

Requested Equipment List : Electromechanical Workshop

No.	Description	Specification	Total	Priority		
				A	B	C
WS1-1	"D" Hole Punch	Pilot hole 8mm, M8 ball race	3	2	1	
WS1-2	106 Pieces Sockets Set		6	2	2	2
WS1-3	Adjustable Reamer Sets	Reamer size range: 11.9-13.49mm	3	1	1	1
WS1-4	Air Compressor	Air displacement 142L/min. at 7 bar	1	1		
WS1-5	Angle Grinder	Wheel diameter 100mm	6	2	2	2
WS1-6	Arc Welder	Current range 40-190A	4	2	1	1
WS1-7	Center Bore		3	3		
WS1-8	Circle Hole Punch	28.0 x 21.0 to 34.0 x 27.0	3	3		
WS1-9	Circular Saw	185mm circular saw	6	2	2	2
WS1-10	CNC EDM	Max. workpiece dimension 600x400x250mm	1	1		
WS1-11	CNC Lathe	2 axis CNC bench turning centre	1	1		
WS1-12	CNC Milling	3 axis CNC bench milling machine	1	1		
WS1-13	Cobalt Milling Cutters	Dia.14-26mm, 25mm depth	3	2	1	
WS1-14	Compound Action Snips	Special hardened snips	6	4	1	1
WS1-15	Cordless Metal Cutter	Cuts steel sheet up to 2mm thick	3	1	1	1
WS1-16	Deburring Kit	1x12mm dia.HSS countersink	6	2	2	2
WS1-17	Dieholders for Lever Press	For 3-12mm and 1/8-7/16in	3	3		
WS1-18	Digimatic Caliper	Range: 0-300mm, Accuracy: ± 0.0015 "	6	2	2	2
WS1-19	Drill Press	1/4HP single phase motor	1	1		
WS1-20	Drill Vice	Base area 128x148	1	1		
WS1-21	Electricians Holesaw	16, 21, 25, 32, 40 and 51mm	3	3		
WS1-22	Engineering Tool Set		10	6	2	2
WS1-23	Engineer's Vice	6 in vice	6	3	2	1
WS1-24	Folding Machine	Capable of folding and bending operations	2	1	1	
WS1-25	Hand Hole Punch Set	adjustable throat depth 10-40	3	1	1	1
WS1-26	Hand Lever Press	3000lb over the full stroke	3	1	1	1
WS1-27	Hand Saw	Handsaw	12	6	3	3
WS1-28	Hand Spot Welder	Maximum welding input 12.5kVA	3	1	1	1
WS1-29	Hexagon key L-shaped	10 pcs. Metric, 1.27, 1.5, 2, 2.5, 3, 4, 5, 6, 8	12	6	3	3
WS1-30	Jobber Drills	Size: 3.0-12.0mm	6	6		
WS1-31	Lathe Tool Sets	Set 1: 6.5x9.0mm, Set 2: 9.5x125mm	3	3		
WS1-32	Louver Tool	44.4mm length by 10mm width	3	1	1	1
WS1-33	Magnetic Bending Machine	Magnabend 100E	1	1		
WS1-34	Magnetizer/Demagnetizer	dimensions : 51 x 49 x 29	1	1		
WS1-35	Maintenance Tool Kit	engineers kit of 89 tools	6	2	2	2
WS1-36	Manual Toggle Press	Light/medium duty work	3	1	1	1
WS1-37	Micro-tech Tool Sets	for use within the micro-electrics, electronics	6	6		
WS1-38	Mini Milling Cutters	Metric 20 pieces, 1-6mm	3	3		
WS1-39	Mini Pipe Bender	For 15 and 22mm copper tubing	3	2	1	
WS1-40	Moulding Machine	Polylab plastics and Moulding machine	1	1		
WS1-41	Multimaster Shears	Snip 3inch-76mm blade	6	4	1	1
WS1-42	Outside Micrometer	Flatness : 0.000012"/0.3micro M	6	2	2	2
WS1-43	Pipe Bender	Bending 6, 8, 10mm (1/4, 5/16, 3/8) O/D tubing	3	1	1	1
WS1-44	Power Saw Reciprocating Var.	Speed variable 0-2500 strokes per minute	3	1	1	1
WS1-45	Rectangular Hole Punch	Square, rectangular	3	1	1	1
WS1-46	Small Sizes Tap & Die Sets	Set M2-M12	12	6	3	3
WS1-47	Spray Gun for Painting		6	2	2	2
WS1-48	Standard Riveter	suitable for 3 mm, 4mm and 5 mm rivet	6	3	3	
WS1-49	Steel Marker		12	12		
WS1-50	Steel Ruler	Stainless steel 60cm length	12	12		
WS1-51	T-handled Hex Key Driver	Metric, 2, 2.5, 3, 4, 5, 6	12	6	3	3
WS1-52	Ampere Meter	Range : 0.3A, 3A, 30A	10	6	4	
WS1-53	Ampere Meter	Analog, 300A	10	6	4	
WS1-54	AC Ampere Meter	5, 10, 50A, portable	10	6	4	
WS1-55	AC Volt Meter	0 to 400V, portable	10	6	4	
WS1-56	AC Volt Meter	600V	10	6	4	
WS1-57	DC Ampere Meter	5, 10, 50A, portable	10	6	4	
WS1-58	DC Volt Meter	0 to 600V	10	6	4	

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WS1-59	Frequency Counter	520MHz	10	6	4	
WS1-60	Harmonic Analyzer	FFT Fluke 41-B	10	6	4	
WS1-61	Hi Tester	HIOKI 3332	10	6	4	
WS1-62	Logic Probe		10	6	4	
WS1-63	Multimeter	3V to 1,000V, 1 ohm to 1 Mohm, 3mA to 6 A	10	6	4	
WS1-64	Oscilloscope	Storage, 50MHz	10	6	4	
WS1-65	Oscilloscope	Dual Trace, 30Mhz	10	6	4	
WS1-66	Power Supply	+/- 0 to 12 V, DC	20	12	8	
WS1-67	Standard Signal Generator	Freq. : 140MHz, Level : 126dBm	10	6	4	
WS1-68	DC Motor	100V, 0.75kW	10	6	4	
WS1-69	Induction motor	3 phase, 380V, 1Hp	10	6	4	
WS1-70	Induction motor	1 phase, 220V, 1/4Hp	10	6	4	
WS1-71	Stepping Motor		10	6	4	
WS1-72	Slicing Load Resistor		10	6	4	
WS1-73	Logic Pulser	TTL/CMOS	10	6	4	
WS1-74	Circuit Checker	TRACER 2000 or equivalent	1	1		
WS2-1	Laboratory Table & Chair Set for Workshop		17	17		
WS2-2	Cabinet for Workshop		10	10		
WS2-3	Painting Booth	2 x 2m, w/Exhaust Fan	1	1		

Requested Equipment List : Electric Circuit and Measurement

No.	Description	Specification	Total	Priority		
				A	B	C
EM1-1	Analog Multimeter	HIOKI 3007 or equivalent	11	10	1	
EM1-2	AC Ammeter	0.5 to 5A	18	15	3	
EM1-3	AC Voltmeter	150 to 300V	18	15	3	
EM1-4	AC Voltmeter	15 to 30V	11	10	1	
EM1-5	Frequency Meter	20 to 100Hz	6	5	1	
EM1-6	LCR Meter	LEADER LCR-740 or equivalent	6	5	1	
EM1-7	Standard Battery	1.0190V	6	5	1	
EM1-8	DC Ammeter	0.3mA to 30mA	18	15	3	
EM1-9	DC Ammeter	0.1 to 3A	6	5	1	
EM1-10	DC Potentiometer	YOKOGAWA 2723 or equivalent	6	5	1	
EM1-11	Regulated DC Power Supply	0 to 12A, 0 to 35V	11	10	1	
EM1-12	DC Voltmeter	3 to 300V	18	15	3	
EM1-13	DC Voltmeter	30 to 1,000V	11	10	1	
EM1-14	Decaded Capacitor	1,1199mF	11	10	1	
EM1-15	Decaded Inductor	1,110mH	11	10	1	
EM1-16	Decaded Resistance	111,11kW	22	20	2	
EM1-17	Decaded Resistance	1111,11kW	22	20	2	
EM1-18	Decaded Resistance	0.1W to 100kW	22	20	2	
EM1-19	Digital Counter	LEADER LDC-824 or equivalent	6	5	1	
EM1-20	Digital Multimeter	SANWA CD-720E or Equivalent	11	10	1	
EM1-21	Electronic Voltmeter	National VP-960A or equivalent	22	20	2	
EM1-22	Frequency Counter	OGAWA OSK 17863 or equivalent	6	5	1	
EM1-23	Function Generator	National VP-7422A or equivalent	11	10	1	
EM1-24	Galvanometer	OGAWA OSK17697 or equivalent	6	5	1	
EM1-25	Gaussmeter	20 to 20,000Gauss, 0 to 500Hz	6	5	1	
EM1-26	LCR Meter	ANDO AG-4303	11	10	1	
EM1-27	Power Factor Meter	YOKOGAWA 2039 or equivalent	6	5	1	
EM1-28	Q Meter	OGAWA OSK 17872 or equivalent	6	5	1	
EM1-29	Shunt Box	75mA to 15A	6	5	1	
EM1-30	Single Phase Wattmeter	YOKOGAWA 2041 or equivalent	6	5	1	
EM1-31	Slide Rheostats	YAMABISHI DW-5 or equivalent	6	5	1	
EM1-32	Oscilloscope	National 05-6411 or equivalent	11	10	1	
EM1-33	Thermocouple	OMRON J type or equivalent	11	10	1	
EM1-34	Thermometer	ASTM 37C/IP77C 0-52 or equivalent	11	10	1	
EM1-35	Three Phase Wattmeter	5A, 380V	6	5	1	
EM1-36	Volt Box	3 to 750V	6	5	1	
EM1-37	Volt Slider	5A, 0 to 240V	11	10	1	
EM1-38	Wheatstone Bridge	YOKOGAWA 2768 or equivalent	11	10	1	
EM1-39	Wheatstone Bridge	ANDO WP-6C or equivalent	11	10	1	
EM1-40	OHP	ELMO HP-2450 or equivalent	1	1		
EM1-41	Screen for OHP	1.5 x 1.5m	1	1		
EM1-42	X-Y Recorder	YOKOGAWA 3033 or equivalent	2	2		
EM1-43	Induction Voltage Regulator	KYONAN KVR-305-1 or equivalent	1	1		
EM1-44	Harmonic Analyzer	FLUKE 41B or equivalent	5	5		
EM1-45	Power Hi Tester	HIOKI 3332 or equivalent	5	5		
EM1-46	Personal Computer		5	5		
EM1-47	Digital Storage Oscilloscope	40MHz	5	5		
EM1-48	DSP Card	16bit digital to analogue conversion	5	5		
EM1-49	Induction Motor	1.2kW	5	5		
EM1-50	Induction Motor	3.7kW	5	5		
EM1-51	DC Motor	2.2kW	5	5		
EM1-52	Function Generator	National VP-7422A or equivalent	5	5		
EM1-53	Digital Multimeter	SANWA CD-720E or Equivalent	10	10		
EM1-54	Analog Multimeter	HIOKI 3007 or equivalent	10	10		
EM1-55	Current Sensor	LEM LA 55-P or equivalent	12	12		
EM1-56	Isolation Amplifier	AIKOH 5500V or equivalent	12	12		
EM1-57	DC Power Souece Equipment	100V, 10kW	1	1		
EM1-58	Slide Regulator	240V, 2kVA	1	1		

Requested Equipment List : Electric Circuit and Measurement

No.	Description	Specification	Total	Priority		
				A	B	C
EM1-5	Slide Condenser	380V, 7.5A, 5kVA, 50Hz	1	1		
EM1-6	Universal RLC Load	380V, 200V, 5A, 3kVA	1	1		
EM1-6	LCD Projector/Visual Presentor					
EM2-1	Personal Computer for Final Project Room	CPU : Pentium III 866MHz HDD : 10GB	5	5		
EM3-1	Personal Computer for Lecturer Room	CPU : Pentium III 866MHz HDD : 10GB	5	3	2	
EM4-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
EM4-2	Cabinet	1,800 x 500 x 2,300mm	6	6		
EM4-3	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
EM4-4	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
EM4-5	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
EM4-6	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Factory Automation

