator pin, pin & adapter. All are 1/4" NPT Paxton Paterson # 20-2402	\$33.00	\$33.00
	6030	SE	1	Each	Digimatic Portable Mini-Processor & Caliper package, Including: DP-1VR Portable Digimatic Mini-Processor, 500-171 6"/150mm Digimatic Caliper, 80" SPC connecting cable J&L Catalog #MT2-99996K Manufacturer-Mitutoyo	\$520.00	\$520.00
	6060	SE	1	Each	Laser Engraver, Work Area 24" X 12" Maximum Part Size 29" Wide X 17" Deep X 9" Thick. Resolution of a maximum of 1,000 X 1,000 DPI Computer Interface-Parallel Port compatible with Windows 2000 & XP Professional <b>OPTIONAL Note: may require exterior venting</b>	\$12,890.00	\$12,890.00
	6065	SE	1	Each	Rapid Prototyping Machine Maximum Part Size 8" X 8" X 6" minimum. Include specifications with bid. <b>OPTIONAL Note: may require exterior venting</b>	\$16,500.00	\$16,500.00
	6068	SE	2	Kit	Economatics/PLTW Pneumatics Kit	\$2,499.00	\$4,998.00
	6070	SE	1	Each	Structure Stress Analyzer complete with Safety Enclosure, Windows Based Software, and Operating Manual-	\$3,210.00	\$3,210.00
	6072	SE	!	Each	Spanish up-grade for the Structural Stress Analyzer <b>OPTIONAL</b>	\$550.00	\$550.00
	6075	SE	1	Each	Tensile Tester Adapter for Structural Stress Analyzer-	\$375.00	\$375.00
	6080	SE	1	Each	Top Loading Adapter for Structural Analyzer- National Instruments Multifunction Data Acquisition for USB -1 for every 2 students -For use with LabView software	\$98.00	\$98.00
	6175	I	10	Each	<a href="#">-Click for Description</a> <b>OPTIONAL</b>	\$189.00	\$1890.00

## Digital Electronics (DE)

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
					Digital Electronics will need substantial access to a computer laboratory as specified in the <a href="#">Computer Laboratory</a> section. Refer to the " <a href="#">Purchasing Manual Guidelines</a> " file for scheduling suggestions that could eliminate the need to purchase a second Computer Laboratory		
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz See Specifications Appendix C	\$1,436.45	\$1,436.45
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	Compact Flash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>For Optional Digital Camera</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	100	A	1	Each	Jump Drive, 256MB USB 2.0 Write speed 4.0MB or higher, Read 5.5 MB or higher. Minimum System Requirements: Windows 98SE/ME/2000/ XP, MAC OS X, MAC OS 8.6 or higher <b>Optional Storage Device</b>	\$9.44	\$9.44
	1100	CS	1	Each	200-Foot #22 Wire, Solid Red	\$4.60	\$4.60
	1105	CS	1	Each	200-Foot #24 Wire, Solid, Red	\$6.75	\$6.75
	1125	CS	1	Each	200-Foot #22, Solid, Blue	\$4.30	\$4.30
	1132	CS	1	Each	200-Foot #22 Wire, Solid, Black	\$4.60	\$4.60
	1135	CS	1	Each	200-Foot Spool #22 Solid Wire, Yellow	\$6.95	\$6.95
	1145	CS	2	Each	Rosin Core Solder ( 1/16" Diameter, 1 Lb. Spool)	\$5.25	\$10.50
	1150	CS	2	Each	Rosin Core Solder (3/32" Diameter 1Lb. Spool)	\$6.25	\$12.50

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	2005	EC	2	Kit	Capacitors & Resistors Kit (See Attached Parts List in Appendix A)	\$87.00	\$174.00
	2010	EC	2	Kit	Integrated Circuits Kit ( See Attached Parts List In Appendix A)	\$535.00	\$1,070.00
	2015	EC	200	Each	IC - 555 Timer #SR-555IC	\$0.11	\$22.00
	2020	EC	75	Each	IC - OP Amp 741 Dip 8 Pin Mouser Electronics #511-UA741CN	\$0.12	\$9.00
	2025	EC	75	Each	Audio Power Amp 386 Dip -8 Mouser Electronics #513-NJM38	\$0.16	\$12.00
	2030	EC	25	Each	IC 74194 (4Bit Bi-Directional Universal Shift Register) #SR- 74194IC	\$0.85	\$21.25
	2035	EC	25	Each	IC 74138 (1- of - 8 Decoder Demultiplexer) #SR-74138IC	\$0.15	\$3.75
	2040	EC	25	Each	IC 74190 (Decade- Divide by Symbol 10) Up/Down SR-74190IC	\$1.30	\$32.50
	2045	EC	25	Each	IC 74293 (4-Bit Binary Counter) #SR-74293IC	\$0.90	\$22.50
	2050	EC	50	Each	IC MAN 6760 ( Seven Segment Display) #SR-MAN 6760IC	\$0.35	\$17.50
	2055	EC	75	Each	IC-OP Amp LM 324, Mouser Electronics #511-LM324D	\$0.12	\$9.00
	2060	EC	25	Each	Transistor, 2N3904 NPN	\$0.03	\$0.65
	2070	EC	25	Each	Dual H-Bridge Driver 3A #L-298N	\$2.25	\$56.25
	2075	EC	25	Each	Dual H-Bridge Driver 754410	\$1.25	\$31.25
	2125	EC	75	Each	Trimming Potentiometer 1 Meg, Horizontal Kelvin #110123	\$0.23	\$17.25
	2130	EC	64	Each	Trimming Potentiometer 100 K, Horizontal Kelvin #110073	\$0.23	\$14.72
	2135	EC	25	Each	10K Ohm Potentiometer Jameco #94713	\$0.23	\$5.75
	2140	EC	25	Each	1K ohm Potentiometer Jameco #94692	\$0.23	\$5.75
	2160	EC	50	Each	Diode IN4001	\$0.02	\$1.00
	2165	EC	25	Each	4.3 Volt, 1 W, Zener Diode	\$0.04	\$1.00
	2170	EC	25	Each	Relay 5 Volt Coil SPST Contacts, 1A, 5V, 125V AC, 250 Ohm Kelvin #410008	\$0.60	\$15.00
	2175	EC	25	Each	Opto-Coupled Isolator Module #H21A1	\$0.54	\$13.50
	2180	EC	500	Each	Green Light Emitting Diode	\$0.03	\$12.50
	2185	EC	500	Each	Red Light Emitting Diode #SR-RLED	\$0.02	\$10.00
	2190	EC	1	Pg	LED Assorted Kelvin #840485	\$46.00	\$46.00
	2200	EC	50	Each	Thermistor 10K Ohm Kelvin #110098	\$0.25	\$12.50
	2210	EC	25	Each	Cds Photocell, 1.5 Ohm Kelvin #260018	\$0.30	\$7.50
	2215	EC	25	Each	Stepper Motor 5 Volt, Bipolar #5VDC 350MA	\$3.60	\$90.00
	2225	EC	25	Each	Motor 5 Volt DC, 2mm Shaft	\$0.45	\$11.25
	2230	EC	65	Each	Speaker 2" Dia. 8 Ohm Kelvin #350009	\$0.25	\$16.25
	2235	EC	25	Each	Piezoelectric Buzzer 5 Volt	\$1.10	\$27.50
	2505	EE	2	Each	#75 Digital Multimeter with Leads	\$18.20	\$36.40
	2510	EE	13	Each	Multimeter Digital Model 100LE Kelvin #990087	\$4.65	\$60.45
	2515	EE	1	Each	Oscilloscope 20 Mhz Dual Trace Kelvin #740085	\$245.00	\$245.00
	2520	EE	1	Each	Programmer, Needham Model Emp-11, Windows Based RSR Electronic #01EP11	\$234.00	\$234.00
	2525	EE	25	Each	Lattice 24-Pin CMOS Programmable Electronically Erasable Logic Device #GAL22VIOD	\$1.75	\$43.75
	2530	EE	1	Each	Logic Probe #B&K DP21	\$10.35	\$10.35

