

**JMTI**

**JAPAN-MALAYSIA  
TECHNICAL INSTITUTE**

**LIST OF EQUIPMENT**

## KANDUNGAN

- A    MANUFACTURING ENGINEERING  
TECHNOLOGY**
- B    MECHATRONIC ENGINEERING TECHNOLOGY**
- C    COMPUTER ENGINEERING TECHNOLOGY**
- D    ELECTRONIC ENGINEERING TECHNOLOGY**

**A**

**MANUFACTURING ENGINEERING TECHNOLOGY**

**MANUFACTURING ENGINEERING TECHNOLOGY**

**EQUIPMENT LIST**

No	System	Description	Quantity	
1	Conventional Machine	1. Precision High Speed Lathe Machine	15	
		2. Vertical Milling Machine	15	
		3. Universal Milling Machine	2	
		4. Precision Surface Grinding Machine	8	
		5. Universal Cylindrical Grinding Machine	2	
		6. Universal Tool and Cutter Grinder Machine	1	
		7. Single-Lip Cutter Grinder Machine	1	
		8. Pedestal Grinder Machine	2	
		9. Radial Arm Drilling Machine	1	
		10. Upright Drilling Machine	5	
		11. Cut-Off Saw Machine	2	
		12. Vertical Band Saw Machine	1	
		13. Shear Machine	1	
		14. Bending Machine	1	
		15. Bending Roll Machine	1	
		16. Drafting Board Machine	30	
		17. Horizontal Band Saw	1	
2	Computer Numerical Control Machine	1. CNC Machining Center	3	
		2. CNC Lathe Machine	3	
		3. Wire-Cut Machine	1	
		4. Electro Discharge Machine (EDM)- die sinking	1	
		5. Coordinate Measuring Machine (CMM)	1	
		6. Tool Presetter	1	
3	Testing Equipments	1. Heat Treatment Furnace	1	
		2. Universal Testing Machine	1	
		3. Impact Testing Machine	1	
		4. Rockwell Hardness Tester	1	
		5. Vickers System Hardness Tester (digital system)	1	
		6. Tool Dynamometer		
	a. Dynamic Strain Amplifier	6		
	b. Lathe Tool Dynamometer	2		
	c. Graphic Recorder Machine	2		
4	Measuring Equipments	1. Surface Roughness Tester	1	
		2. Roundness Tester	1	
		3. Contour Surface Tester	1	
		4. Toolmaker Microscope	3	
		5. Profile Projector	1	
		6. Digital Outside Micrometer		
			a. 0 - 25 mm	10
			b. 25 - 50 mm	10
			c. 50 - 75 mm	10
			d. 75 - 100 mm	10
		7. Outside Micrometer		
			a. 0 - 25 mm	25
			b. 25 - 50 mm	25
			c. 50 - 75 mm	25
	d. 75 - 100 mm	25		
	e. 100 - 125 mm	25		
	f. 125 - 150 mm	25		
	g. 150 - 175 mm	25		
	h. 175 - 200 mm	25		
	i. 200 - 225 mm	25		
	j. 225 - 250 mm	25		

Measuring Equipments	k. 250 - 275 mm	25
	l. 275 - 300 mm	25
	8. Inside Micrometer set	25
	9. Digital Inside Micrometer (caliper type)	
	5 - 30 mm	10
	25 - 50 mm	10
	50 - 75 mm	10
	10. Screw Thread Micrometer	
	0 - 25 mm	25
	25 - 50 mm	25
	50 - 75 mm	25
	75 - 100 mm	25
	11. Depth Micrometer	
	0 - 150 mm	15
	0 - 300 mm	15
	12. Digital Holtest (3 point contact)	15
	13. Telescopic Gauge set	25
	14. Small Hole Gauge set	25
	15. Drill Gauge	10
	16. Digital Caliper	15
	17. Digimatic Height Gauge	1
	18. Vernier Height Gauge	2
	19. Spring Divider	15
	20. Odd Leg Caliper	15
	21. Steel Ruler	
	0 - 150 mm/6"	25
	0 - 300 mm/12"	25
	0 - 600 mm/24"	15
	0 - 1000 mm/40"	15
	22. Precision Square	
	50mm	15
	75mm	15
	100mm	25
	150mm	25
	200mm	15
	23. Combination Square set	15
	24. Universal Bevel Protractor	15
	25. Thickness Gauge	
	No. of leaf 13	10
	No. of leaf 28	10
	26. Radius Gauge	40
	27. Pitch Gauge	40
	28. Center Gauge	75
29. Bore Gauge	25	
30. Digimatic Indicator IDC	25	
31. Dial Test Indicator	50	
32. Angle Block	15	
33. Universal Surface Gauge	30	
34. Gauge Block Set ( 112 set - Metric )	15	
35. Precision Parallel	15	
36. Slotted Precision Angle Plate	45	
37. Surface Finish Comparator	10	
38. 'V' Block Set with Clamp	30	
39. Magnetic 'V' Block	25	
40. Magnetic Block	10	
41. Magnetic Compound Sine Plate	10	
42. Taper Ring Gauge	25	
43. Thread Plug Gauge	25	