No.	Description	Specification	Total	Priority		
				A	B	C
FA1-1	Thermal Transducers	Resistance Temperature Detector OSK 18123, Ogawa Seiki	12	10	2	
FA1-2	Temperature Transducers Training Apparatus	De Lorenzo DL 2312	2	2		
FA1-3	Thermal Transducers	Thermocouple Type J/K, L probe = 10cm	12	10	2	
FA1-4	Thermal Transducers	Thermistor 0-200C, length of probes = 15 cm	12	10	2	
FA1-5	Thermometer	OSK 18102 type A	6	5	1	
FA1-6	Optical Bench Training Apparatus	Small Type Experiment Apparatus SEE - 524, Omron	1	1		
FA1-7	Optical proximity E3S - 2 E4		6	5	1	
FA1-8	Optical proximity E3R - DS 30		6	5	1	
FA1-9	Optical proximity E3S - R1 E4		6	5	1	
FA1-10	Optical proximity E4B - LS 70		6	5	1	
FA1-11	Optical proximity E4B - RS 70		6	5	1	
FA1-12	Capacitive proximity switch, distance 5 cm		6	5	1	
FA1-13	Ultrasonic proximity switch, distance 5 cm		6	5	1	
FA1-14	Inductive proximity switch, distance 5 cm		6	5	1	
FA1-15	Limit Switch Training Apparatus	Operating Force Experiment Apparatus SEE - 700, Omron	1	1		
FA1-16	Limit Switch Training Apparatus	Operating Displacement Experiment Apparatus SEE - , Omron	1	1		
FA1-17	Limit Switch	Basic type, 6A	3	2	1	
FA1-18	Limit Switch	Roller Type, 6A	3	2	1	
FA1-19	Limit Switch	Lever type, 6A	3	2	1	
FA1-20	Limit Switch	Long lever type, 6A	3	2	1	
FA1-21	Magnetic Amplifier training apparatus	OSK 17517 Magnetic Amplifier Trainers Brand : Ogawa Seiki - Japan	3	2	1	
FA1-22	Current Transducer	Hall element ac/dc, input 50A, LEM LA 55-P	6	5	1	
FA1-23	Voltage Transducer	Insulation amplifier ac/dc, input 3000V AIKOH ELECTRIC 8Z201 T	6	5	1	
FA1-24	Load Cell	OSK 18169 Compression, Tension Load Cells	6	5	1	
FA1-25	Torque Transducers	OSK 18177 Torque Transducers, Ogawa	6	5	1	
FA1-26	Linear displacement, Rotation position training apparatus	De Lorenzo DL 2312	1	1		
FA1-27	Rotary Encoder	Incremental, resolution 360, channel ABZ, output NPN	6	5	1	
FA1-28	Rotary Encoder	Absolut, rpm = 6000, output NPN/PNP	6	5	1	
FA1-29	Sequence Control Timer & Counter training Apparatus	OSK 17494 Sequence Control Trainer (Panel B) Brand : Ogawa Seiki - Japan	2	2		
FA1-30	Motor Control Training Apparatus	OSK 17496 Sequence Control Trainer Brand : Ogawa Seiki - Japan	2	2		
FA1-31	Temperature Controller Training Apparatus	OSK 17570 Process Feedback Control Study Unit	1	1		
FA1-32	Thermometer	OSK 18111 Infrared Digital Thermometer Type A Brand : Ogawa Seiki - Japan	3	3		
FA1-33	Digital Controller	OSK 18197 Ogawa Seiki - Japan	6	5	1	
FA1-34	Water Level Controller Training Apparatus	OSK 17570 Process Feedback Control Study Unit	1	1		
FA1-35	Step Motor	OSK 17532 Step Motor Relay Assembly	6	5	1	
FA1-36	DC Servo Motor	OSK 17537 DC Servo Positioning Unit	6	5	1	
FA1-37	AC Servo Motor + Drives	400 watt	6	5	1	
FA1-38	Shaded Pole Motor	220Vac, 25W, 180mA, torque 125 gcm,	6	5	1	
FA1-39	Optical Tachometer	Range 0 - 9000rpm, gun type, output 4-20mA	6	5	1	
FA1-40	Electronic Timer		6	5	1	
FA1-41	Electronic Counter		6	5	1	
FA1-42	Selenoid valve	D=1.5", for water, in/out, coil=220Vac	6	5	1	
FA1-43	Control Valve for water	signal 4-20mA, input 220Vac, type EVA-1	6	5	1	

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FA1-44	General purpose selenoide valve	coil 24Vdc	6	5	1	
FA1-45	Isolated Thermocouple	Switch configurable J,K,T,R,S,E,B type thermocouple input	6	5	1	
FA1-46	Isolated DC I/O Switch	configurable input/output: Input ($\pm 10\text{mV}$ to $\pm 10\text{V}$, $0-10\text{mV}$ to $0-10\text{V}$, $\pm 20\text{mA}$, $0-20\text{mA}$), Output ($\pm 5\text{V}$, $\pm 10\text{V}$, $0-10\text{V}$, $0-20\text{mA}$), 2.4KHz input bandwidth, 1000Vdc 3-way optical	6	5	1	
FA1-47	Isolated RTD Switch	configurable: Pt and Ni RTD input range, $0-5\text{V}$ or $0-20\text{mA}$ Output, 1000Vdc 3-way optical	6	5	1	
FA1-48	Isolated Strain gauge Input. Switch	configurable mV or V input of full bridge, volt and current output, 1000Vdc 3-way optical	6	5	1	
FA1-49	ADC SIND Integrator	V/f signal conditioning, $V_{in}=0-10\text{Vdc}$, $V_{out}=\text{puls}$ 24V , supply $100-240\text{Vac}$	6	5	1	
FA1-50	F/V converter	input $1-20.000\text{hZ}$, output $0-10\text{Vdc}$, $0-16\text{mA}$, Supply $100-240\text{Vac}$	6	5	1	
FA1-51	PLC CPM-1A c/w Programming console		16	15	1	
FA1-52	PLC CQM1c/w programming console		16	15	1	
FA1-53	PLC C200Ha	CPU+mem card+rack+PS, PC link unit, special I/O: analog I/O, temp.sensor/control; Fuzzy logic, PID control, 16 point I/O relay unit. C/w PC con. Cable. swawin software	6	5	1	
FA1-54	PLC Modicon	TSX 24I/O	6	5	1	
FA1-55	PLC	Simens s7-300	6	5	1	
FA1-56	Soft starter motor	7.5kW , $380-460\text{V}$, type altivar 18, Scheider/Merlin Gerin	6	5	1	
FA1-57	Autotransformer	3P , $380/220\text{V}$, 7.5kW	12	10	1	1
FA1-58	Induction motor	3P $400/660\text{V}$, 50hZ , 2.2kW , 1450rpm , C/w : Centrifugal Switch, 6A , 1NO , 1NC	6	5	1	
FA1-59	Digital Multi meter	scale 4digit, c/w clamp probe for current ac/dc, RS232C cable DMM Link software ref. PC100 (SANWA)	6	5	1	
FA1-60	General Purpose Torque meter	portable, $2\text{Nm}-2000\text{Nm}$, $0-8000\text{rpm}$, display 4 digit, analog output, RS232C	6	5	1	
FA1-61	Over Current Relays Training Apparatus	Consist of : Over Current relay, IWU 2/1 ,1 pole $2,6-6\text{A}$, Time lag $5-45\text{sec}$. Over current relay IWU 2/3 ,3 pole $2,6-6\text{A}$, Time lag $5-45\text{sec}$ Short circuit relay, IWK 2/1 ,1 pole $5-20\text{A}$, Time lag $0,1-1\text{sec}$ Short circuit relay, IWK 2/3 ,3 pole $5-20\text{A}$, Time lag $0,1-1\text{sec}$ Macnetic contactor, 3P , 380V , 7.5kW , 2NO , 2NC . coil 220V Push Bottom, Pilot lamp	6	5	1	

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FA1-62	Over / Under Voltage Relays Training Apparatus	Consist of : Under voltage relay, WK3-1 U for under Voltage, 220V Over voltage relay, WK3-1 O for over Voltage, 220V Over/under relay, WK3-2 for under Voltage and over Voltage, 220V Macnetic contactor, 3P, 380V, 7.5kW, 2NO,2NC, coil 220V Push Bottom, Pilot lamp	6	5	1	
FA1-63	Reverse Power Relays Training Apparatus	Consist of : Reverse power relay, RW 1-10 for low tension Installations, 5A, 220 V Macnetic contactor, 3P, 380V, 7.5kW, 2NO,2NC, coil 220V Push Bottom, Pilot lamp	6	5	1	
FA1-64	Frequency Relays Training Apparatus	Consist of : Frequency relay, SFG 3 for over and under Frequency, 220V, 10 VA, 45-65 Hz, test voltage 2KV Macnetic contactor, 3P, 380V, 7.5kW, 2NO,2NC, coil 220V Push Bottom, Pilot lamp	6	5	1	
FA1-65	Programmable Relays Training Apparatus	Consist of : SEPAM S01 for substation SEPAM T01 for Transformer SEPAM B01 for Busbar SEPAM M01 for Motor SEPAM G01 for Generator SEPAM T02 for Metering Macnetic contactor, 3P, 380V, 7.5kW, 2NO,2NC, coil 220V Push Bottom, Pilot lamp	6	5	1	
FA1-66	Instrumentation transformer	ZCT Toroidal deameter 22mm	6	5	1	
FA1-67	Instrumentation transformer	Current Transformer, GS-100, 50/5A, 50-60	12	10	1	1
FA1-68	Instrumentation transformer	Summation Current Transformer, , 100/5A, 50-60 Hz	6	5	1	
FA1-69	Instrumentation transformer	Current Transformer, GS-100, 15/5A, 50-60	12	10	1	1
FA1-70	Relay Testing / calibration	relay testing, voltage output range: 4 phase AC 4*0-150 V, 1 phasa AC (L-L) 2*0-300 V, DC (L-N) 4*+- 180 V; Power 3 phasa AC 3*82 VA at 150 V, 1 phasa AC (L-L) 1*140 VA at 300 V, DC (L-N) 3 *87 W; Current Output: Range: 3 Phase AC 3*15 A, 1 phasa AC 1*45 A, DC (L-N) 3*15 A; Power : 3 phasa AC 3*87 VA, 1 phasa AC (L-L) 1*250 VA, DC (L-N) 2	2	2		
FA1-71	Moveable Regulated autotransformer	Input: 3P, 380Vac, output: 0-380V, 3P, 7.5kW ref. Kyonan	6	5	1	
FA1-72	High inductive load	Slide reactor, 5kVA 50Hz 380V 7.2A 220V	12	10	1	1
FA1-73	Portable Amperemeter	Range 1A, 10A, 100A (AC)	12	12		
FA1-74	Portable Voltmeter	Range 400V, 600V (AC)	12	10	1	1
FA1-75	Oil Insulation tester	OSK 17543, no. 12, Ogawa Seiki	1	1		