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	2540	EC	10	Each	PLTW/Parallax 910-28132 - "Boe-Bot" Microcontoller Robotic Kit, Manuals, Serial Connection with Free USB Adapter <b>(Order 4 or less at: \$149.00/each)</b> <b>(Order 5+ at: \$134.00/each)</b>	\$134.00	\$1340.00
	2550	EE	13	Each	Electronic Breadboard Trainer in a Briefcase Martek #XK-700	\$107.20	\$1,393.60
	2555	EE	25	Each	Solderless Breadboard 2.4K TP Co. (1Breadboard per 2 Students)	\$7.25	\$181.25
	2560	EE	1	1	Perf Board, One Solder Per hole (one side) Like Radio Shack #276-147A or All Electronics #ECS-1	\$3.50	\$3.50
	2585	EE	20	Each	Weller SP-23 Soldering Iron 25 Watt	\$3.60	\$72.00
	2590	EE	20	Each	Soldering Iron Holder Kelvin #830010 (1 for Each Iron)	\$1.25	\$25.00
	3540	FN	1	Each	Safety Glass Cabinet, Capacity 25 Glasses & 10 Goggles, With Sterilization Light & Timer	\$406.10	\$406.10
	4005	GT	25	Each	Safety Glasses with Side Shields & Adjustable Temple #11782 Phoenix Edge-Black TM-53	\$0.90	\$22.50
	4015	GT	1	Each	Magnifying Lens Xlite #RSR060439100	\$29.60	\$29.60
	4125	GT	1	Each	Nut Driver Set Xlite #RSR0601ps120	\$23.50	\$23.50
	4200	GT	20	Each	4.5-Inch Needle Nose Pliers ( Crescent or Channel Lock) CL#43	\$0.90	\$18.00
	4215	GT	20	Each	4.5-Inch Diagonal Cutter (Crescent or Channel Lock) CL #41	\$0.90	\$18.00
	4235	GT	8	Each	Xcelite 103-S Wire Stripper	\$1.15	\$9.20
	4405	GT	1	Each	Dremel High Speed Drill Set 1/32 - 1/8 Kelvin #490050	\$9.20	\$9.20
	4500	GT	1	Each	Needle File Set Xlite #RSR0604451P	\$2.20	\$2.20
	4727	GT	1	Each	Drill Press, Bench Top Model, 8" , 5 spindle speeds, 0 - 1/2" Jacobs Chuck with Chuck key, 1/4 H.P 1P 115V Delta #DP200	\$114.40	\$114.40

# **Specialization Courses**

The following are specialization courses. Schools are required to offer at least one specialization course. Schools may choose to offer both courses should they choose to do so.

## Aerospace Engineering (AE)

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz, See Specifications in the " <a href="#">Purchasing Manual Guidelines</a> " File	\$1,436.45	\$1,436.45
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	Compact Flash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>For Optional Digital Camera</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	1255	CS	10	Each	Tensile Test Sample, Aluminum	\$3.50	\$35.00
	1260	CS	10	Each	Tensile Test Sample, Brass-	\$3.50	\$35.00
	1265	CS	10	Each	Tensile Test Sample, Steel	\$3.50	\$35.00
	1305	CS	1	Pkg/ 5	Replacement Blade for X-Acto Knife #32-6892	\$1.32	\$1.32
	1325	CS	1	Pint	Carpenter's Wood Glue, Elmers #E702	\$3.24	\$3.24
	1450	CS	2	Pkg/ 25	Sandpaper, Aluminum Oxide, 9" X 11" Sheets, 220 Grit	\$5.25	\$10.50
	1615	CS	5	PK	Fin Stock, 20 3/32 X 3 X 6, AC Supply #FIN 100	\$6.35	\$31.75
	1620	CS	2	Pkg/ 12	Bulk pack of Alpha rocket kits, AC Supply#1756	\$54.24	\$108.48
	1625	CS	1	Pkg/ 24	Bulk Pack of B6-4 Estes Model Rocket Engines, AC Supply # 1783	\$36.27	\$36.27
	1630	CS	1	Pkg/ 24	Bulk pack of C6-5 Estes Model Rocket Engines, AC Supply #1789	\$41.74	\$41.74
	1635	CS	2	Pkg/ 3	D12-3 Estes Model Rocket Engines, AC Supply #1666	\$8.01	\$16.02
	1640	CS	4	Pkg/ 6	Model Rocket Igniters, AC Supply #2301	\$3.15	\$12.60
	1645	CS	1	Quart	West Epoxy System resin Wicks Aircraft Supply #105-A	\$90.00	\$90.00
	1650	CS	1	Bottle	West Epoxy System hardener, Wicks Aircraft Supply #206-A	\$45.00	\$45.00