	Measuring Equipments	44. Adjustable Snap Gauge	25
		45. Adjustable Roll Snap Gauge	25
		46. Magnetic Sine Plate	25
		47. Taper Plug Gauge	10
		48. Plain Ring Gauge	10
		49. Sine Bar	10
		50. Magnetic Stand	25
		51. Granite Surface Table	5
		52. Precision 2-Dimension Vice	2
		53. Grinding Machine Vice	45
		54. Radius-Tangent Wheel Dressing	3
		55. Precision Punch Grinding (Punch Former)	3
5	Hand Tool and Marking Tool	1. Scriber	25
		2. Screw Driver set	10
		3. Phillips Screw Driver set	10
		4. Ball Pein Hammer	25
		5. Aluminium Mallet	25
		6. Soft Hammer	25
		7. Diamond Dresser	8
		8. Wheel Dresser	30
		9. Arbor Press	2
		10. Goggles	50
		11. 'C' Clamp set	20
		12. Universal Oil Stone	10
		13. Machine Tap	5
		14. Pick-up Tongs	5
		15. File set	25
		16. File Cleaner	100
		17. Set of Needle File	25
		18. Engineer Files	375
		19. Double Open-End Spanner set	30
		20. Punches	75
		21. Engineer Level	3
		22. Puller	20
		23. Wallet set of Hexagon key/allen key	50
		24. Wrench	45
		25. Pliers	150
		26. Adjustable Tab Wrench	120
		27. Die Stocks	80
		28. Tap	25
		29. Dies	25
		30. Extractor set	20
		31. Transfer Punches	25
		32. Tool Box	150
		33. Face Shield	25
		34. Hand Hacksaw and Blade	25doz
		35. Scaper	15
6	Workshop Equipment	1. Electric Drill	3
		2. Bench Vices	32
		3. Ventilation Fan	2
		4. Stamp set	20
		5. Work Bench	4
		6. Drawer Cabinet	15
		7. Finder	50
		8. Machine Vice	10
		9. Workshop Vacuum Cleaner	1
		10. Air Compressor	1