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FA1-76	Lighting Installation Module	DeLorenzo DL 2101T	1	1		
FA1-77	Working Bench With Rack	DL 2100T	2	2		
FA1-78	Three Phase Induction Motor	DL 2102A	6	6		
FA1-79	Star-delta Starter	DL 2102T25	12	10	1	1
FA1-80	Pole Switching Unit	DL 2102T35	6	6		
FA1-81	Three-Phase Power Supply	DL 2102AL	6	6		
FA1-82	Push Button	DL 2102T02	12	12		
FA1-83	Pilot Light	DL 2102T03	12	12		
FA1-84	Thermal Relay	DL 2102T05	12	12		
FA1-85	Timing Relay	DL 2102T06	12	12		
FA1-86	Emergency Mushroom Push Button Module	DL 2101T33	6	6		
FA1-87	Contactor	DL 2102T04	12	12		
FA1-88	AM Meter	DL 2109T12	18	18		
FA1-89	Transformer	DL 2101T13	6	6		
FA1-90	Volt Meter	DL 2109T15	6	6		
FA1-91	Fire Alarm Control Module	DL 2101T30	6	6		
FA1-92	Smoke Detector Module	DL 2101T31	12	12		
FA1-93	Thermal Detector Module	DL 2101T32	12	12		
FA1-94	Indicators Module	DL 2101T34	6	6		
FA1-95	Power Supply	DL 2101T27	6	6		
FA1-96	Tools for Instalation	Pipe cutter tools for conduit 30mm	6	6		
FA1-97	Tools for Instalation	Pipe Reamer 10- 30mm	6	6		
FA1-98	Tools for Instalation	Coopper pipe end cleaner	6	6		
FA1-99	Tools for Instalation	Stillson 60mm	6	6		
FA1-100	Tools for Instalation	wire cutter 10mm2	6	6		
FA1-101	Tools for Instalation	Magentizerand demagnetizer, dim	6	6		
FA1-102	Tools for Instalation	Stripmaster 6mm2	6	6		
FA1-103	Tools for Instalation	Coaxial cable stripper	6	6		
FA1-104	Tools for Instalation	Cable press hidraulic 25 - 300mm2 for	6	6		
FA1-105	Tools for Instalation	Cable press 1.5 - 10 mm2 for termination	6	6		
FA1-106	Tools for Instalation	Cable press 6 - 25 mm2 for termination	6	6		
FA1-107	Tools for Instalation	Engineering toolset	6	6		
FA1-108	Tools for Instalation	Hand drill 12 mm	6	5	1	
FA1-109	Photo Electric Wattmeter	OSK 17602 Photo Electric Apparatus, Type B, OGAWA Seiki	6	6		
FA1-110	High Voltage Switch Gear	HV Qubicle Load Break Switch 20kV, type QMC 400, Schneider / Merlin Gerin	1	1		
FA1-111	High Voltage Switch Gear	Metering Panel, 20kV, type CM, Schneider / Merlin Gerin	1	1		
FA1-112	Earth tester	Earth meter, analog c/w probes, cable 15 m	6	5	1	
FA1-113	Insulation tester	OSK 17684, Insulation Resistance Tester, 2000V, Type A, Ogawa	6	5	1	
FA1-114	Current tester	AC Current / Leakage Tester Clamp-On Type, OSK 17665 - OGAWA	6	5	1	
FA1-115	Stand-by Battery	DL 2101T29	6	6		
FA1-116	AMF Module	SEG	6	6		
FA1-117	Latching Relay	DL 2101T14	6	6		
FA1-118	Power Meter	Digital AC Power Meter, 250321 (1 phase)	6	5	1	
FA1-119	Power Meter	Digital AC Power Meter, 250323 (3 phase)	6	5	1	
FA1-120	Power Meter	Clip on AC Power Meter, 2433 (max voltage 600 V ac)	6	5	1	
FA1-121	Power Meter	Power Hi Tester, 3332, Hioki	6	5	1	
FA1-122	Electronic Tester	Electronic Circuit Tester, 3223 (0.3 to 1,200V	6	5	1	
FA1-123	Computer simulation Software	PSCAD (EMTDC/RTDS) , for windowns, Software, Version 2.00	1	1		
FA1-124	Computer simulation Software	Power Electronic and Machatronic software, PE-PRO, V2.0	1	1		

Requested Equipment List : Factory Automation

No.	Description	Specification	Total	Priority		
				A	B	C
FA1-125	Optical Bench Training Apparatus	Large Type Experiment Apparatus SEE - 926, Omron	1	1		
FA1-126	Power Quality Analyze	Power Quality Analyzer, volt 5-1250Vac/dc, freq. 6-99hz, measuring: harmonic1-13, CF, DF, DPF, Power Mwatt, MVA, MVAR, current range 0 - 1000A. FLUKE 43	6	5	1	
FA1-127	FFT Dynamic Signal Analyzer	35670 A, HP	6	5	1	
FA1-128	Portable FFT Analyzer	Portable FFT Analyzer, volt 5-600Vac/dc, freq. 6-99hz, measuring: harmonic1-13, CF, DF, DPF, Fluke 41 B	6	5	1	
FA1-129	AC/DC Converter	OSK 18196, DC Static Power Converter type	6	5	1	
FA1-130	UPS	Power Sure UPS, Model 240-9358, 400 VA, 240 W, 6 mins. in 180-270 V, out 230 V	6	5	1	
FA1-131	Power Inverter	Inverter, , Square Wave ATV 18U41N4, 2,2 kW, 3P, 380-460V or Omron Sysdrive 3G3FV	6	5	1	
FA1-132	Harmonic Filter	AC Input Reactor Harmonic Filter, 2,5 kVAR, 400 V, 3P	12	10	1	1
FA1-133	Active Harmonic Filter	AIM active harmonic filter 3Ph , 400V	1	1		
FA1-134	Automatic Capacitor Bank Panel	Consist of:	1	1		
		- MCCB 100 A, 3P x 1pc				
		- MCCB 15 A, 3P x 8pcs				
		- Contactor 5 kW, 3P, 400V TELE x 8pcs				
		- Capacitor 0.5 kVAR, 400 V Schneider/MG x				
		- SS Automatic/manual x 1pc				
		- PFR 8 step x 1pc				
		- MCB 10 A 3 phase x 1pc				
		- Pilot Lamp R,S,T TELE x 3pcs				
		- Pilot Lamp ON-OFF TELE x 16pcs				
		- Push Button ON-OFF TELE x 16pcs				
		- Voltmeter 500Volt x1pc				
		- SSV Voltmeter x 1pc				
FA1-135	Digital Control Module	Programmable setting parameter, interface to PC, analog output PID controller Fuzzy Logic Controller	6	5	1	
FA1-136	Tele-measuring support equipment	Wireless Network, Frequency Band 2400-2483.5 MHz, Modulation Technique Direct Sequence Spread Spectrum (CCK, DQPSK, PC Card	6	5	1	
		Access Point	1	1		
		Compact Omnidirectional Antenna Kit	1	1		
		Directional Mini-Rflector Grid Antenna Kit	6	5	1	
		Software Support/Driver	1	1		
FA1-137	Industrial Bus training module	MOD bus, CAN bus, IIC, Profibus, Implemented on real Module/equipment to simulate Factory Network Measurement.	6	5	1	

Requested Equipment List : Factory Automation

No.	Description	Specification	Total	Priority		
				A	B	C
FA1-138	Micro Controller training kit	ICE board +I/O, Parallel/Serial interface to PC, Code memory and external data memory can be mapped to the emulator, Download BIN, HEX, and SYM file to the code memory, In-line Assembler and In-line Disassembler, Perform real time Go, Single Step Go and SI.CPU system board, Analog-Digital I/O unit, Serial I/O, LCD, Keypad, resolution bit	6	5	1	
		C Cross compiler	1	1		
		Intel Platform	6	5	1	
		Motorola Platform	6	5	1	
		Zilog Platform	6	5	1	
FA1-139	Data Acquisition and Control Module	General Specification for Remote data Acquisition and control Module: RS 485 to host (2 wire), remote configuration via software, ASCII Command/respon protocol, built in watch dog timer, 10V to 30 V power	6	5	1	
		8 chanel Analog Input Module (16 bit resolution, software config for T/C, low level voltage or mA input, 300 Vdc isolation, digital input, digital output)	6	5	1	
		8 Channel Thermocouple Input Module	6	5	1	
		RTD Input Module	6	5	1	
		8 Channel Strain gauge Input Module	6	5	1	
		Analog Output Module	6	5	1	
		Counter/Frequency Input Module	6	5	1	
		Isolated RS232 to RS 485/422 Converter	6	5	1	
		Specification for Distributed data Acquisition and control system : Support 4 I/O slots (up to 64 I/O points), remote programmable input types and range, 3 ways isolation and watchdog timer supervisor, Built in diagnostic, 16-bit microprocessor, up to 256 KB flash ROM, 256 KB SRAM, Built-in ROM-DOS, 2 communication port connected (RS-485, RS-232C)				
		8 channel analog input module	6	5	1	
		3 channel RTD input module	6	5	1	
		8 channel high speed analog input module	6	5	1	
		7 channel thermocouple input module	6	5	1	
		4 channel analog output module	6	5	1	
		16 channel digital input module	6	5	1	
		16 channel digital output module	6	5	1	
		Power supply switching	6	5	1	
FA1-140	Embedded PC	Biscuit PC, Point Of Sale Control Board Pentium III Processor based 5.25" size, VGA/LCD, Ethernet and U2 ACSI, Video, TV, Audio, LVDS, SSD.SDRAM 512 MB, PCI/ISA Slot, USB, EIDE, serial, LPT, FDD	6	5	1	
		Monitor VGA	6	5	1	
		Harddisk 20 GB	6	5	1	
		Cable, connector and accesories	6	5	1	

Requested Equipment List : Factory Automation

No.	Description	Specification	Total	Priority		
				A	B	C
FA1-141	Industrial PC	High-performance industrial computer architecture based on the standard PCI bus. CompactPCI chassis 14-slot backplane, redundant supply, alarm.	6	5	1	
FA1-142	Distributed Control System training kit	CompactPCI processor board single PCI-PCI bridge, VGA/dual LAN, Utility CD ROM. Prototype DCS module complete for factory automation.	6	5	1	
FA1-143	Panel PC	Server, Data Base management, I/O interface, Plant floor controller, programmable interface with others equipment.	6	5	1	
FA1-144	Data entry equipment	Panel PC with 15" TFT LCD Display and touch screen, Intel Celeron, SDRAM 256 MB, HDD, FDD, CD-ROM/DVD-ROM drive, Bus Expansion, accessories, stand kit.	6	5	1	
FA1-145	Power supply	Mini Panel PC with 6" VGA Color STN LCD Display, CPU, RAM 128 KB Flash, VGA onboard. Built-in Ethernet, parallel mode.	6	5	1	
FA1-146	Storage Oscilloscope	Touch screen : resolution 1024x1024, accuracy less than 1%, controller RS-232 interface, sensor thickness 0.125".	6	5	1	
FA1-147	Logic Analyzer	Finger Scan : Communication method serial 232/422, LCD display, numeric and without for entry. STN Color LCD.	6	5	1	
FA1-148	Universal Programmable	Barcode/magnetic reader : Handheld/swipe method, laser/visible red LED light source, RS232C, decoding capability	6	5	1	
FA1-149	Universal Gang Programmer	UPC/EAN/JAN/Code 128/39/39 full ASCII/Pharmacode 39/interleaved 2 of 5.	11	10	1	
FA1-150	EPROM Eraser	0-20 Volt variable, 5 A, Fine Variable output voltage control.	6	5	1	
FA1-151	Function generator	Bandwidths of 60 MHz, 100 MHz, 200 MHz in 2 and full 4 channel models.	2	1		
FA1-152	Frequency Counter	68 channels (4 are clock channels). Supports PAL, GAL, PEEL, EPD, EPL, FPGA, CPLD from Altera, AMD, Atmel, Lattice, Lucent Technologies (AT&T), Motorola, TI, Xilinx. Can perform functional vector tests on programmable logic devices as well.	4	4		
FA1-153	Industrial Software	Support programming up to 8 EPROM, EEPROM FLASH, microcontrollers, GAL, Serial PROM, DSP, and other device types.	6	5	1	
FA1-154	Multimedia Projector	The has room for up to 8 interchangeable. Electronic timer adjusts UV exposure from 10 to 60 minutes, This ensure that all 24, 28, and 32 pin ICs are positioned correctly for maximum UV exposure, Anti-static sponge surfaces provide ICs with protection from.	4	4		
FA1-155	Personal Computer	Frequency range : sine or square waveform: 1 μ Hz to 15 MHz	6	5	1	
FA2-1	Personal Computer for Final Project room	Frequency input : 10 ¹⁰ Hz to 300 MHz	6	5	1	
		SCADA Software, MMI, Data Base Management, Monitoring and Control, Driver for others equipment controller.	1	1		
		Intelution	1	1		
		Wonderware	1	1		
		Genie	1	1		
		Resolution true XGA up to UXGA	1	1		
		Latest version Pentium III, RAM 128MB	6	5	1	