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	1655	CS	1	Set	Resin pumps, ABC combination set, Wicks Aircraft Supply #300	\$15.00	\$15.00
	1660	CS	1	Roll	Fiberglass tape, 2" X 50yds, Woven from 8.7 oz bidirectional cloth Wicks Aircraft Supply #2X50-FGT	\$21.95	\$21.95
	1665	CS	20	Foot	Non-woven unidirectional reinforcement tape, 12" wide, 8.1 OZ SQ/YD, Wicks Aircraft Supply #275 S-2	\$3.00	\$60.00
	1670	CS	1	Box/500	Tongue Depressors, 5/8" wide X 5-1/2" long Wicks Aircraft Supply #805	\$8.90	\$8.90
	1675	CS	1	Pkg/100	Epoxy Mix Cups, 8oz leak-resistant polyethylene lines Wicks Aircraft Supply # 8SN1	\$18.90	\$18.90
	1730	CS	1	Pkg/24	Extra strong Model Cement for week, 5/8 oz., AC Supply #TES3505	\$37.00	\$37.00
	1735	CS	10	Each	Super Glue, 2 grams, Kelvin #930019	\$0.83	\$8.30
	2540	EC	10	Each	PLTW/Parallax 910-28132 - "Boe-Bot" Microcontoller Robotic Kit, Manuals, Serial Connection with Free USB Adapter (Order 4 or less at: \$149.00/each) (Order 5+ at: \$134.00/each)	\$134.00	\$1340.00
	3540	FN	1	Each	Safety Glass Cabinet, Capacity 25 Glasses & 10 Goggles, With Sterilization Light & Timer	\$406.10	\$406.10
	4005	GT	25	Each	Safety Glasses with Side Shields & Adjustable Temple #11782 Phoenix Edge-Black TM-53	\$0.90	\$22.50
	4050	GT	13	Each	12" Rigid Rule with 8ths and 16ths Front 64ths and 32nds Opposite Face, Stainless Steel	\$8.90	\$115.70
	4090	GT	20	Each	6" Steel Dial Calipers, graduated in .001, White faced Dial	\$10.30	\$206.00
	4265	GT	5	Each	Proedge Knife No. 6, MFG #15060	\$3.66	\$18.30
	4590	GT	4	Each	C-Clamp, 6" Max, Opening, Jorgensen #106	\$4.68	\$18.72
	4895	GT	2	Each	Altitrack, AC Supply #2232	\$17.48	\$34.96
	4905	GT	1	Kit	Ester Oracle Video Rocket, with video nose cone, including video software and cable, AC Supply #2187	\$81.40	\$81.40
	4910	GT	2	Each	Catapult construction kit (to make 1 catapult) AC Supply #Mid 7152	\$21.25	\$42.50
	4915	GT	1	Each	Hobbico Field Pack Deluxe Kit, Tower Hobbies #LXL421	\$59.00	\$59.00
	4920	GT	3	Each	Rocket Builder's Marking Guide, AC Supply #2227	\$7.13	\$21.39
	4925	GT	1	Each	Porta- Pad II Launch Pad, AC Supply #2215	\$17.40	\$17.40
	4930	GT	1	Each	"E" Launch Controller AC Supply #2230	\$21.39	\$21.39
	4935	GT	1	Each	Rocket Engine Test Bracket, accommodated size A, B, C and D engines, PASCO #ME-6617	\$55.00	\$55.00
	4940	GT	3	Each	Rocket Builder's Marking Guide, AC Supply #2227	\$7.13	\$21.39
	4945	GT	1	Each	Kut-master foam cutting frames 2FT Constructed of 1-1/8" O.D. aluminum, tubing, 2 foot length, Cutting depth is 11 inches, Aircraft Spruce and Specialty #01-15200	\$180.00	\$180.00

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	4950	H	1	Each	Swann MicroCam Wireless Security Camera Model: 49-1135, Radio Shack #49-1135	\$99.99	\$99.99
	4955	GT	1	Each	Great Planes Ultra E-Box Electric Flight Field Box, two handle design, cutouts for tools and supplies, dimensions: 18.6L X 9.1W X 12.0H, Tower Hobbies #LXJBU2	\$50.00	\$50.00
	4960	GT	1	Each	Hobbico SuperStar EP ARF airplane with ailerons, battery, landing gear with wheels, motor, pushrods, ailerons, instruction manual and Futaba 4YF radio system. Tower Hobbies #LXJKU3	\$315.00	\$315.00
	4965	GT	2	Each	Great Planes 7-Cell 2100mAh Flat NiCd Battery Pack, Tower Hobbies #LXBNC4	\$27.00	\$54.00
	4968	GT	1	Each	Great Planes RealFlight Rc Flight Simulator, G3 w/USB InterLink Plus Mofe 2, with Windows PC disc, Tower Hobbies #LXHxV6	\$250.00	\$250.00
	4970	GT	1	Each	Hobbico TorqMaster LC 12V Amp Battery, Tower Hobbies #HCAP0800	\$24.00	\$24.00
	4972	GT	1	Each	Hobbico 12 Volt Charger U/L Lsted, Tower Hobbies #LXL353	\$15.00	\$15.00
	4973	GT	1	Each	Hobbico Quick Field DC Charger, MkII, 12 volt Tower Hobbies #LXCTZ5	\$68.00	\$68.00
	6070	SE	1	Each	Structure Stress Analyzer complete with Safety Enclosure, Windows Based Software, and Operating Manual- <b>Note: This item should have already been purchased for POE</b>	\$3,210.00	\$3,210.00
	6072	SE	1	Each	Spanish up-grade for the Structural Stress Analyzer <b>OPTIONAL</b>	\$550.00	\$550.00
	6075	SE	1	Each	Tensile Tester Adapter for Structural Stress Analyzer- <b>Note: This item should have already been purchased for POE</b>	\$375.00	\$375.00
	6080	SE	1	Each	Top Loading Adapter for Structural Analyzer- <b>Note: This item should have already been purchased for POE</b>	\$98.00	\$98.00
	6150	SE	1	Each	Microsoft Flight Simulator 2004, ASIN #B000096KDT, Video card required	\$62.65	\$62.65
	6155	SE	1	Each	Flight Sim Yoke, 5 axes of control, throttle lever, propeller lever, and mixture lever, 20 button functions including, 2-way gear switch, 2-way flaps switch, 8-way hat switch, two 2-way rocker switches, and 4 push buttons, with Cables and compatible to Pro Pedals, USB Connection	\$137.70	\$137.70
	6160	SE	1	Each	Pro Pedals (Rubber Pedals), With differential toe brake support and a gas/break function, USB Connection	\$132.95	\$132.95
	6165	SE	1	Each	Force Sensor overload stop, -50N to +50N range with 0.03N (3.0 grams) resolution, Digital zero up to +/- 50N PASCO #PS-2104	\$108.09	\$108.09
	6170	SE	1	Each	PLTW Jet Stream 500 Wind Tunnel Package	\$4,795.00	\$4,795.00
	6175	I	10	Each	National Instruments Multifunction Data Acquisition for USB -1 for every 2 students	\$189.00	\$1890.00