7	Cutting Tool and Tool Holder	1. Reduction Sleeve set	10
		2. Ejecting Drift set	10
		3. Turning Tool Holder	25
		4. Tool Bit	250
		5. Carbide Insert Tool Holder and Carbide Insert Bit	25 50
		6. Carbide Insert Thread Cutting Tool Holder and Carbide Insert Bit	25 50
		7. Parting-off Tool Holder and Blade	25 50
		8. Carbide Insert Parting-off Tool Holder and Carbide Insert Bit	25 50
		9. Boring Tool set	25
		10. Boring Bar Lathe and Cutter	25 50
		11. Carbide Thread Boring Tool	25
		12. Knurling Tool Holder	25
		13. Center Drill	
		No. 1	50
		No. 2	50
		No. 3	50
		No. 4	50
		No. 5	50
		14. End Mill Drill	
		2 flutes	32doz
		4 flutes	32doz
		4 flutes (long series)	32doz
		15. Rough End Mill Cutter	10doz
		16. Ball Nose End Mill Cutter	16doz
		17. Carbide Insert End Mill Holder and Carbide Insert Bit	4doz 5doz
		18. Ball Nose End Mill Holder and Carbide Insert Bit	5doz 5doz
		19. Face Mill Carbide Insert and Carbide Insert Bit	25 10doz
		20. Machine Reamer	8
21. Adjustable Reamer	5		
22. Set for Drill Bit (Straight Shank)	60set		
23. Taper Shank Drill Bit	60set		
24. Tungsten Carbide Tipped Drill	40set		
25. Counter Bore	15		
26. Corner Rounding Cutter	20set		
27. 'T' Slot Cutter	10set		
28. Dovetail Cutter	20set		
8	CAD/CAM/CAE System	1. Personal Computer (PC)	25set
		2. Plotter	1
		3. Printer	1
		4. Scanner	1
		5. CAD/CAM/CAE/CAT System Software	26set
		6. Production Control Simulation Tool Software	15set
		7. Word Processing Software	25set
		8. DNC System	1set
		9. Network System Software	25set
		10. Table Computer and Chair	27set
		11. Audio System	1set
		12. Hub	2set
9	Manufacturing Automation System (Provided by Japanese side)	1. Production Automatic Line	1set

# **B**

## **MECHATRONIC ENGINEERING TECHNOLOGY**



# MECHATRONIC ENGINEERING TECHNOLOGY

## EQUIPMENT LIST

No	System	Description	Quantity	
1	Conventional Machine	1. Precision High Speed Lathe Machine	15	
		2. Vertical Milling Machine	15	
		3. Universal Milling Machine	2	
		4. Precision Surface Grinding Machine	8	
		5. Universal Cylindrical Grinding Machine	2	
		6. Universal Tool and Cutter Grinder Machine	1	
		7. Single-Lip Cutter Grinder Machine	1	
		8. Pedestal Grinder Machine	2	
		9. Radial Arm Drilling Machine	1	
		10. Upright Drilling Machine	5	
		11. Cut-Off Saw Machine	2	
		12. Vertical Band Saw Machine	1	
		13. Shear Machine	1	
		14. Bending Machine	1	
		15. Bending Roll Machine	1	
		16. Drafting Board Machine	30	
		17. Horizontal Band Saw	1	
2	Computer Numerical Control Machine	1. CNC Machining Center	3	
		2. CNC Lathe Machine	3	
		3. Wire-Cut Machine	1	
		4. Electro Discharge Machine (EDM)- die sinking	1	
		5. Coordinate Measuring Machine (CMM)	1	
		6. Tool Presetter	1	
3	Testing Equipments	1. Heat Treatment Furnace	1	
		2. Universal Testing Machine	1	
		3. Impact Testing Machine	1	
		4. Rockwell Hardness Tester	1	
		5. Vickers System Hardness Tester (digital system)	1	
		6. Tool Dynamometer		
	a. Dynamic Strain Amplifier	6		
	b. Lathe Tool Dynamometer	2		
	c. Graphic Recorder Machine	2		
4	Measuring Equipments	1. Surface Roughness Tester	1	
		2. Roundness Tester	1	
		3. Contour Surface Tester	1	
		4. Toolmaker Microscope	3	
		5. Profile Projector	1	
		6. Digital Outside Micrometer		
			a. 0 - 25 mm	10
			b. 25 - 50 mm	10
			c. 50 - 75 mm	10
			d. 75 - 100 mm	10
		7. Outside Micrometer		
			a. 0 - 25 mm	25
			b. 25 - 50 mm	25
			c. 50 - 75 mm	25
	d. 75 - 100 mm	25		
	e. 100 - 125 mm	25		
	f. 125 - 150 mm	25		
	g. 150 - 175 mm	25		
	h. 175 - 200 mm	25		
	i. 200 - 225 mm	25		
	j. 225 - 250 mm	25		