Requested Equipment List : Factory Automation

No.	Description	Specification	Total	Priority		
				A	B	C
FA2-2	Multitester	Digital Multi meter, scale 4digit, c/w clamp probe for current, RS232C cable DMM Link software.ref. PC100	20	20		
FA2-3	Frequency Counter	Frequency input :10 ⁻¹⁰ Hz to 300 MHz	5	5		
FA2-4	Function generator	Frequency range : sine or square waveform: 1 μ Hz to 15 MHz	5	5		
FA2-5	Storage Oscilloscope	Bandwidths of 60 MHz, 100 MHz, 200 MHz in 2 and full 4 channel models.	1	1		
FA2-6	Power supply	0-20 Volt variable, 5 A, Fine Variable output voltage control	10	10		
FA2-7	Signal Conditioning	Signal Conditioning Ics, 1B31A	5	5		
		Signal Conditioning Ics, 1B32A	5	5		
		Signal Conditioning Ics, 1B41A	5	5		
		Signal Conditioning Ics, 1B51A	5	5		
		Signal Conditioning Ics, NE5521	5	5		
		Signal Conditioning Ics, ICL7660C	5	5		
		Isolated Thermocouple	5	5		
		Isolated DC I/O	5	5		
		Isolated RTD	5	5		
		Isolated Strain gauge	5	5		
		Speed	5	5		
		Analog/pulse/data output	5	5		
FA2-2	Trafo instrument	ZCT Toroidal deameter 22mm	2	2		
		Current Transformer, GS-100, 500/5A, 50-60	2	2		
		Summation Current Transformer, , 500/5A, 50-60 Hz	2	2		
FA2-3	Tele-measuring support equipment (Radio Communication Module)	Wireless Network, Frequency Band 2400-2483.5 MHz, Modulation Technique Direct Sequence Spread Spectrum (CCK, DQPSK, PC Card	2	2		
		Access Point	1	1		
		Compact Omnidirectional Antenna Kit	1	1		
		Directional Mini-Rflector Grid Antenna Kit	2	2		
		Software Support/Driver	1	1		

Requested Equipment List : Factory Automation

No.	Description	Specification	Total	Priority		
				A	B	C
FA2-4	Data Acquisition and Control Module	General Specification for Remote data Acquisition and control Module: RS 485 to host (2 wire), remote configuration via software, ASCII Command/respon protocol, built in watch dog timer, 10V to 30 V power				
		8 chanel Analog Input Module (16 bit resolution, software config for T/C, low level voltage or mA input, 300 Vdc isolation, digital innut, digital output)	6	6		
		8 Channel Thermocouple Input Module	6	6		
		RTD Input Module	6	6		
		8 Channel Strain gauge Input Module	6	6		
		Analog Output Module	6	6		
		Counter/Frequency Input Module	6	6		
		Isolated RS232 to RS 485/422 Converter	6	6		
		Specification for Distributed data Acquisition and control system : Support 4 I/O slots (up to 64 I/O points), remote programmable input types and range, 3 ways isolation and watchdog timer supervisor, Built in diagnostic, 16-bit microprocessor, up to 256 KB flash ROM, 256 KB SRAM, Built-in ROM-DOS 2 communication port supported (RS-				
		8 channel analog input module	6	6		
		3 channel RTD input module	6	6		
		8 channel high speed analog input module	6	6		
		7 channel thermocouple input module	6	6		
		4 channel analog output module	6	6		
		16 channel digital input module	6	6		
		16 channel digital output module	6	6		
		Power supply switching	6	6		
FA2-5	Embedded PC	Pentium III Processor based 5.25" size, VGA/LCD, Ethernet and U2 ACSI, Video, TV, Audio, LVDS, SSD, SDRAM 512 MB, PCI/ISA Slot, USB, EIDE, serial, LPT, FDD.	2	2		
		Monitor VGA	2	2		
		Cable, Connector, and Accessories	2	2		
		Hardisk	2	2		
FA2-6	Industrial PC	High performance industrial computer architecture based on the standard PCI bus.	1	1		
FA2-7	Panel PC	Panel PC with 15" TFT LCD Display and touch screen, Intel Celeron, SDRAM 256 MB, HDD, FDD, CD-ROM/DVD-ROM drive, Bus Expansion accessories stand kit.	2	2		
FA2-8	Data entry equipment	Touch screen : resolution 1024x1024, accuracy less than 1%, controller RS-232 interface, sensor thickness 0.125"	6	6		
FA2-9	Universal Programmable	Supports PAL, GAL, PEEL, EPLD, EPL, FPGA, CPLD from Altera, AMD, Atmel, Lattice, Lucent Technologies (AT&T), Motorola, TI, Xilinx. Can perform functional vector tests on programmable logic devices as	2	2		
FA2-10	Universal Gang Programmer	Support programming up to 8 EPROM, EEPROM FLASH, microcontrollers, GAL, Serial PROM, DSP, and other device types. The has room for up to 8 interchangeable	1	1		

Requested Equipment List : Factory Automation

No.	Description	Specification	Total	Priority		
				A	B	C
FA2-11	EPROM Eraser	Electronic Timer adjusts UV exposure from 10 to 60 minutes, This ensure that all 24, 28, and 32 pin ICs are positioned correctly for maximum UV exposure, Anti-static sponge surfaces provide ICs with protection from	2	2		
FA2-12	Industrial Software	SCADA Software, MMI, Data Base Management, Monitoring and Control, Driver for others equipment controller.				
		Intellution,	1	6		
		wonderware	1	6		
		Advantech FX	1	6		
FA2-13	Programmable Logic Controller	SIEMENS, CPU, Power Supply, I/O Card, Communication I/O	6	6		
FA3-1	Personal Computer for lecturer room		5	3	2	
FA4-1	Laboratory table & Chair set		11	11		
FA4-2	Cabinet		10	10		
FA4-3	Laboratory table & Chair set for Final Project Room		11	11		
FA4-4	Cabinet for Final project room		2	2		
FA4-5	Laboratory table & Chair set for Lecturer Room Room		11	11		
FA4-6	Cabinet for Lecturer room		4	4		

Requested Equipment List : Power System and Electrical Machine

No.	Description	Specification	Total	Priority		
				A	B	C
PE1-1	AC Ammeter	1, 5, 10, 20a, Class 0.5	6	5	1	
PE1-2	AC Ammeter	100A, Class 0.5	12	10	2	
PE1-3	AC Ammeter	0 to 5A	12	10	2	
PE1-4	AC Mili Ammeter	0 to 200mA, Class 0.5	12	10	2	
PE1-5	AC Voltmeter	0 to 150V, Class 0.5	6	5	1	
PE1-6	AC Voltmeter	0 200V, Class 0.5	6	5	1	
PE1-7	AC Voltmeter	0 to 300V Class 0.5	6	5	1	
PE1-8	AC Voltmeter	0 to 500V Class 0.5	6	5	1	
PE1-9	AC Voltmeter	0 to 200mA, Class 0.5	6	5	1	
PE1-10	AC Voltmeter	0 to 150V	12	10	2	
PE1-11	AC Voltmeter	0 to 30V	12	10	2	
PE1-12	AC Voltmeter	0 to 300V	6	5	1	
PE1-13	DC Mili Ammeter	0.3 to 30mA	12	10	2	
PE1-14	DC Ammeter	0.1 to 3A	12	10	2	
PE1-15	DC Micro Ammeter	0 to 300mA	12	10	2	
PE1-16	DC Mili Ammeter	0.3 to 30mA	12	10	2	
PE1-17	DC Ammeter	30A, Class 0.5	12	10	2	
PE1-18	DC Mili Ammeter	0.1 to 3mA	6	5	1	
PE1-19	DC Mili Ammeter	1 to 30mA	6	5	1	
PE1-20	DC Mili Ammeter	10 to 300mA	6	5	1	
PE1-21	DC Voltmeter	0 to 10V	12	10	2	
PE1-22	DC Voltmeter	0 to 100V	12	10	2	
PE1-23	DC Voltmeter	12/24V	12	10	2	
PE1-24	DC Voltmeter	300V, Class 1.0	12	10	2	
PE1-25	DC Voltmeter	1,000V, Class 0.5	12	10	2	
PE1-26	Digital Counter	520MHz	6	5	1	
PE1-27	Digital Multimeter		6	5	1	
PE1-28	Electronic Voltmeter	National VP-960A or equivalent	6	5	1	
PE1-29	LCR Meter	OSK 17825 or equivalent	6	5	1	
PE1-30	RLC Equipment	Yamabishi 3UL-200-6B or equivalent	6	5	1	
PE1-31	Slide Condenser	Yamabishis S3C-380 or equivalent	6	5	1	
PE1-32	Slide Reactor	Yamabishi S3L-380-72 or equivalent	6	5	1	
PE1-33	Regulated DC Power Supply	Kikusui PAD 250-15L or equivalent	6	5	1	
PE1-34	Function Generator	National VP-7422A or equivalent	6	5	1	
PE1-35	Decaded Capacitor	HP 4440-B or equivalent	6	5	1	
PE1-36	Decaded Inductor	ANDO AM-3301 or equivalent	6	5	1	
PE1-37	Decaded Resistor	YEW 2786 or equivalent	6	5	1	
PE1-38	Digital Counter	LEADER LDC-824 or equivalent	3	3		
PE1-39	Digital Multimeter	National VP-2501A or equivalent	6	5	1	
PE1-40	Digital Storage Oscilloscope	Iwatsu DS-6411 or equivalent	3	2	1	
PE1-41	LCR Bridge	LEADER LCR-740 or equivalent	3	3		
PE1-42	Oscilloscope	National VP-5231A or equivalent	6	5	1	
PE1-43	Dynamic Signal Analyzer	HP 35670A or equivalent	6	5	1	
PE1-44	Synthesized Function	YEW FG-120 or equivalent	6	5	1	
PE1-45	True rms Multimeter	APPA 205 or equivalent	6	5	1	
PE1-46	Digital Power Factor Meter	YEW 2524 or equivalent	6	5	1	
PE1-47	Temperature Controlled Soldering Station	Goot PX-10 or equivalent	6	5	1	
PE1-48	Automatic Voltage Regulator	Tokyo Rikosha ASC-2.3 or equivalent	6	5	1	
PE1-49	Digital Clamp Meter	YEW 2354 03 or equivalent	3	3		
PE1-50	Coil Winding Machine	Shin Tokyo MKD-200 or equivalent	2	1	1	
PE1-51	Eddy Current Transformer	Seikosya EM-3 or equivalent	3	3		
PE1-52	External Current Transformer	YEW 2255 or equivalent	6	5	1	
PE1-53	Wattmeter	1 phase, 120W, Class 0.5	6	5	1	
PE1-54	Wattmeter	3 phase, 120W, Class 0.5	6	5	1	
PE1-55	Insulation Tester	1,000V	3	3		
PE1-56	Insulation Resistance Meter	ANDO VMG-13B or equivalent	3	3		
PE1-57	Power Factor Meter	YEW 2039 or equivalent	3	3		