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
					-For use with LabView software - <a href="#">Click for Description</a> <b>OPTIONAL</b>		
					<b>The following items can be obtained through general supply or purchased locally:</b>		
			1	roll	Polyethylene sheet (Visqueen) 5 mil		
			20	Each	Plastic body putty squeegee 4"		
			2	Roll	Masking tape		
			20	Each	Scissors		
					Protective gloves (Vinyl, nitrile, or latex)		
			4	Each	Wood 2" x 6" x 16"		
			2		Measuring tape (100 ft.) or yardsticks or meter sticks		
			2	Each	2"x24x96 Close Cell Blue construction foam		
					<b>Note: The following items are necessary to construct the optional Styrofoam cutter. Plans can be found in the resource section of the Aerospace Curriculum</b>		
			3	Foot.	Nichrome Wire, 26 Ga		
			1	Each	0-30VDC / 5Amp Bench Supply		
			2	Each	Eye bolt, #10 - 24 2.75" Length		
			1	Each	Coil Spring, Approximately 6" long .041 wire dia, .375" OD		
			6	Feet	Wire, 14 gage		
			4	Each	3/16 Flat Washers		
			4	Each	#10-24 Nuts		
			2	Each	Banana Connectors		
			2	Each	Alligator Clips		

## Biotechnical Engineering (BE)

Have on Site	Item #	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz, See Specifications in the " <a href="#">Purchasing Manual Guidelines</a> " File	\$1,436.45	\$1,436.45
	35	A	1	Each	HP Scanjet 5550c digital flatbed multiple page scanner	\$243.15	\$243.15
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	Compact Flash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>For Optional Digital Camera</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	1198	CS	3	Pkg/10	3cc syringe, Kelvin #390687	\$2.85	\$8.55
	1205	C	1	Roll/ 100ft	1/8 <sup>th</sup> vinyl tubing 390394	\$12.50	\$12.50
	1255	CS	10	Each	Tensile Test Sample, Aluminum	\$3.50	\$35.00
	1260	CS	10	Each	Tensile Test Sample, Brass-	\$3.50	\$35.00
	1265	CS	10	Each	Tensile Test Sample, Steel	\$3.50	\$35.00
	1305	CS	1	Pkg/5	Replacement Blade for X-Acto Knife #32-6892	\$1.32	\$1.32
	1508	CS	5	Pkg/10 0	Pipet, serological, 1ml, disposable 10ML X .1, PYREX Sterile Disposable Pyrex Borosilicate (Corning No. 7077) Individually wrapped and plugged Frey Scientific #15593430	\$75.00	\$375.00
	1510	CS	1	case/2 00	Disposable serological pipette, polystyrene, negative and reverse graduation, 5ml capacity, VWR #32314-008 consumable	\$61.95	\$61.95
	1515	CS	1	case/2 00	Disposable serological pipette, polystyrene, negative and reverse graduations, 10ml capacity, VWR #53300-523 consumable	\$71.39	\$71.39
	1520	CS	1	Each	Capillary Tubes Pyrex Borosilicate 100mm long tubes, Closed at one end Frey Scientific #15593397	\$4.60	\$4.60

Have on Site	Item #	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	1525	C	1	Pkg/500	Antistatic Polystyrene weigh boats, approximate capacity 100 ml (3.4 oz.), 3.5" x 3.5" x 1", VWR #12577-051	\$9.39	\$9.39
	1530	CS	1	Pkg/500	Antistatic Polystyrene weigh boats, approximate capacity 20 ml (.7 oz), 1 5/8" x 1 5/8" x 5/16" VWR #12577-005	\$6.23	\$6.23
	1535	CS	5	Each	EKG Patches, 100 patches for use with the EKG Sensor, Pasco #6620 <b>OPTIONAL</b>	\$18.00	\$90.00
	1540	CS	2	Box	Glove Exam Latex PF Medium TIL024102	\$3.77	\$7.54
	1545	CS	1	Box	Glove Exam PF Small TIL024101	\$3.77	\$3.77
	1550	CS	1	10 tubes/ 8.3ml each	Poatao Agar Dextrose Caroline # 82-6702	\$19.00	\$19.00
	1555	CS	1	btl/80 ml	Sucrose Solution Carolina # 74-6862	\$5.90	\$5.90
	1560	CS	1	PK/50	Water Quality Test Strips, Ammonia, 0-5 ppm Ammonia Alert Frey Scientific #15529579	\$22.70	\$22.70
	1715	CS	2	Each	Green Fluorescent Protein Chromatography Kit, 166-0005EDU	\$137.00	\$274.00
	1720	CS	2	Each	pGlo Bacterial Transformation Kit 166-0003EDU	\$108.00	\$216.00
	1725	CS	5	Pkg/36	Petri Stickers, water-resistant ink, substrate and adhesives, and remains firmly attached at temperatures from 4 to 42 degrees C, 32-square grid (3" diam)	\$21.90	\$109.50
	3540	FN	1	Each	Safety Glass Cabinet, Capacity 25 Glasses & 10 Goggles, With Sterilization Light & Timer	\$406.10	\$406.10
	4005	GT	25	Each	Safety Glasses with Side Shields & Adjustable Temple #11782 Phoenix Edge-Black TM-53	\$0.90	\$22.50
	4045	GT	1	Each	Triple Balance Beam Scale with weight set, 2610g capacity with weight set, 0.1g sensitivity	\$97.29	\$97.29
	4075	GT	1	Each	Steel Tape measure, Blade Size 1" X 25" wide Blade, Power Return and Thumb Lock, Stanley	\$5.35	\$5.35
	4430	GT	2	Each	Hand Drill, 1/4" Capacity Chuck, Hardwood Handle, Great Neck #42	\$13.50	\$27.00
	4800	GT	5	Each	Safety Red Spirit Thermometer, total immersion, -20 to + 150 deg. Fischer #S41574C	\$1.94	\$9.70
	4805	GT	1	Pkg/72	Test Tubes Pyrex Borosilicate 20mm x 150mm, Pack of 72 general-purpose test tubes with medium weight walls and polished rims (Corning No. 9800), Stopper capacity: 32mL, size 1 Frey Scientific #15593484	\$34.20	\$34.20
	4810	GT	5	Each	Test Tube Rack, plastic rack holds six tubes. Frey Scientific #13263523	\$1.80	\$9.00
	4815	GT	1	Pkg/12	250 ml Erlenmeyer Flask, graduation range 50-225ml, 25ml intervals, rubber stopper #6, 89000-362 <b>OPTIONAL</b>	\$51.08	\$51.08
	4820	GT	1	Pkg/6	1 liter Erlenmeyer Flask, graduation range 250-1,000 ml, 50ml intervals, rubber stopper #9, VWR #89000-368 <b>OPTIONAL</b>	\$51.00	\$51.00
	4825	GT	1	Pkg/12	50 ml Erlenmeyer Flask, graduation range 20-50 ml, 25ml intervals, rubber stopper #6 VWR #89000-360 <b>OPTIONAL</b>	\$48.37	\$48.37