k. 250 - 275 mm	25
l. 275 - 300 mm	25
8. Inside Micrometer set	25
9. Digital Inside Micrometer (caliper type)	
5 - 30 mm	10
25 - 50 mm	10
50 - 75 mm	10
10. Screw Thread Micrometer	
0 - 25 mm	25
25 - 50 mm	25
50 - 75 mm	25
75 - 100 mm	25
11. Depth Micrometer	
0 - 150 mm	15
0 - 300 mm	15
12. Digital Hollist (3 point contact)	15
13. Telescopic Gauge set	25
14. Small Hole Gauge set	25
15. Drill Gauge	10
16. Digital Caliper	15
17. Digimatic Height Gauge	1
18. Vernier Height Gauge	2
19. Spring Divider	15
20. Odd Leg Caliper	15
21. Steel Ruler	
0 - 150 mm/6"	25
0 - 300 mm/12"	25
0 - 600 mm/24"	15
0 - 1000 mm/40"	15
22. Precision Square	
50mm	15
75mm	15
100mm	25
150mm	25
200mm	15
23. Combination Square set	15
24. Universal Bevel Protractor	15
25. Thickness Gauge	
No. of leaf 13	10
No. of leaf 28	10
26. Radius Gauge	40
27. Pitch Gauge	40
28. Center Gauge	75
29. Bore Gauge	25
30. Digimatic Indicator IDC	25
31. Dial Test Indicator	50
32. Angle Block	15
33. Universal Surface Gauge	30
34. Gauge Block Set ( 112 set - Metric )	15
35. Precision Parallel	15
36. Slotted Precision Angle Plate	45
37. Surface Finish Comparator	10
38. 'V' Block Set with Clamp	30
39. Magnetic 'V' Block	25
40. Magnetic Block	10
41. Magnetic Compound Sine Plate	10
42. Taper Ring Gauge	25
43. Thread Plug Gauge	25

		44. Adjustable Snap Gauge	25
		45. Adjustable Roll Snap Gauge	25
		46. Magnetic Sine Plate	25
		47. Taper Plug Gauge	10
		48. Plain Ring Gauge	10
		49. Sine Bar	10
		50. Magnetic Stand	25
		51. Granite Surface Table	5
		52. Precision 2-Dimension Vice	2
		53. Grinding Machine Vice	45
		54. Radius-Tangent Wheel Dressing	3
		55. Precision Punch Grinding (Punch Former)	3
5	Hand Tool and Marking Tool	1. Scriber	25
		2. Screw Driver set	10
		3. Phillips Screw Driver set	10
		4. Ball Pein Hammer	25
		5. Aluminium Mallet	25
		6. Soft Hammer	25
		7. Diamond Dresser	8
		8. Wheel Dresser	30
		9. Arbor Press	2
		10. Goggles	50
		11. 'C' Clamp set	20
		12. Universal Oil Stone	10
		13. Machine Tap	5
		14. Pick-up Tongs	5
		15. File set	25
		16. File Cleaner	100
		17. Set of Needle File	25
		18. Engineer Files	375
		19. Double Open-End Spanner set	30
		20. Punches	75
		21. Engineer Level	3
		22. Puller	20
		23. Walfet set of Hexagon key/allen key	50
		24. Wrench	45
		25. Pliers	150
		26. Adjustable Tab Wrench	120
		27. Die Stocks	80
		28. Tap	25
		29. Dies	25
		30. Extractor set	20
		31. Transfer Punches	25
		32. Tool Box	150
		33. Face Shield	25
		34. Hand Hacksaw and Blade	25doz
		35. Scaper	15
6	Workshop Equipment	1. Electric Drill	3
		2. Bench Vices	32
		3. Ventilation Fan	2
		4. Stamp set	20
		5. Work Bench	4
		6. Drawer Cabinet	15
		7. Finder	50
		8. Machine Vice	10
		9. Workshop Vacuum Cleaner	1
		10. Air Compressor	1