Requested Equipment List : Power System and Electrical Machine

No.	Description	Specification	Total	Priority		
				A	B	C
PE1-58	Power Hi Tester	HIOKI 3332 or equivalent	6	5	1	
PE1-59	Load Resistor	5kW, 380V, 7.6A	3	3		
PE1-60	Load Capacitor	3kW, 100V, 30A	3	3		
PE1-61	Inverter		6	5	1	
PE1-62	Logic Analyzer	68ch	1			
PE1-63	Synchronous Generator Parallel Operational Panel	380V, 2kW, 1,500rpm	3	3		
PE1-64	DC Motor -DC Generator Panel	100V, 2.2kW	3	3		
PE1-65	Experiment Apparatus for Three Phase Induction Motor	380V, 2.2kW, 1,500rpm	3	3		
PE1-66	Experiment Apparatus for Static Converter-fed DC		1	1		
PE1-67	Experiment Apparatus for Static Converter-fed Asynchronous Machine		1	1		
PE1-68	Experiment Apparatus for Transformer		1	1		
PE1-69	Experiment Apparatus for DC Machine		1	1		
PE1-70	Experiment Apparatus for Asynchronous Machine		1	1		
PE1-71	Experiment Apparatus for Synchronous Generator		1	1		
PE1-72	Electrical Machine Teaching Software for The Electrical		1	1		
PE1-73	Machine Laboratory Software for The Electrical		1	1		
PE1-74	Machine Virtual Laboratory		1	1		
PE1-75	DSP Card		2	2		
PE1-76	Personal Computer		4	4		
PE1-77	ADAM Series		4	4		
PE1-78	Inverter		4	4		
PE1-79	Current Transformer Sensor		6	6		
PE1-80	Voltage Sensor		6	6		
PE1-81	Experiment Apparatus for Power Electronics		5	5		
PE1-82	Com3 Lab Master Unit for Power Electronics		1	1		
PE1-83	LCD Projector		1	1		
PE1-84	Tool Set		6	6		
PE1-85	Transformer 1 phase		6	6		
PE1-86	Transformer 3 phase		6	6		
PE1-87	Voltage Regulator 1 phase		3	3		
PE1-88	Voltage Regulator 3 phase		3	3		
PE1-89	DC Power Source		3	3		
PE2-1	Personal Computer for Final Project Room	CPU : Pentium III 866MHz HDD : 10GB	5	5		
PE3-1	Personal Computer for Lecturer Room	CPU : Pentium III 866MHz HDD : 10GB	5	3	2	
PE3-2	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
PE3-3	Cabinet	1,800 x 500 x 2,300mm	6	6		
PE3-4	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
PE3-5	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
PE3-6	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
PE3-7	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Electronics Fundamental

No.	Description	Specification	Total	Priority		
				A	B	C
EF1-1	Function Generator	Sine, Square, Trianggle, Pulse, 1microHz to 2MHz	6	5	1	
EF1-2	Digital Storage Oscilloscope	1GS/s, 500MHz, 4ch, 3.5"FDD	6	5	1	
EF1-3	Programmable DC Source	Accuracy : 0.01% Resolution : 100nV Low Noise : 15micro Vp-p	6	5	1	
EF1-4	DC Power Supply	Voltage : 0 to 18V Current : 0 to 1A	6	5	1	
EF1-5	Electronic Voltmeter	Range : 0.1V to 1,000V Accessories : RF Probe	6	5	1	
EF1-6	Lux Meter	Range : 100/300/1,000/3,000lux	6	5	1	
EF1-7	Digital Multimeter	Accuracy : 0.3% Function : Multi Others : PC Link, Tru RMS function : multi	6	5	1	
EF1-8	Analog Multimeter	Mesurment Parameter : DCV, ACV, DCA, Ohm, C, dB, hFE	6	5	1	
EF1-9	Thermometer	Range : - 50 to 1,200 C dgree Resolution : 1 C dgree	6	5	1	
EF1-10	FFT Analyzer	Range : 10mHz to 100kHz Channel : 2	6	5	1	
EF1-11	Universal Counter	Range : 1mHz to 2 GHz	6	5	1	
EF1-12	DC Ammeter	Range : 0.3 to 30mA	12	10	2	
EF1-13	DC Ammeter	Range : 10 to 1,000mA	12	10	2	
EF1-14	DC micro Ammeter	Range : 30 to 3,000micro A	12	10	2	
EF1-15	DC micro Ammeter	Range : 10 to 300micro A	12	10	2	
EF1-16	DC Voltmeter	Range : 0.3 to 30V	12	10	2	
EF1-17	Audio Analyzer	Range : 0.16Hz to 159.9kHz	6	5	1	
EF1-18	Random Noise Generator	A : 020dB to 20dB 50Hz to 50kHz	6	5	1	
EF1-19	Tachometer	Range : 1 to 833rps 120 to 50,000rpm	6	5	1	
EF1-20	Slid Voltage Regulator	range : 0 to 260V	6	5	1	
EF1-21	Curve Tracer		1	1		
EF1-22	X-Y Recorder		1	1		
EF2-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
EF2-2	Cabinet	1,800 x 500 x 2,300mm	6	6		

Requested Equipment List : Digital Electronics

No.	Description	Specification	Total	Priority		
				A	B	C
DE1-1	Function Generators	Digital, 1Hz to 2MHz, 0.1% tolerant	6	5	1	
DE1-2	Frequency Counter	Digital, 1,000MHz, 0.1% tolerant	6	5	1	
DE1-3	Digital Storage Oscilloscope	100MHz, Diskette Drive + PC-Interface	6	5	1	
DE1-4	Multimeter	Digital, Autorange, 0 to 1,000V, 0 to 20A, 0 to 49Mohm, PC-interface	6	5	1	
DE1-5	Logic Probe	TTL & CMOS Logic Selector, Standard Type, 3state indicator, Reset, Hold	6	5	1	
DE1-6	Logic Pulser	Standard Type, TTL & CMOS Logic Selector	6	5	1	
DE1-7	Basic Logic Circuits Trainer	Content : Basic Logic Gates, Flip-flops, Adder, Subtractor, w/Cmoplete I/O I.e. Switch, 7Segment LED	6	5	1	
DE1-8	Advanced Logic Circuits Trainer	Content : Shift Register, Up/Down Counter, Decoder, Encoder, Arithmetic Logic Unit, w/complete I/O I.e. switch, 7 segment LED	6	5	1	
DE1-9	Logic Analyser	100MHz, Diskette Drive + PC-Interface	6	5	1	
DE1-10	A/D D/A Conversion Module	Multi channel, Programmable using switch and LED, w/PC interface, additional Module I.e. Speech Processing Module, etc.	6	5	1	
DE1-11	Power Supply	0 to 18V, 0 to 2A	6	5	1	
DE2-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
DE2-2	Cabinet	1,800 x 500 x 2,300mm	6	6		
DE2-3	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
DE3-4	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
DE3-5	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
DE3-6	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Interlligent Control and Robotics

No.	Description	Specification	Total	Priority		
				A	B	C
IC1-1	Function Generator	Sine, Square, Triangle, Ramp, Noise	6	5	1	
IC1-2	Digital Oscilloscope	4ch, 100MHz	6	5	1	
IC1-3	Complete DSP La Kit		6	5	1	
IC1-4	Digital Multimeter		6	5	1	
IC1-5	ECG Standard Function Generator	Frequency Tolerance : min. +/- 1% Selected Amplitude : 0.5, 1, 1.5, 2mV Display : 16Character alphanumeric LCD	6	5	1	
IC1-6	Remote Monitoring Modul Set		6	5	1	
IC1-7	Biopac Student Lab Stimulator		6	5	1	
IC1-8	MP 150 Starter System		6	5	1	
IC1-9	BSL ULTIMATE SYSTEM		6	5	1	
IC1-10	DC Power Supply	+/- 3V, 5V, 9V, 12V	12	10	2	
IC1-11	Optical Encoder	GPI 9220 or equivalent	6	5	1	
IC1-12	AD/DA Converter		6	5	1	
IC1-13	Simulation Software for Fuzzy		6	5	1	
IC1-14	Simulation Software for Neural		6	5	1	
IC1-15	Simulation Software for GA		6	5	1	
IC1-16	Simulation Software for Digital Control		6	5	1	
IC1-17	Indoor Robot Line		6	5	1	
IC1-18	Single-board Computer	CPU : 8031/8051	6	5	1	
IC1-19	Inverted Pendulum Trainer		6	5	1	
IC1-20	Magnetic Levitation Trainer		6	5	1	
IC1-21	RS-232C Break Box		6	5	1	
IC1-22	Arm Robot	AW1 or equivalent	6	5	1	
IC1-23	Ball and Beam Demonstrator		6	5	1	
IC1-24	Stepping Motor		6	5	1	
IC1-25	DC Motor w/Driver		6	5	1	
IC1-26	Servo Motor w/Driver		6	5	1	
IC1-27	Digital Camera	3.3 M Pixel, 64MB, x 3 Zoom	1	1		
IC1-28	Electrical Safties Demonstrator		6	5	1	
IC1-29	Panel PC		6	5	1	
IC1-30	Data Acquisition Module	ADAM-4012, 4050, 5000-485 or equivalent	6	5	1	
IC1-31	Radio Modem	ADAM-4550 or equivalent	12	10	2	
IC1-32	PLC Module	AB Analog PLC Trainer or equivalent	6	5	1	
IC1-33	DCS Training Module		6	5	1	
IC1-34	Mechatronic System Trainer		6	5	1	
IC1-35	Graphic Recorder		6	5	1	
IC1-36	Converter	232-485, ADAM 4520 or equivalent	6	5	1	
IC2-1	Function Generator		5	5		
IC2-2	DC Power Supply	0 to 35V, 0 to 10A	5	5		
IC2-3	Digital Storage Oscilloscope	30MHz	5	5		
IC2-4	PC for Final Project	CPU : Pentium III 866MHz HDD : 10GB	1	1		
IC2-5	DSP Boad and Software		5	5		
IC2-6	Digital Multimeter		5	5		
IC2-7	AD/DA Converter	ADAM series	1	1		
IC2-8	Simulation Software for Fuzzy	Math Lab	1	1		
IC2-9	Simulation Software for Neural	Math Lab	1	1		
IC2-10	Simulation Software for GA	Math Lab	1	1		
IC2-11	Simulation Software for Digital Control	Math Lab	5	5		
IC2-12	Single-board Computer	8031/8051	5	5		
IC2-13	Printer		2	2		
IC2-14	Scanner	1,200 x 1,200	1	1		
IC2-15	Digital Camera	3.3 M Pixel, 64MB, 2,240 x 1,500, x3 Zoom	1	1		
IC2-16	The Indoor Robot Line		1	1		
IC2-17	Arm Robot	AW1 or equivalent	1	1		

Requested Equipment List : Interlligent Control and Robotics

No.	Description	Specification	Total	Priority		
				A	B	C
IC3-1	Personal Computer for Lecturer Room	CPU : Pentium III 866MHz HDD : 10GB	5	3	2	
IC4-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
IC4-2	Cabinet	1,800 x 500 x 2,300mm	6	6		
IC4-3	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
IC4-4	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
IC4-5	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
IC4-6	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Automatic Control

No.	Description	Specification	Total	Priority		
				A	B	C
AC1-1	DC Power Supply	Out-put : 0 to 35V, 0 to 19A	6	5	1	
AC1-2	Oscilloscope	DC to 30MHz	6	5	1	
AC1-3	Frequency Counter	10Hz to 80MHz (direct), 50MHz to 520MHz (pre-scaler)	6	5	1	
AC1-4	X-Y Recorder	DC servo system, 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20mV/cm	6	3	2	1
AC1-5	Digital Multimeter		6	5	1	
AC1-6	Process Trainer	#602 or equivalent	1	1		
AC1-7	Personal Computer	CPU : Pentium III 866MHz RAM : 256MB HDD : 20GB Accessories : AD/DA converter Card	10	6	4	
AC1-8	PLC Trainer	Modular System, 32Points I/O	6	5	1	
AC1-9	Sensor & Transducer Interfacing Trainer	Industrial Standard, 0 to 10V, 4 to 20mA, RS232C Interface, 8 Experiments module	1	1		
AC1-10	Mechatronics Lab	KENTAC 2200ML or equivalent	2	1	1	
AC1-11	Digital Servo Board		2	1	1	
AC1-12	DC Motor	DC 12V, 6,500rpm	2	1	1	
AC1-13	Analogue & Digital Servo Fundamental Trainer		2	1	1	
AC1-14	Fundamental Pneumatic	ED Laboratory ED-7600 or equivalent	2	1	1	
AC1-15	Pneumatic Application Trainer	ED Laboratory PTM-7412 or equivalent	3	2	1	
AC1-16	Fundamental Hydraulic	ED Laboratory ED-7700 or equivalent	3	2	1	
AC1-17	Hydraulic Application Trainer	ED Laboratory ED-7500 or equivalent	3	2	1	
AC1-18	Arm Robot Trainer	ED Laboratory ED-7220C or equivalent	2	2		
AC1-19	Relay Sequence Controller		3	2	1	
AC1-21	Verilog HDL		10	6	4	
AC1-22	Synopsis + Cadens		10	6	4	
AC1-23	Qartus II Emulator		10	6	4	
AC1-24	APEX EPGA Module		10	6	4	
AC1-25	Software for Simulation		6	5	1	
AC1-26	Software for Training Kit		6	5	1	
AC1-27	Software for PID		6	5	1	
AC1-28	Function Generator		6	5	1	
AC2-1	DC Power Supply	0 to 35V, 0 to 10A	6	5	1	
AC2-2	Digital Storage Oscilloscope	100MHz	5	5		
AC2-3	Function Generator	2MHz	5	5		
AC2-4	Frequency Counter	10 to 80MHz (direct), 50MHz to 520MHz (pre-	3	3		
AC2-5	Digital Multimeter		5	5		
AC2-6	PC	CPU : Pentium III 866MHz HDD : 10GB	5	5		
AC2-7	Printer (Color)	Type : Laser Type Size of Printing Paper : A4 Accessories : Table	2	2		
AC2-8	Scanner	1,200 x 1,200	1	1		
AC2-9	Simulation Software for Control Automation	Math Lab (Control Automation Tool Box)	2	2		
AC2-10	Arm Robot Trainer		1	1		
AC3-1	Personal Computer for Lecturer Room	CPU : Pentium III 866MHz HDD : 10GB	5	3	2	
AC4-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
AC4-2	Cabinet	1,800 x 500 x 2,300mm	6	6		
AC4-3	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
AC4-4	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
AC4-5	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
AC4-6	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Interlligent Control and Robotics