Have on Site	Item #	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	4830	GT	1	Pkg/12	125 ml Erlenmeyer Flask, graduation range 50-125 ml, 10 ml intervals, rubber stopper #1, VWR #89000-358 <b>OPTIONAL</b>	\$51.53	\$51.53
	4835	GT	1	Pkg/12	Pyrex Vista Graduated Cylinders blue enameled graduations. This cylinder capacity is in accordance with ASTM E-1272. The 10 ml size has a funnel top for easier filling. Frey Scientific #15529639	\$220.00	\$220.00
	4840	GT	2	Each	Rubber stoppers, Size 3, Solid, Approx. 40 stoppers, 24mm top and 18mm bottom diameter Frey Scientific #15560779	\$4.44	\$8.88
	4845	GT	5	Each	Aquarium starter kit: Heater, Airline tubing 8' Net Bubbler, Thermometer, Air pump, Aqua mist air valve, Lok-Tite air valve, Filter floss, Activated carbon. Frey Scientific #15573690	\$45.00	\$225.00
	4850	GT	5	Each	Stopwatch, Water Resistant, Provides a 24 hour range with a 1/100 of second resolution, Guaranteed to be within +/-3 seconds per day. Frey Scientific #15595699	\$10.00	\$50.00
	4855	GT	5	Each	Budget Life-sized Skull Dimensions: 3" x5", Lippincott #ISBN WCPS	\$15.00	\$75.00
	5010	GT	4	Each	Manual Colony Counter AJS17084B	\$6.93	\$27.72
	5015	GT	1	Each	Economical Microcentrifuge 166-0603EDU	\$385.00	\$385.00
	5020	GT	4	Each	Long wave UV lamp, wavelength output between 300 and 400 nm, runs on four AA batteries not included, 166-0500 EDU	\$45.00	\$180.00
	6065	SE	1	Each	Rapid Prototyping Machine Maximum Part Size 8" X 8" X 6" minimum. <b>OPTIONAL</b>	\$16,500.00	\$16,500.00
	6070	SE	1	Each	Structure Stress Analyzer complete with Safety Enclosure, Windows Based Software, and Operating Manual- <b>OPTIONAL</b>	\$3,210.00	\$3,210.00
	6072	SE	!	Each	Spanish up-grade for the Structural Stress Analyzer <b>OPTIONAL</b>	\$550.00	\$550.00
	6075	SE	1	Each	Tensile Tester Adapter for Structural Stress Analyzer- <b>OPTIONAL</b>	\$375.00	\$375.00
	6080	SE	1	Each	Top Loading Adapter for Structural Analyzer- <b>OPTIONAL</b>	\$98.00	\$98.00
	6085	SE	5	Each	Multicolor pH checkers, blue with white replaceable probe, Fischer #S60133 <b>OPTIONAL</b>	\$31.00	\$155.00
	6090	SE	10	Each	Wolfe Beta Monocular Microscope 10x widefield eyepiece(s); 4x, 10x, 40x, and 100x oil-immersion objectives (40x and 100x spring loaded), Halogen illumination 59-1147	\$332.16	\$3,321.60
	6095	SE	5	Each	Proscope HR Basic Kit, model BD-HRB with 50 X, with BD-10X Proscope 1X – 10X Lens, BD-Stand and BD Storage Case	\$656.00	\$3,280.00
	6100	SE	1	Each	Portable Dissolved Oxygen Meter, polarographic probe, built-in automatic temperature compensation and low battery indicator, Includes 9-V battery, zero oxygen solution, and carrying case 18-5700	\$350.00	\$350.00

Have on Site	Item #	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	6105	SE	1	EA	Steam Sterilizer autoclave-15.5 Qt. Capacity, heavy aluminum autoclave, Steam pressure: Up to 20lbs. Per inch, Gauge calibrated in both pressure & temperature Safety valve built into the cover, Swinging knob clamps allow quick lid removal, Removal inner tray provided for glassware or trays of instruments, Kettle & cover 13 1/2" diameter, 15" overall and 151/2-qt capacity, Frey Scientific #15598545 <b>OPTIONAL</b>	\$229.09	\$229.09
	6110	SE	1	Each	Incufridge Incubation chamber, Accurately holds temp from 5 degree to 65 degrees C , Large, three-digit temperatures display, Simple, two-button operation, Digital microcomputer provides display accuracy and temp. uniformity of +/-0.5degree C, Solid state Peltier module provided w/ heating or cooling funct. Capacity: 0.67 cu. Ft, Size: 14.5"Wx11"Hx19"D wt:18.7 Frey Scientific #15529510 <b>OPTIONAL</b>	\$501.60	\$501.60
	6115	SE	5	Each	Data acquisition bard with British telecom adapters, USB connection, National Instruments #N16009-PLTW DAQ <b>OPTIONAL</b>	\$295.00	\$1,475.00
	6120	SE	5	Each	Pasport EKG Sensor, Standard three-electrodes design, disposable stick-on electrodes, EKG signal input range: 0 to 4.5,V with 4.5uV resolution, Sample rate: 200 Hz, Heart beat range: 47 to 250 bpm, Includes 100 self- adhesive conductive patches PASCO #2111 <b>OPTIONAL</b>	\$145.09	\$725.45
	6125	SE	5	Each	1-Cup Water Kit Set 3D Molecular Designs Co. Kit <b>OPTIONAL</b>	\$33.00	\$165.00
	6130	SE	5	Each	DNA Discovery Kit, 2 Base Pairs (AT and GC), 3D Molecular Designs Co. Kit <b>OPTIONAL</b>	\$46.00	\$230.00
	6135	SE	1	Each	Bioinformatics Map of the, B-Glonin Gene Map of the B-globin, 12 Laminated Student Maps 3D Molecular Designs Co. <b>OPTIONAL</b>	\$58.00	\$58.00
	6140	SE	1	Set/3	Amino Acid Starter Kit, 3-Group Field Test, 3D Molecular Designs Co. Kit	\$48.00	\$48.00
	6175	I	10	Each	National Instruments Multifunction Data Acquisition for USB -1 for every 2 students -For use with LabView software <a href="#">-Click for Description</a> <b>OPTIONAL</b>	\$189.00	\$1890.00