7	Cutting Tool and Tool Holder	1. Reduction Sleeve set	10
		2. Ejecting Drill set	10
		3. Turning Tool Holder	25
		4. Tool Bit	250
		5. Carbide Insert Tool Holder and Carbide Insert Bit	25 50
		6. Carbide Insert Thread Cutting Tool Holder and Carbide Insert Bit	25 50
		7. Parting-off Tool Holder and Blade	25 50
		8. Carbide Insert Parting-off Tool Holder and Carbide Insert Bit	25 50
		9. Boring Tool set	25
		10. Boring Bar Lathe and Cutter	25 50
		11. Carbide Thread Boring Tool	25
		12. Knurling Tool Holder	25
		13. Center Drill	
		No. 1	50
		No. 2	50
		No. 3	50
		No. 4	50
		No. 5	50
		14. End Mill Drill	
		2 flutes	32doz
		4 flutes	32doz
		4 flutes (long series)	32doz
		15. Rough End Mill Cutter	10doz
		16. Ball Nose End Mill Cutter	16doz
		17. Carbide Insert End Mill Holder and Carbide Insert Bit	4doz 5doz
18. Ball Nose End Mill Holder and Carbide Insert Bit	5doz 5doz		
19. Face Mill Carbide Insert and Carbide Insert Bit	25 10doz		
20. Machine Reamer	8		
21. Adjustable Reamer	5		
22. Set for Drill Bit (Straight Shank)	60set		
23. Taper Shank Drill Bit	60set		
24. Tungsten Carbide Tipped Drill	40set		
25. Counter Bore	15		
26. Corner Rounding Cutter	20set		
27. T Slot Cutter	10set		
28. Dovetail Cutter	20set		
8	CAD/CAM System	1. Personal Computer (PC)	25set
		2. Plotter	1
		3. Printer	1
		4. Scanner	1
		5. CAD/CAM System Software	26set
		6. Production Control Simulation Tool Software	15set
		7. Word Processing Software	25set
		8. DNC System	1set
		9. Network System Software	25set
		10. Table Computer and Chair	27set
		11. Audio System	1set
		12. Hub	2set
9	Pneumatic System	1. Double sided mobile lab. table (2 work stations)	20 set
		2. Basic Pneumatic Training set	20 set

		3. Advance Pneumatic Training set	20 set
		4. Pneumatic Training Media/Working Material	1 set
		5. Pneumatic Technical Literature	1 set
10	Electro-Pneumatic System	1. Basic Electro-Pneumatic Training set	20 set
		2. Advance Electro Pneumatic Training set	20 set
		3. Electro-Pneumatic Accessories	20 set
		4. Electro-Pneumatic Trng Media/Working Material	1 set
		5. Electro-Pneumatic Technical literature	1 set
11	Hydraulic System	1. Double sided mobile lab. table (2 work stations)	5 set
		2. Basic Hydraulic Training set	5 set
		3. Advance Hydraulic Training set	5 set
		4. Hydraulic Training Media/Working Material	1 set
		5. Hydraulic Software	1 set
		6. Hydraulic Technical Literature	1 set
12	Electro-Hydraulic System	1. Basic Electro-Hydraulic Training set	5 set
		2. Advance Electro-Hydraulic Training set	5 set
		3. Electro-Hydraulic Accessories	5 set
		4. Electro-Hydraulic Trng Media/Working Material	1 set
		5. Electro-Hydraulic Literature	1 set
13	Proportional Hydraulic System	1. Basic Proportional Hydraulic Training set	5 set
		2. Advance Proportional Hydraulic Training. set	5 set
14	PLC Practice System	1. PLC	1 set
		2. Computer	1 set
		3. Sensor	1 set
		4. Automatic Mechanism Machine	1 set
		5. Air-Cylinder	1 set
		6. Motor	1 set
15	Computer System	1. Computer	30 set
		2. Printer	30 set
		3. Software(OS, C-Language,MS-Office, Visual Basic)	1 set
16	Mechatronic Exercise Equipment	1. Mechanic Parts	30 set
		2. Sensor	30 set
		3. Actuator	30 set
		4. Controller	30 set
		5. Tools	30 set
17	Process Control System	1. Flow Control Experiments Flow System	1 set
		Computer	1 set
		Printer	1 set
		2. Water Level Control Experiments Water Level System	1 set
		Computer	1 set
		Printer	1 set
		3. Pressure Control Experiments Pressure Control System	1 set
		Computer	1 set
		Printer	1 set
		4. Temperature Control Experiments Temperature Control System	1 set
		Computer	1 set
		Printer	1 set
18	Electric Motor System	1. Main System	3 set
		2. Computer	3 set
		3. A/D, D/A Board	3 set
		4. Software	3 set