No.	Description	Specification	Total	Priority		
				A	B	C
IC1-1	Function Generator	Sine, Square, Triangle, Ramp, Noise	6	5	1	
IC1-2	Digital Oscilloscope	4ch, 100MHz	6	5	1	
IC1-3	Complete DSP La Kit		6	5	1	
IC1-4	Digital Multimeter		6	5	1	
IC1-5	ECG Standard Function Generator	Frequency Tolerance : min. +/- 1% Selected Amplitude : 0.5, 1, 1.5, 2mV Display : 16Character alphanumeric LCD	6	5	1	
IC1-6	Remote Monitoring Modul Set		6	5	1	
IC1-7	Biopac Student Lab Stimulator		6	5	1	
IC1-8	MP 150 Starter System		6	5	1	
IC1-9	BSL ULTIMATE SYSTEM		6	5	1	
IC1-10	DC Power Supply	+/- 3V, 5V, 9V, 12V	12	10	2	
IC1-11	Optical Encoder	GPI 9220 or equivalent	6	5	1	
IC1-12	AD/DA Converter		6	5	1	
IC1-13	Simulation Software for Fuzzy		6	5	1	
IC1-14	Simulation Software for Neural		6	5	1	
IC1-15	Simulation Software for GA		6	5	1	
IC1-16	Simulation Software for Digital Control		6	5	1	
IC1-17	Indoor Robot Line		6	5	1	
IC1-18	Single-board Computer	CPU : 8031/8051	6	5	1	
IC1-19	Inverted Pendulum Trainer		6	5	1	
IC1-20	Magnetic Levitation Trainer		6	5	1	
IC1-21	RS-232C Break Box		6	5	1	
IC1-22	Arm Robot	AW1 or equivalent	6	5	1	
IC1-23	Ball and Beam Demonstrator		6	5	1	
IC1-24	Stepping Motor		6	5	1	
IC1-25	DC Motor w/Driver		6	5	1	
IC1-26	Servo Motor w/Driver		6	5	1	
IC1-27	Digital Camera	3.3 M Pixel, 64MB, x 3 Zoom	1	1		
IC1-28	Electrical Safties Demonstrator		6	5	1	
IC1-29	Panel PC		6	5	1	
IC1-30	Data Acquisition Module	ADAM-4012, 4050, 5000-485 or equivalent	6	5	1	
IC1-31	Radio Modem	ADAM-4550 or equivalent	12	10	2	
IC1-32	PLC Module	AB Analog PLC Trainer or equivalent	6	5	1	
IC1-33	DCS Training Module		6	5	1	
IC1-34	Mechatronic System Trainer		6	5	1	
IC1-35	Graphic Recorder		6	5	1	
IC1-36	Converter	232-485, ADAM 4520 or equivalent	6	5	1	
IC2-1	Function Generator		5	5		
IC2-2	DC Power Supply	0 to 35V, 0 to 10A	5	5		
IC2-3	Digital Storage Oscilloscope	30MHz	5	5		
IC2-4	PC for Final Project	CPU : Pentium III 866MHz HDD : 10GB	1	1		
IC2-5	DSP Boad and Software		5	5		
IC2-6	Digital Multimeter		5	5		
IC2-7	AD/DA Converter	ADAM series	1	1		
IC2-8	Simulation Software for Fuzzy	Math Lab	1	1		
IC2-9	Simulation Software for Neural	Math Lab	1	1		
IC2-10	Simulation Software for GA	Math Lab	1	1		
IC2-11	Simulation Software for Digital Control	Math Lab	5	5		
IC2-12	Single-board Computer	8031/8051	5	5		
IC2-13	Printer		2	2		
IC2-14	Scanner	1,200 x 1,200	1	1		
IC2-15	Digital Camera	3.3 M Pixel, 64MB, 2,240 x 1,500, x3 Zoom	1	1		
IC2-16	The Indoor Robot Line		1	1		
IC2-17	Arm Robot	AW1 or equivalent	1	1		

Requested Equipment List : Radio Wave and Propagation

No.	Description	Specification	Total	Priority		
				A	B	C
RW1-1	DC Power Supply	0 to 12A, 0 to 35V	6	5		1
RW1-2	DC Micro Ammeter	30 to 3,000microA	6	5		1
RW1-3	Personal Computer	CPU : Pentium III 866MHz HDD : 10GB	6	3	3	
RW1-4	Set of Transmission Line Demonstrator	TLD511 or equivalent	6	3	2	1
RW1-5	Set of Microwave Trainer	14T100 or equivalent, H/X-Band Operation	6	3	2	1
RW1-6	Microwave Counter	100MHz to 27GHz, ADVANTEC R5373 or equivalent	6	5		1
RW1-7	Function Generator	0.001Hz to 5MHz, -60dB to 0dB	6	5		1
RW1-8	DC Mili Ammeter	30mA to 3,000mA	6	5		1
RW1-9	Standard Dipole Antenna	100MHz to 500MHz	2	2		
RW1-10	Standard Dipole Antenna	450MHz to 2GHz	2	2		
RW1-11	Standard Log Periodic Antenna	100MHz to 2GHz	2	2		
RW1-12	Standard Signal Generator	100MHz to 18GHz	3	2		1
RW1-13	Spectrum Analyzer	9kHz to 8GHz	4	3		1
RW1-14	Tripod for Antenna		4	2	2	
RW1-15	Micro Strip Antenna Trainer	Feedback MST532-1 or equivalent	6	5		1
RW1-16	DC-Current Measurement	1microA to 10.9A	12	6	6	
RW1-17	AC Voltage Measurement	1microA to 19.9V	12	6	6	
RW1-18	Standard Horn Antenna	S-Band, C-Band, X-Band	2	2		
RW1-19	Phase Shifter	ANDO WRJ10 or WR90 or equivalent	12	6	6	
RW1-20	Parabolic Antenna w/Digital Satellite Receiver	C-Band	2	1	1	
RW1-21	Cellular Telephony Trainer	De Lorenze DL3155M31 or equivalent	3	3		
RW1-22	Trainer for Interactive Multipurpose Electronics	De Lorenze DL3155AL or equivalent	3	3		
RW1-23	Mobile Communication Trainer	ED-2930 or equivalent	3	3		
RW1-24	Digital Storage Oscilloscope	DC to 100MHz	3	3		
RW1-25	Logic Analyzer	VP-362A or equivalent	3	3		
RW1-26	Smith Chart Tool Set		1	1		
RW1-27	Electromagnetic Simulation and Optimization Tools		1	1		
RW1-28	RF Transformer	3kHz to 200MHz, Impedance Ratio : 1:1 to	2	2		
RW1-29	Delay Line and Phase Shifter	5 to 1,000MHz	2	2		
RW1-30	Return Loss Bridge	5 to 3,000MHz	2	2		
RW1-31	RF Amplifier	2.5kHz to 8GHz	3	3		
RW1-32	Power Splitters/Combiner	2kHz to 10GHz	2	2		
RW1-33	Combination Wave Generator	1, 2/50 micro sec. to 8/20micro sec.	1	1		
RW1-34	Termination Type Wattmeter	140 to 500MHz	6	3	3	
RW1-35	VHF Transmitter Receiver	170 to 200MHz, 2W	6	3	3	
RW1-36	Attenuator	0 to 10dB, Step : 1dB	6	3	3	
RW1-37	Attenuator	0 to 50dB, Step : 10dB	6	3	3	
RW1-38	Through Line Type Wattmeter	140 to 500MHz	6	3	3	
RW1-39	Standard Signal Generator	0.1 to 1.04GHz	6	3	3	
RW1-40	Frequency Counter	80 to 520MHz	6	3	3	
RW1-41	Universal Counter	DC to 200MHz	6	3	3	
RW1-42	Oscilloscope	30MHz	6	3	3	
RW1-43	Variable Standard Capacitance	50 to 900pF	6	3	3	
RW1-44	Variable Standard Resistance	0 to 999ohm	6	3	3	
RW1-45	Electronic Voltmeter	DC 1,000MHz	6	3	3	
RW1-46	Frequency Meter	500MHz to 16GHz	6	5		1
RW2-1	Standard Signal Generator	100Hz to 6GHz	2	2		
RW2-2	Function Generator	0.1Hz to 5MHz	2	2		
RW2-3	Personal Computer for Final Project Room	CPU : Pentium III 866MHz HDD : 10GB	5	5		
RW2-4	Digital Multimeter	300/1,000V AC/DC, 10/100micro A, 1/10/100mA AC/DC, 1 ohm to 20ohm	3	3		
RW2-5	Analog Multimeter	300/1,000V AC/DC, 10/100micro A, 1/10/100mA AC/DC, 1 ohm to 20ohm	3	3		
RW2-6	Tool Set	Standard	5	3	2	

Requested Equipment List : Radio Wave and Propagation

No.	Description	Specification	Total	Priority		
				A	B	C
RW2-7	Oscilloscope	150MHz	1	1		
RW2-8	Storage Oscilloscope	100MHz	1	1		
RW2-9	Hub	24port	1	1		
RW2-10	DC Power Supply	0 to 12A, 0 to 35V	5	5		
RW3-1	Personal Computer for Lecturer Room	CPU : Pentium III 866MHz HDD : 10GB	5	3	2	
RW4-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
RW4-2	Cabinet	1,800 x 500 x 2,300mm	6	6		
RW4-3	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
RW4-4	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
RW4-5	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
RW4-6	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Optical Communication and Electro-physics