## Civil Engineering and Architecture (CEA)

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
			1	Each	The CEA Course will need a 20 station Computer Laboratory's as specified in the <a href="#">Computer Laboratory</a> Specifications Section. Adjust the quantity accordingly to reflect your actual class size.		
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz, See Specifications in the " <a href="#">Purchasing Manual Guidelines</a> " File	\$1,436.45	\$1,436.45
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	Compact Flash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>For Optional Digital Camera</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	100	A	1	Each	Jump Drive, 256MB USB 2.0 Write speed 4.0MB or higher, Read 5.5 MB or higher. Minimum System Requirements: Windows 98SE/ME/2000/ XP, MAC OS X, MAC OS 8.6 or higher <b>Optional Storage Device</b>	\$9.44	\$9.44
	1215	CS	20	Each	Paper Covered Ridged Foam Board, 3/16" x 12" 36" <b>OPTIONAL</b>	\$1.80	\$36.00
	1270	CS	5	Each	Economy Field Book, Sokkia #8152-05	\$5.25	\$26.25
	1275	CS	6	Each	Balsawood Sheet 1/16" x 2" x 36" <b>OPTIONAL</b>	\$0.60	\$3.60
	1280	CS	6	Each	Balsawood Sheet 1/8" x 3" x 36", 10/Pkg <b>OPTIONAL</b>	\$10.95	\$65.70
	1285	CS	6	Each	Balsawood Sheet 1/4" x 3" x 36, 10/Pkg <b>OPTIONAL</b>	\$14.95	\$89.70
	1290	CS	25	Each	Balsawood Sheet 1/16" x 1/16" x 36", 20/pkg	\$3.20	\$80.00

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
					<b>OPTIONAL</b>		
	1295	CS	25	Each	Balsawood Sheet 1/8" x 1/8" x 36", 36/Pkg <b>OPTIONAL</b>	\$4.75	\$118.75
	1300	CS	25	Each	Balsawood Sheet 1/4" x 1/4" x 36", 20/Pkg <b>OPTIONAL</b>	\$6.20	\$155.00
	1305	CS	1	Pkg/5	Replacement Blade for X-Acto Knife #32-6892	\$1.32	\$1.32
	1310	CS	6	Each	Replacement Razor Saw Blade (X-Acto #236) <b>OPTIONAL</b>	\$2.37	\$14.22
	1315	CS	6	Pkg/5	Replacement Utility Knife Blades	\$0.84	\$5.04
	1320	CS	2	Pkg/5	X-Acto Board Cutter Replacement Blades Pitsco #Y51798 <b>OPTIONAL</b>	\$1.47	\$2.94
	1330	CS	10	Each	Quick Dry Tacky Glue, 4 oz. Kelvin #930048 <b>OPTIONAL</b>	\$2.61	\$26.10
	1335	CS	10	Each	Lo-Temp Glue Sticks, 1/2" x 4" Long <b>OPTIONAL</b>	\$2.49	\$24.90
	3540	FN	1	Each	Safety Glass Cabinet, Capacity 25 Glasses & 10 Goggles, With Sterilization Light & Timer	\$406.10	\$406.10
	4005	GT	25	Each	Safety Glasses with Side Shields & Adjustable Temple #11782 Phoenix Edge-Black TM-53	\$0.90	\$22.50
	4030	GT	5	Each	Sieve, Soil Testing, #4, 8"Dia.	\$48.00	\$240.00
	4035	GT	5	Each	Sieve, Soil Testing, #40, 8" Dia.	\$48.00	\$240.00
	4037	GT	5	Each	Brass pan, 8" for soil sieve	\$33.00	\$165.00
	4038	GT	5	Each	Brass Cover, 8" for sieve pan	\$21.00	\$105.00
	4040	GT	5	Each	Pan, Aluminum, 20 3/4" X 12 3/4" X 4" Deep	\$46.00	\$230.00
	4045	GT	1	Each	Triple Balance Beam Scale with weight set, 2610g capacity with weight set, 0.1g sensitivity	\$97.29	\$97.29
	4065	H	20	Each	Engraved, White Plastic Architectural Scale, 12" Triangle with 6 Divisions	\$2.96	\$59.20
	4070	H	20	Each	Triangular, White Plastic Civil Engineering Scale with 10, 20, 30, 40, 50 & 60 Part/Inch	\$2.96	\$59.20
	4080	GT	1	Each	Tape Measure, Fiberglass, 1/2" Wide X 100'	\$7.83	\$7.83
	4265	GT	5	Each	Proedge Knife No. 6, MFG #15060 <b>OPTIONAL</b>	\$3.66	\$18.30
	4270	GT	2	Each	X-Acto Board Cutter Pitsco #Y51797	\$9.50	\$19.00
	4275	GT	6	Each	Knife, utility, Retractable Blade, 6" Long Handle, Stanley # 10-099	\$5.50	\$33.00
	4285	GT	6	Each	Aluminum Miter Box ( X-Acto #236) & Razor Saw ( X-Acto #236) & Handle (X-Acto #5) Set	\$10.20	\$61.20
	4340	GT	5	Each	Rubber Mallet, Black, 18 oz.	\$3.25	\$16.25
	4570	GT	10	Each	Lo-Temp Full Size 110 Volt Glue Gun with 12" Glue Sticks	\$5.20	\$52.00
	6035	SE	1	Each	Auto Level, Nikon #AX2S, 20X magnification with stadia lines	\$320.00	\$320.00
	6040	SE	1	Each	Tripod, Aluminum Extension Legs, CST heavy duty, Length Open-65" with shoulder strap	\$135.00	\$135.00
	6045	SE	1	Each	Level Rod, Fiberglass, 13" length graduated in1/100ths	\$80.00	\$80.00
	6050	SE	1	Each	Rod Level Sokkia #8071-90	\$26.00	\$26.00
	6055	SE	1	Each	Soil Drying Oven, 50 Liter Capacity Burnstone Ceramic Limited #MINO/50 or Similar	\$820.00	\$820.00
			5	Each	Mixing Bowl, 10 – 20oz., Ceramic, Metal or Plastic. – Obtain From Local Sources.		
			5	Each	1 Qt. Capacity Mason Jar, Obtain From Local Sources.		