19	Industrial Robot System (Provided by Japan)	1. Robot 1 (Vertical-articulated robot)	2 set
		2. Robot 2 (Horizontal axis base)	1 set
		3. Image Processor	1 set
		4. Working Cell	1 set
		5. Auto Hand Change Table	1 set
		6. Area sensor	1 set
		7. Security Fence	1 set
		8. Software Robotics	2 set
		9. Basic Robotics	3 set
20	Diagnosis system (Provided by Japan)	1. Vibration pick-up	8 set
		2. Temperature sensor	8 set
		3. Junction box	4 set
		4. Vibration local station	2 set
		5. Temperature local station	2 set
		6. Central station	2 set
		7. Revolution model machine	2 set
		8. Portable Diagnosis Machine Analyzer	2 set
		9. Software	2 set

# C

## COMPUTER ENGINEERING TECHNOLOGY

**COMPUTER TECHNOLOGY DEPARTMENT EQUIPMENT LIST**

NAME OF SYSTEM		SPECIFICATION			
NO.		NO.	QTY.	UNIT	TOTAL
1	Programming Training System	1 Server for Administration	1 set	1	1
		2 Client PC	31 set	1	31
		3 Training Support Display System	1 set	1	1
2	Client Ser Model Training System	4 Server for Administration	1 set	1	1
		5 EWS Server	1 set	1	1
		6 PC Server	1 set	1	1
		7 Client PC	31 set	1	31
		8 Training Support Display System	1 set	1	1
		9 Server for Administration	1 set	1	1
3	Visual Data Processing System	10 Server for Multimedia	1 set	1	1
		11 Client PC	31 set	1	31
		12 Training Support Display System	1 set	1	1
4	Networking Training System	13 Server for Administration	1 set	1	1
		14 Server for Internet	1 set	1	1
		15 Client PC	31 set	1	31
		16 Fire Wall	1 set	1	1
		17 Training Support Display System	1 set	1	1
		18 Complete PC Component Training Set	31 set	1	31
5	PC Hardware Training System	19 Singleboard Computer Trainer	31 set	1	31
		20 Micro Computer Trouble Shooting System	31 set	1	31
		21 Color Monitor Trouble Shooting System	31 set	1	31
6	Electronic Training Lab	22 Electronic Training Kit	31 set	1	31
		23 Digital and Analog Training Equipment	31 set	1	31



**COMPUTER TECHNOLOGY DEPARTMENT EQUIPMENT LIST**

Name of system	Equipments	Qty.	
<b>Programming Training System</b>	<i>Server for Administration</i>		
	PC Server	1	
	Display	1	
	Laser beam printer	4	
	Display Filter	1	
	Mouse Pad	1	
	Un-Interrupted Power Supply	1	
	Table Tap	1	
	OS for server	1	
	Administration Tool	1	
	Back up tool	1	
	<i>Client for lecturer and students</i>		31
	Personal Computer		31
	LAN card		31
	CD-ROM Drive		31
	Sound Board		31
	Video Board		31
	Mouse		31
	Keyboard		31
	Display		31
	Speaker		31
	Display Filter		31
	Mouse Pad		31
	Color Printer		31
	Table Tap		31
	OS (Windows 97)		31
	Development Language 1		31
	GUI Development Tool		31
	Application Tool		31
	Cross Assmbler Language		31
	Still Picture Edit Tool		31
	Screen Editor		31
	Video Edito		1
	Active picture development tool 1		1
	Active picture development tool 2		1
	<i>Training Support Display System</i>		
	40-Inch Multiscan Rear Projector		1
	100-inch Flat Screen		1
	Suspension Support		1
	Distributor Unit		1
	Signal Interface Cable		1
Signal Interface Switcher		1	
Connecting Cable 14P-14P 50 m		1	
4 Interface Board		1	
4 Signal Interface Cable		1	
9-Inch Color Monitor 4 standard		1	