No.	Description	Specification	Total	Priority		
				A	B	C
OP1-1	AC Milli Ammeter	0 to 30mA	6	5		1
OP1-2	AC Voltmeter	0.3mV to 100V	6	5		1
OP1-3	Beam Splitter	50%, 25%, 75%	4	3		1
OP1-4	Beam Splitter	40%, 60%, 50%	4	3		1
OP1-5	Capacity Meter	0 to 1mA	6	5		1
OP1-6	Pulley	Single Block, 10cm diameter	16	5	5	6
OP1-7	Clamping Block	Clamp with Hook	16	5	5	6
OP1-8	Connector Polisher		6	5		1
OP1-9	Convex-convex Mirror	10cm diameter, Various focus, w/holder	3	3		
OP1-10	DC Ammeter	0 to 5A	12	6	1	5
OP1-11	DC Micro Ammeter	0 to 3,000mA	6	5		1
OP1-12	DC Power Supply	Double Voltage, +12V, Linear Step, 12A	6	5		1
OP1-13	DC Voltmeter	0 to 5V	6	5		1
OP1-14	Digital Multimeter		6	5		1
OP1-15	Double Coil Demonstrator		6	1	5	
OP1-16	Electromagnetic Measurement Instrument		6	3	2	1
OP1-17	Equipotential Lines Module		6	5		1
OP1-18	Fault Locator Tool Kits	800microW, 635nm	3	3		
OP1-19	Fiber Attenuator	1 to 15dB	3	3		
OP1-20	Fiber Connector Equipment		6	5		1
OP1-21	Fiber Optic Clip-on Coupler	Coupling efficiency : 0.5dB	6	5		1
OP1-22	Function Generator	100kHz	6	5		1
OP1-23	Galvanometer	Sensitivity : 0.5mA	6	5		1
OP1-24	Glass Medium	Cubic, 10cm x 20cm x 50	3	3		
OP1-25	Helical Spring	Steel, 2N	16	5	5	6
OP1-26	Holder	Metal w/magnetic Lock	3	3		
OP1-27	Knife-edge		3	3		
OP1-28	LASER Source	He-Ne, Polarized (632.8 λ), 5mW	3	3		
OP1-29	Laver	30cm x 40cm x, w/mili meter block	3	1	2	
OP1-30	Magnetic Circuit		6	1	5	
OP1-31	Magnetic Circuit	KMC-5NU or equivalent	6	1	5	
OP1-32	Object		10	5	5	
OP1-33	Optical Fiber	Plastic 2mm diameter, 10m	3	3		
OP1-34	Optical Fiber Connector	Male-Female Connector	24	24		
OP1-35	Optical Power Meter	Digital	6	3	3	
OP1-36	Oscilloscope	200MHz	6	5		1
OP1-37	Parallel Plates Condenser Kit		6	1	5	
OP1-38	Pendulum	100g	16	5	5	6
OP1-39	Plane Mirror	10cm x 20cm	3	3		
OP1-40	Plastic Medium	Cubic, 10cm x 20cm x 50	3	3		
OP1-41	Polarize Analyzer	Angular, 36 degree scale	6	3	3	
OP1-42	Optical Power meter	Operate at 0.8, 1.3, 1.55micro meter	6	5		1
OP1-43	Roll Meter	2m, Metric and British Scale	10	5	5	
OP1-44	Set of 12 Weights	50g each	16	5	5	6
OP1-45	Set of Grating	100, 300,900 lines/mm	3	3		
OP1-46	Set of Holder	metal holder w/magnetic Lock	3	3		
OP1-47	Set of Lenses	Diverging, 10cm diameter, various focus, plus holder	3	3		
OP1-48	Set of Pendulums	40pair of pendulums, each 200g	10	5	5	
OP1-49	Set of Prism	Crown glass, flint glass, quartz glass, pressed	3	3		
OP1-50	Stand Base V Shape	Metal, 35cm(W), 150cm(L)	16	5	5	6
OP1-51	Stand Rod	Metal, 35cm(horizontal), 150(vertical)	16	5	5	6
OP1-52	Stop Watch	Counter, Hour, Minute, Second	16	5	5	6
OP1-53	Variable Pinhole	0.01, 0.02 to 0.1 diameter	3	3		
OP1-54	Variable Resistor	5W, 100W	12	5	5	2
OP1-55	Variable Slit		3	3		
OP1-56	Volt-Stat	0 to 240V rms, 5A	6	5		1

Requested Equipment List : Optical Communication and Electro-physics

No.	Description	Specification	Total	Priority		
				A	B	C
OP1-57	Personal Computer	CPU : Pentium III 866MHz RAM : 128MB HDD : 10GB Monitor : 15"	4	2	2	
OP1-58	Optical Communication Trainer	ED-2980 or equivalent	3	3		
OP1-59	Optoelectronic Trainer	OPCOM-1	5	3		2
OP1-60	Optical Fiber	200m (multi-mode)	3	3		
OP1-61	Optical Fiber	Plastic 2mm diameter, 10m	3	3		
OP1-62	Optical Fiber	2km (multi mode), Connector include	3	3		
OP2-1	Standard Signal Generator	140GHz	2	2		
OP2-2	Function Generator	0.1Hz to 5MHz	2	2		
OP2-3	Personal Computer	CPU : Pentium III 866MHz RAM : 128MB HDD : 10GB Monitor : 15"	5	3	2	
OP2-4	Digital Multimeter	300/1,000V AC/DC, 10/100micro A, 1/10/100mA AC/DC, 1 ohm to 20ohm	2	2		
OP2-5	Analog Multimeter	300/1,000V AC/DC, 10/100micro A, 1/10/100mA AC/DC, 1 ohm to 20ohm	3	3		
OP2-6	Tool Set	Standard	5	3	2	
OP2-7	Oscilloscope	150MHz	1	1		
OP2-8	Storage Oscilloscope	100MHz	1	1		
OP2-9	Hub	24 port	1	1		
OP2-10	DC Power Supply	+/- 0 to 15V, 12A	5	5		
OP3-1	Personal Computer for Lecturer Room	CPU : Pentium III 866MHz RAM : 128MB HDD : 10GB Monitor : 15"	5	3	2	
OP4-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
OP4-2	Cabinet	1,800 x 500 x 2,300mm	6	6		
OP4-3	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
OP4-4	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
OP4-5	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
OP4-6	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Digital Communication

No.	Description	Specification	Total	Priority		
				A	B	C
DC1-1	Standard Signal Generator	140MHz	6	5		1
DC1-2	Oscilloscope	150MHz	6	5		1
DC1-3	Digital Storage Oscilloscope	4ch, 100MHz	6	5		1
DC1-4	Probe	100MHz, 1:1/10:1	12	5	5	2
DC1-5	Spectrum Analyzer	10kHz to 3.5GHz	2	2		
DC1-6	Function Generator	0.1 to 10MHz	6	5		1
DC1-7	PAL Pattern Generator	VHF/UHF	6	5		1
DC1-8	AM/FM Radio Receiver	540 to 1,600kHz/88 to 108MHz	6	5		1
DC1-9	FSK Modem	336kbps	6	5		1
DC1-10	Decaded Capacitor	0 9.9999microF	12	10		2
DC1-11	Decaded Resistor	x 1kohm to 100kohm	12	10		2
DC1-12	Electronic Voltmeter	1 to 1,000V	6	5		1
DC1-13	Frequency Counter	0 to 10MHz	2	2		
DC1-14	Frequency Counter	80MHz to 520MHz	6	5		1
DC1-15	Analog Multimeter		20	10	5	5
DC1-16	Digital Multimeter		10	5	5	
DC1-17	Hand Hold Radio Transceiver	540 to 1,600kHz/88 to 108MHz	6	5		1
DC1-18	DC Power Supply	0 to 35V	12	10		2
DC1-19	Color TV Trainer	FT-212 PAL or equivalent	6	5		1
DC1-20	AM/FM Radio Trainer	540 to 1,600kHz/88 to 108MHz	6	5		1
DC1-21	Basic Module		3	2	1	
DC1-22	Digital Module		3	2	1	
DC1-23	Advanced Module		3	2	1	
DC1-24	TIMS-CAI		3	2	1	
DC1-25	Telephone Set Module		2	2		
DC1-26	DCS Module		2	2		
DC1-27	Relay Matrix Module		2	2		
DC1-28	Digital Exchange Module		2	2		
DC1-29	ISDN Exchange Module		2	2		
DC1-30	Pushbutton Dialer		2	2		
DC1-31	Telephone Training Systemu Module		2	2		
DC1-32	Power Supply Unit		2	2		
DC1-33	LH 19" Plug-in System		2	2		
DC1-34	PABX	150 circuits	1	1		
DC1-35	Personal Computer		2	2		
DC1-36	SOFTTEL 58-900		2	2		
DC1-37	Analog Modulation Module		2	2		
DC1-38	Digital Transmission Module		2	2		
DC1-39	Noise Source Module		2	2		
DC1-40	Transmission Line Module		2	2		
DC1-41	Line Doding Module		2	2		
DC1-42	Fiber Optic Module		2	2		
DC1-43	HT VHF	2m Band	6	5		1
DC1-44	HT UHF	470MHz Band	6	5		1
DC1-45	VSWR meter	for VHF/UHF	6	5		1
DC2-1	Standard Signal Generator	100Hz to 6GHz	2	2		
DC2-2	Function Generator	0.1Hz to 5MHz	2	2		
DC2-3	Oscilloscope	150MHz	1	1		
DC2-4	Storage Oscilloscope	100MHz	1	1		
DC2-5	Analog Multimeter	300/1,000V AC/DC, 10/100micro A, 1/10/100mA AC/DC, 1 ohm to 20ohm	3	3		
DC2-6	Digital Multimeter	300/1,000V AC/DC, 10/100micro A, 1/10/100mA AC/DC, 1 ohm to 20ohm	3	3		
DC2-7	Tool Set	Standard	1	1		
DC2-8	PABX		1	1		
DC2-9	Telephone Set		4	4		
DC2-10	Personal Computer for Final Project Room	CPU : Pentium III 866MHz HDD : 10GB	5	5		

Requested Equipment List : Digital Communication

No.	Description	Specification	Total	Priority		
				A	B	C
DC2-11	Hub	24port	1	1		
DC2-12	Logic Probe	Standard	2	2		
DC2-13	Electronic Voltmeter	1 to 1,000V	2	2		
DC2-14	Frequency Counter	520MHz	2	2		
DC3-1	Personal Computer for Lecturer Room	CPU : Pentium III 866MHz HDD : 10GB	5	3	2	
DC4-1	Laboratory Table & Chair Set	1,800 x 1,200 x 700mm	11	11		
DC4-2	Cabinet	1,800 x 500 x 2,300mm	6	6		
DC4-3	Laboratory Table & Chair Set for Final Project Room	1,600 x 750 x 700mm	7	7		
DC4-4	Cabinet for Final Project Room	1,800 x 500 x 2,300mm	2	2		
DC4-5	Laboratory Table & Chair Set for Lecturer Room	1,000 x 750 x 700mm	10	10		
DC4-6	Cabinet for Lecturer Room	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Computer Programming I

No.	Description	Specification	Total	Priority		
				A	B	C
PC1-1	PC (for Student x 30, Lecturer x 1, Head of Laboratory x1)	CPU : Pentium III 866MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card (100BaseTx), Desk, Chair	32	32		
PC1-2	File Server	CPU : Pentium Xeon dual processor 1GHz or equivalent Second Cache : 1MB RAM : 1GB HDD : 60GB (Ultra wide SCSI) Drive : FDD, DVD-RAM Monitor : XGA 15" Accessories : LAN Card (100BaseTx), Desk, Chair	1	1		
PC1-3	Printer (Monochrome)	Type : LASER type Size of Printing Paper : A4 Accessories : Table	1	1		
PC1-4	Printer (Color)	Type : Ink Jet type Size of Printing Paper : A4 Accessories : Table	1	1		
PC1-5	Printer Server	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card (100BaseTx), Desk	1	1		
PC1-6	Router	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC1-7	Switching Hub	Type : 100Base Tx, 24 ports	2	2		
PC1-8	UPS for Server, Router, Switching Hub		1	1		
PC1-9	AVR for all PCs		1	1		
PC1-10	Software	Windows 2000 for Server	1	1		
		Windows 2000 for PCs	33	33		
		Visual C++	31	31		
		Office 2000 (for Lecturer)	2	2		
		Anti Virus	34	34		
		Net Op	31		31	
		Linux for Router	1	1		
PC1-11	LCD Projector	Resolution : XGA Brightness : 800Lumen	1	1		
PC1-12	Screen	Size : 100"	1	1		
PC1-13	Cabinet	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Computer Programming II