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
			2	Each	5 Gallon Plastic Bucket, Obtain From Local Sources.		

## Computer Integrated Manufacturing (CIM)

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
			1	Each	The CIM Course will need access to a 20 station Computer Laboratory as specified in the <a href="#">Computer Laboratory Specifications Section</a> . Adjust the quantity accordingly to reflect your actual class size.		
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz, See Specifications in the <a href="#">Purchasing Manual Guidelines</a> File	\$1,436.45	\$1,436.45
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>OPTIONAL</b>	\$112.31	\$112.31
	85	A	1	Each	Compact Flash digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>For Optional Digital Camera</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>For Optional Digital Camera</b>	\$9.65	\$9.65
	100	A	1	Each	Jump Drive, 256MB USB 2.0 Write speed 4.0MB or higher, Read 5.5 MB or higher. Minimum System Requirements: Windows 98SE/ME/2000/ XP, MAC OS X, MAC OS 8.6 or higher <b>Optional Storage Device</b>	\$9.44	\$9.44
	505	CM	1	Each	CNC Machine Package -Go to " <a href="#">CIM Equipment List</a> " for more details	-----	-----
	510	CM	1	Each	Robotic Package -Go to " <a href="#">CIM Equipment List</a> " for more details	-----	-----
	515	CM	1	Each	CIM Package <a href="#">Lab-Volt Package</a> with Lab-Volt 5250 Robot and Lab-Volt 5600 CNC mill -Go to " <a href="#">CIM Equipment List</a> " for more details	-----	-----
	1155	CS	2	Each	Tape, Plastic Electrical, Black, 3/4" X 30'	\$0.51	\$1.02
	1220	CS	75	Each	Machinable Wax - Small (Blocks 3" x 7" x 1.5:")	\$10.23	\$767.25
	1225	CS	75	Each	Machinable Wax - Large (Blocks 3" x 2" x 1.5")	\$9.24	\$693.00
	1230	CS	1	Each	Butterboard 3" X 12" X24" Blocks Per Class Section	\$240.00	\$240.00
	1235	CS	1	Each	Butterboard 2" X 24" X 24" Blocks Per Class Section	\$340.00	\$340.00

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	1315	CS	6	Pkg/5	Replacement Utility Knife Blades	\$0.84	\$5.04
	2200	EC	50	Each	Thermistor 10K Ohm Kelvin #110098	\$0.25	\$12.50
	2540	EC	10	Each	PLTW/Parallax 910-28132 - "Boe-Bot" Microcontoller Robotic Kit, Manuals, Serial Connection with Free USB Adapter <b>(Order 4 or less at: \$149.00/each)</b> <b>(Order 5+ at: \$134.00/each)</b>	\$134.00	\$1340.00
	3010	FT	5	Kit	Fischertechniks Principles of Engineering Kit <a href="#">(click for description and parts list)</a>	\$1475.95	\$7379.75
	3015	FT	5	Kit	Fischertechniks Principles of Engineering Supplemental Kit <a href="#">(click for description and parts list)</a>	\$94.95	\$474.75
					<a href="#">Click for a list of all optional Fischertechnik Kits and parts lists</a>		
	3530	FN	13	Each	Storage Organizer with Adjustable Dividers (13.2" X 18.8" X 3") Grainger #3KN85	\$22.90	\$297.70
	3540	FN	1	Each	Safety Glass Cabinet, Capacity 25 Glasses & 10 Goggles, With Sterilization Light & Timer	\$406.10	\$406.10
	3550	FN	1	Each	9 Drawer Roller Base Cabinet (26 1/8" x 12 1/8" x 19") Paxton-Patterson #19-1196	\$580.00	\$580.00
	3555	FN	2	Each	Multi-Purpose Workbench 1 3/4 Maple Top & Heavy Metal Legs (Top 60" Width x 30" Depth) Paxton-Patterson #63-2908	\$415.00	\$830.00
	4005	GT	25	Each	Safety Glasses with Side Shields & Adjustable Temple #11782 Phoenix Edge-Black TM-53	\$0.90	\$22.50
	4090	GT	20	Each	6" Steel Dial Calipers, graduated in .001, White faced Dial	\$10.30	\$206.00
	4140	GT	1	Each	9 Piece Combination Wrench Set, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4	\$17.90	\$17.90
	4145	GT	1	Each	11 Piece Combination Wrench Set, 7, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19mm	\$17.25	\$17.25
	4150	GT	1	Each	Hex Key Wrench Set, .05" -3/16" Fold Uni-Key Set, Eklind #91S	\$3.66	\$3.66
	4155	GT	1	Each	Hex Key Set, 9 Piece Metric, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	\$6.11	\$6.11
	4195	GT	2	Each	Slip-Joint Pliers, 8" Nickel Plated	\$2.80	\$5.60
	4225	GT	1	Each	Pliers, Curved Jaw Slip Joint, 9 1/2" Long, Plastic Coated Handle, Channel Lock #422G	\$11.65	\$11.65
	4235	GT	8	Each	Xcelite 103-S Wire Stripper	\$1.15	\$9.20
	4240	GT	1	Each	Screwdriver, Jeweler's Set of 6, Nickel Plated, General # SPC600	\$1.70	\$1.70
	4250	GT	1	Each	Screwdriver Set, 7 Piece, Flat Blade Stanley # 66-157	\$38.50	\$38.50
	4255	GT	1	Each	Screwdriver Set, 5 Piece, Phillips Stanley #66-156	\$19.50	\$19.50
	4275	GT	6	Each	Knife, utility, Retractable Blade, 6" Long Handle, Stanley # 10-099	\$5.50	\$33.00
	4670	GT	1	Each	Power Miter Box, 10", 5 1/2" Cross Cut at 90 degrees, Electric Blade Brake, Retractable Blade Guard, Dust Bag, 15A 115V Motor	\$235.00	\$235.00
	4685	GT	1	Each	Portable Compressor, 5 gal. Tank, Single Cylinder, Single Stage, Oil Free Pump, 110/120 volt Motor Delivery 2 hp, Direct Connection (no belts) With a Minimum of 3.5 cfm at 40 psi & a Minimum of 120psi Maximum Delivery Pressure, with regulator	\$204.00	\$204.00