No.	Description	Specification	Total	Priority		
				A	B	C
PC2-1	PC (for Student, Lecturer, Head of Laboratory)	CPU : Pentium III 866MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair	32	32		
PC2-2	File Server	CPU : Pentium Xeon dual processor 1GHz or equivalent Second Cache : 1MB RAM : 1GB HDD : 60GB (Ultra wide SCSI) Drive : FDD, DVD-RAM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair	1	1		
PC2-3	Printer (Monochrome)	Type : LASER type Size of Printing Paper : A4 Accessories : Table	1	1		
PC2-4	Printer (Color)	Type : Ink Jet type Size of Printing Paper : A4 Accessories : Table	1	1		
PC2-5	Printer Server	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC2-6	Router	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC2-7	Switching Hub	Type : 100Base T, 24 ports	2	2		
PC2-8	UPS for Server, Router, Switching Hub		1	1		
PC2-9	AVR for all PCs		1	1		
PC2-10	Software	Linux for Server	1	1		
		Linux for PC	33	33		
		Star Office	1	1		
		Windows 2000 for Pc	1	1		
		Anti Virus	1	1		
		Office 2000	1	1		
		Linux for Louter	1	1		
PC2-11	LCD Projector	Resolution : XGA Brightness : 800Lumen	1	1		
PC2-12	Screen	Size : 100"	1	1		
PC2-13	Cabinet	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Computer Programming III

No.	Description	Specification	Total	Priority		
				A	B	C
PC3-1	PC (for Student, Lecturer, Head of Laboratory)	CPU : Power PC G4 Processor 733Mhz RAM : 256MB HDD : 40GB (Ultra ATA) Drive : FDD, DVD-ROM Monitor : XGA 17" Accessories : LAN Card, Desk, Chair	32	32		
PC3-2	File Server	CPU : Power PC G4 dual Processor 733MHz RAM : 256MB HDD : 60GB (Ultra ATA) Drive : FDD, DVD-ROM Monitor : XGA 17" Accessories : LAN Card, Desk, Chair	1	1		
PC3-3	Printer (Monochrome)	Type : LASER type Size of Printing Paper : A4 Accessories : Table	1	1		
PC3-4	Printer (Color)	Type : Ink Jet type Size of Printing Paper : A4 Accessories : Table	1	1		
PC3-5	Printer Server	CPU : Power PC G4 Processor 733MHz RAM : 256MB HDD : 40GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 17" Accessories : LAN Card, Desk	1	1		
PC3-6	Router	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC3-7	Switching Hub	Type : 100Base T, 24 ports	2	2		
PC3-8	UPS for Server, Router, Switching Hub		1	1		
PC3-9	AVR for all PCs		1	1		
PC1-10	Software	Free BSD for Router	1	1		
		Math Lab for Mac (Image Processing Tool Box)	31	31		
		Adobe Image Processing Software	31	31		
PC3-11	LCD Projector	Resolution : XGA Brightness : 800Lumen	1	1		
PC3-12	Screen	Size : 100"	1	1		
PC3-13	Digital Still Camera	3.3 Mega resolution	2	1	1	
PC3-14	Scanner	1,200 x 1,200 resolution	2	1	1	
PC3-15	Matrix Routing Switcher	8 x 8matrix switch, MPEG support	2	1	1	
PC3-16	Image Processing Card	Capture & Image Processing Board (4ch	2	1	1	
PC3-17	TV	29" Flat Type	1	1		
PC3-18	Digital Video Camera	SONY DCR VX-2000 or equivalent	1	1		
PC3-19	Sound System Set	Radio Cassette Recorder	1	1		
PC3-20	Cabinet	1,800 x 500 x 2,300mm	2	2		

Requested Equipment List : ADvanced Programming

No.	Description	Specification	Total	Priority		
				A	B	C
PC4-1	PC (for Student x 30, Lecturer x1, Head of Laboratory x 1, Lecturer Room x 2, Final Project Room x 10)	CPU : Pentium III 866MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair, Head Set	44	39	5	
PC4-2	File Server	CPU : Pentium Xeon dual processor 1GHz or equivalent Second Cache : 1MB RAM : 1GB HDD : 60GB (Ultra wide SCSI) Drive : FDD, DVD-RAM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair	1	1		
PC4-3	Printer (Monochrome, for Student & Lecturer Room)	Type : LASER type Size of Printing Paper : A4 Accessories : Table	2	2		
PC4-4	Printer (Color)	Type : Ink Jet type Size of Printing Paper : A4 Accessories : Table	1	1		
PC4-5	Printer Server	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC4-6	Router	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC4-7	Switching Hub	Type : 100Base T, 24 ports	2	2		
PC4-8	UPS for Server, Router, Switching Hub		1	1		
PC4-9	AVR for all PCs		1	1		
PC4-10	Software	Windows 2000 for Server	1	1		
		Windows 2000 for PCs	44	44		
		Visual C++	41	36	5	
		Visual J++	41	36	5	
		Office 2000 (for Lecturer)	44	39	5	
		Anti Virus	46	41	5	
		Net Op	31		31	
		VM Ware	31		31	
		Map Info	31	31		
		Power Designer	31	31		
		Linux for Louter	1	1		
PC4-11	LCD Projector	Resolution : XGA Brightness : 800Lumen	1	1		
PC4-12	Screen	Size : 100"	1	1		
PC4-13	Cabinet	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Computer Aided Design and Simulation

No.	Description	Specification	Total	Priority		
				A	B	C
PC5-1	PC (for Student x 30, Lecturer x 1, Head of Laboratory x 1, Lecturer's Room x 2, Final Project Room x 10)	CPU : Pentium III 866MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair, Head Set	44	39	5	
PC5-2	File Server	CPU : Pentium Xeon dual processor 1GHz or equivalent Second Cache : 1MB RAM : 1GB HDD : 60GB (Ultra wide SCSI) Drive : FDD, DVD-RAM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair	1	1		
PC5-3	Printer (Monochrome, for Student & Lecturer's Room)	Type : LASER type Size of Printing Paper : A4 Accessories : Table	1	1		
PC5-4	Printer (Color)	Type : Ink Jet type Size of Printing Paper : A4 Accessories : Table	2	2		
PC5-5	Printer Server	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC5-6	Router	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card x 3, Desk	1	1		
PC5-7	Switching Hub	Type : 100Base T, 24 ports	2	2		
PC5-8	UPS for Server, Router, Switching Hub		1	1		
PC5-9	AVR for all PCs		1	1		
PC5-10	Software	Windows 2000 for Server	1	1		
		Windows 2000 for PCs	45	44	1	
		Office 2000 (for Lecturer)	9	9		
		Auto CAD	31	11	20	
		Math Lab (w/Signal Processing Toolbox)	31	11	20	
		PSPICE	31	11	20	
		Anti Virus	46	46		
		Net Op	31		31	
		Power Station (ETAP)	31	11	20	
		Linux for Louter	1	1		
PC5-11	LCD Projector	Resolution : XGA Brightness : 800Lumen	1	1		
PC5-12	Screen	Size : 100"	1	1		
PC5-13	PC/DSP Board	Trainer & Teaching Kit	1			
PC5-14	Cabinet	1,800 x 500 x 2,300mm	4	4		

Requested Equipment List : Computer Network

No.	Description	Specification	Total	Priority		
				A	B	C
PC6-1	PC (for Student x 15, Lecturer x 1, Lecturer's Room x 2, Final Project Room x 10)	CPU : Pentium III 866MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair, Head Set	28	23	5	
PC6-2	File Server	CPU : Pentium Xeon dual processor 1GHz or equivalent Second Cache : 1MB RAM : 1GB HDD : 60GB (Ultra wide SCSI) Drive : FDD, DVD-RAM Monitor : XGA 15" Accessories : LAN Card, Desk, Chair	1	1		
PC6-3	Note Book PC	CPU : Pentium III 600MHz or equivalent RAM : 128MB HDD : 10GB (Ultra ATA 100) Drive : FDD, CD-ROM Monitor : LCD 11" Accessories : LAN Card		1		
PC6-4	Unix Server	SUN Enterprise 450 or equivalent	1	1		
PC6-5	Thin Client	SUN Ray 1 or equivalent	10	10		
PC6-6	Printer (Monochrome, for Lecturer's Room & Final Project Room)	Type : LASER type Size of Printing Paper : A4 Accessories : Table	2	2		
PC6-7	Printer Server	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC6-8	Router	CPU : Pentium II 600MHz or equivalent RAM : 256MB HDD : 30GB (Ultra ATA 100) Drive : FDD, DVD-ROM Monitor : XGA 15" Accessories : LAN Card, Desk	1	1		
PC6-9	Switching Hub	Type : 100Base T, 24 ports	4	4		
PC6-10	UPS for Server, Router, Switching Hub		1	1		
PC6-11	AVR for all PCs		1	1		
PC6-12	Software	Windows 2000 for Server	1	1		
		Windows 2000 for PCs	28	28		
		Office 2000 (for Lecturer)	12	7	5	
		Anti Virus	28	28		
		Net Op	16		16	
		Free BSD for Router	1	1		
PC6-13	LCD Projector	Resolution : XGA Brightness : 800Lumen	1	1		

Requested Equipment List : Computer Network

No.	Description	Specification	Total	Priority		
				A	B	C
PC6-14	Screen	Size : 100"	1	1		
PC6-15	Cabinet	1,800 x 500 x 2,300mm	4	4		
PC6-16	Sound Proof Chamber	2 x 2 x 2m	1	1		
PC6-17	Digital Audio Tape Recorder	Analog Aux In/Out, Digital Aux In/Out	1	1		
PC6-18	Electric Condenser Microphone	-	1	1		
PC6-19	Headphone	-	1	1		
PC6-20	Digital Audio Processor	USB Connector, Digital In/Out, MIDI In/Out	1	1		
PC6-21	Precision Sound Level Meter	DSP Based, Portable, Connectable to PC	1	1		
PC6-22	Audio Signal Generator	-	2	1	1	
PC6-23	HIFI Sound System	100W, High End (A Class)	1	1		
PC6-24	Audio Mixer	16ch	1	1		
PC6-25	Storage Oscilloscope	-	2	1	1	
PC6-26	Ethernet Cables	300m/roll	5	3	2	
PC6-27	RJ-45 Connector	100pcs/box	10	6	4	
PC6-28	LAN Cable Tester	DSP Based	2	1	1	
PC6-29	Ethernet Connector	Category 5, Twisted Pair	100	70	30	
PC6-30	Tool set for Networking	-	5	3	2	
PC6-31	Communication Rack	19"	2	2		
PC6-32	LAN HUB	8 ports, 100 Base TX	4	4		
PC6-33	Protocol Analyzer	LAN/WAN/ATM	1	1		
PC6-34	LAN Analyzer	LAN/WAN/ATM	1	1		
PC6-35	ATM Card	Linux Based	6	6		
PC6-36	CTI Card		6	6		
PC6-37	Internet Router	CISCO 2525 or equivalent	2	2		
		CISCO 3640 or equivalent	2	2		
PC6-38	Cable for Internet Router	S25B-12.0.4	4	4		
		CAB-V35MT	4	4		
		CAB-V35FC	4	4		
		CAB-AC	4	4		
		WS-C1924-A	4	4		
		WS-C1912-EN	4	4		
PC6-39	AUI to RJ-45 Transceivers	-	6	6		
PC6-40	RJ-45 Crimping Tools	-	1	1		
PC6-41	Wave LAN Card	2,400MHz	6	6		
PC6-42	Indoor Antenna for Wave LAN	-	6	6		
PC6-43	Outdoor Antenna for Wave LAN	Parabola Type	3	3		
PC6-44	Wave LAN Booster	-	3	3		
PC6-45	Wave LAN Remote Outdoor	-	2	2		
PC6-46	Ethernet Card	3kinds(Difernt Brand : Tulip, 3Com, Intel)	15	15		
PC6-47	Ethernet Cables	Built-in, Category 5, 20m	100	70	30	
PC6-48	Modem	56kbps, Voice	10	10		
PC6-49	PABX	150 Circuits	1	1		
PC6-50	VoIP Blaster Card	-	4	4		
PC6-51	ISDN Emulator	-	2	2		
PC6-52	A/D Converter	16bit	15	10	5	
PC6-53	D/A Converter	16bit	15	10	5	
PC6-54	Programmable Peripheral Interface Card	PPI8255	15	10	5	
PC6-55	PC Interface Trainer		10	10		
PC6-56	ADAMS Series	serial, input, output	10	10		
PC6-57	Cabinet	1,800 x 500 x 2,300mm	4	4		