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	4690	GT	1	Each	Air Compressor Hose, 25' Long X 1/4" ID, 200 psi Working Pressure, with NPT 1/4" 2 Swivel Male Fittings	\$16.90	\$16.90
	4692	GT	1	Each	Compressor Accessory Kit, 1 Blow gun, 1 male hose end, 1 male hose mender, 1 female air chuck, 2 female coupler bodies, 3 male coupler plugs, 2 female coupler plugs, 1 tire gauge, 1 adapter, 1 inflator pin, pin & adapter. All are 1/4" NPT Paxton Paterson # 20-2402	\$33.00	\$33.00
	4695	GT	1	Each	Bandsaw, Bench Top, 8" Throat, 115V, 1/5HP, Tilting Table, With Fence & Miter Gauge	\$114.40	\$114.40
	4715	GT	1	Each	Table Saw, Contractors, 10" Blade 22 1/4" X 33 3/8" Table or Larger, with Miter Gauge & Fence, 115V	\$544.70	\$544.70
	6068	SE	2	Kit	Economatics/PLTW Pneumatics Kit-	\$2,499.00	\$4,998.00
	6175	I	10	Each	National Instruments Multifunction Data Acquisition for USB -1 for every 2 students -For use with LabView software <a href="#">-Click for Description</a> <b>OPTIONAL</b>	\$189.00	\$1890.00

## CIM Equipment Options

PLTW Item #	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
				Please read the <a href="#">"Computer Integrated Manufacturing"</a> under "Course Specific Ordering Information" in the Purchasing Guidelines Section for a description of ordering options.		
505	B	1	Each	Intelitek Automated Manufacturing Package 10-1001 2007 <a href="#">-Mill Comparison/Specs</a> <a href="#">-Package Includes</a>	\$42,991.00	\$42,991.00
510	B	1	Each	Intelitek #10-0601-2007 Equivalent features to recommended CIM Package with the expert mill VCM-0600 mill. <a href="#">-Mill Comparison/Specs</a> <a href="#">-Package Includes</a>	\$36,258.00	\$36,258.00
515	B	1	Each	Lab-Volt Package with Lab-Volt 5250 Robot and Lab-Volt 5600 CNC Mill <a href="#">-Mill Comparison/Specs</a>	\$30,851.00	\$30,851.00
525	B	1	Each	Amatrol 880-RA2-1 Pegasus II Robotic System that includes: <ul style="list-style-type: none"> <li>• 88-LT2 Linear Traverse Axis, Pegasus 40 inch</li> <li>• 23065 External Servo Axis Cable Set</li> <li>• 88-F1 Parts Feeder</li> <li>• 88-A9 Parts Feeder Sensor</li> </ul> <a href="#">-Mill Comparison/Specs</a>	\$18,735.00	\$18,735.00

# Capstone Course

Engineering Design & Development is typically the last course offered in the five course sequence.  
The following is the equipment and supply list required for this course.

## Engineering Design and Development (EDD)

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
			1	Each	The EDD Course will need access to a 20 station Computer Laboratory as specified in the <a href="#">Computer Laboratory</a> Section. Adjust the quantity accordingly to reflect your actual class size.		
	10	A	1	Each	Lap Top Computer, P4-2.8 GHz minimum OR Pentium M processor 1.8 GHz, See Specifications in the " <a href="#">Purchasing Manual Guidelines</a> " File.	\$1,436.45	\$1,436.45
	60	A	1	Each	Digital Projectors, 2000 Lumens Minimum, Adjustable image size (zoom), Keystone correction, XGA Native resolution. Universal AC 120V, 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$663.83	\$663.83
	65	A	1	Each	Portable Digital Projector Specifications, 1400 ANSI, 2000:1 Contrast Ratio, Minimum, 4.85Lbs. Maximum Adjustable image size (zoom), Keystone correction, XGA native resolution, Universal AC 120V 60 HZ, All necessary cables <b>Purchase either #60 or #65, not both</b>	\$595.99	\$595.99
	70	A	1	Each	Digital Camera, Kodak Easy Share Model #C300, 3.2 Megapixels, 5 x digital zoom Video Clips, Recommend ordering "Memory Card" storage device below <b>Purchase either #70 or #75, not both</b>	\$82.67	\$82.67
	75	A	1	Each	Digital Camera, Nikon CoolPix #4600, 4.2 Megapixels, 3X Optical & 4X Digital Zoom, Recommend ordering "Memory Card" storage device below <b>Purchase either #70 or #75, not both</b>	\$112.31	\$112.31
	80	A	2	Each	Digital Video Camera, JVC Mini DV Camcorder, Model # GR-D270US. 25X Optical / 800X Digital Zoom, Recommend ordering "Memory Card" storage device and Digital Video Cassette Tapes below	\$276.65	\$553.30
	85	A	1	Each	Compact Flash digital camera memory storage device, 128MB <b>Choose the storage device that corresponds to your camera selection</b>	\$10.60	\$10.60
	90	A	1	Each	Memory Card Digital Camera memory storage device, 128 MB <b>Choose the storage device that corresponds to your camera selection</b>	\$8.50	\$8.50
	95	A	1	Each	Memory Stick digital camera memory storage device, 128MB <b>Choose the storage device that corresponds to your camera selection</b>	\$9.65	\$9.65
	100	A	1	Each	Jump Drive, 256MB USB 2.0 Write speed 4.0MB or higher, Read 5.5 MB or higher. Minimum System Requirements: Windows 98SE/ME/2000/XP, MAC OS X, MAC OS 8.6 or higher	\$9.44	\$9.44
	118	A	1	20 Station License	MS Project, Standard Edition	\$914.40	\$914.40
	1075	CS	2	Pkg/3	Camcorder Tapes, MiniDV,60 Min. Each	\$9.20	\$18.40

Have on Site	Item#	Cat	Qty	Unit	Item Specification	Unit Cost	Extended Price
	6175	I	10	Each	National Instruments Multifunction Data Acquisition for USB -1 for every 2 students -For use with LabView software <a href="#">-Click for Description</a> <b>OPTIONAL</b>	\$189.00	\$1890.00