	S-VHS Video Cassette Recorder Pal	1	
	Video Presentation Stand	1	
	Computer Table	1	
	Compact CD Player	1	
	Cassette Recorder	1	
	UHF Synthesizer Wireless Microphone	1	
	UHF Synthesizer Transmitter 800 Mhz	1	
	ECM-77B W/SMC 9-4P Connector	1	
	UHF Antenna	1	
	Microphone Floor Stand	1	
	Audio Mixer 6 Mono 3-ST W/V-SW	1	
	Graphic Equalizer	1	
	Stereo Headphone	1	
	Power Amplifier	1	
	Speaker System 110 W	1	
	Tripod for Speaker System	1	
	19-Inch System Rack	1	
	Main Power Switch Unit	1	
	Connecting cable	1	
	Installation Material	1	
	<i>Video Shooting System</i>	1 SET	
	8mm CCD Video Camera Pal		
	Rechargeable Battery Pack		
	Camera Tripod		
Client Server Model Training system	<i>Server for Administration</i>		
	PC Server	1	
	Display	1	
	Laser Beam Printer	4	
	Display Filter	1	
	Mouse Pad	1	
	Un-Interrupted Power Supply	1	
	Table Tap	1	
	OS for Server	1	
	ROBMS fo Server	1	
	Administration Tool	1	
	Mail tool for server	1	
	Backup Tool	1	
		<i>Client for lecturer and students</i>	31
		Personal Computer	31
		LAN card	31
		CD-ROM Drive	31
		Sound Board	31
		Video Board	31
		Mouse	31
		Keyboard	31
		Display	31
		Speaker	31
		Display Filter	31
		Mouse Pad	31
	Color Pinter	31	

	Table Tap	31	
	OS (Windows 97)	31	
	Development Language 1	31	
	GUI Development Tool	31	
	Application Tool	31	
	Cross Assmbler Language	31	
	Still Picture Edit Tool	31	
	Screen Editor	31	
	Video Edito	1	
	Active picture development tool 1	1	
	Active picture development tool 2	1	
Visual Data Processing System	<i>Server for Administration</i>		
	PC Server	1	
	Display	1	
	Laser Beam Printer	4	
	Display Filter	1	
	Mouse Pad	1	
	Un-Interrupted Power Supply	1	
	Table Tap	1	
	OS for Server	1	
	ROBMS fo Server	1	
	Administration Tool	1	
	Backup Tool	1	
		<i>Client for lecturer and students</i>	
		Personal Computer	31
		LAN card	31
		CD-ROM Drive	31
		Sound Board	31
		Video Board	31
		Mouse	31
		Keyboard	31
		Display	31
		Speaker	31
		Display Filter	31
		Mouse Pad	31
		Color Pinter	31
		Table Tap	31
		OS (Windows 97)	31
		Development Language 1	31
		GUI Development Tool	31
		Application Tool	31
		Cross Assmbler Language	31
	Still Picture Edit Tool	31	
	Screen Editor	31	
	Video Edito	1	
	Active picture development tool 1	1	
	Active picture development tool 2	1	

	<i>Training Support Display System</i>	
	40-Inch Multiscan Rear Projector	1
	100-inch Flat Screen	1
	Suspension Support	1
	Distributor Unit	1
	Signal Interface Cable	1
	Signal Interface Switcher	1
	Connecting Cable 14P-14P 50 m	1
	4 Interface Board	1
	4 Signal Interface Cable	1
	9-Inch Color Monitor 4 standard	1
	S-VHS Video Cassette Recoder Pal	1
	Video Presentation Stand	1
	Computer Table	1
	Compact CD Player	1
	Cassette Recorder	1
	UHF Synthesizer Wireless Microphone	1
	UHF Synthesizer Transmitter 800 Mhz	1
	ECM-77B WSMC 9-4P Connector	1
	UHF Antenna	1
	Microphone Floor Stand	1
	Audio Mixer 6 Mono 3-ST WV-SW	1
	Graphic Equalizer	1
	Stereo Headphone	1
	Power Amplifier	1
	Speaker System 110 W	1
	Tripod for Speaker System	1
	19-Inch System Rack	1
	Main Power Switch Unit	1
	Connecting cable	1
	Installation Material	1
<b>Networking Training System</b>	<i>Server for Administration</i>	
	PC Server	1
	Display	1
	Laser Beam Printer	4
	Display Filter	1
	Mouse Pad	1
	Un-Interrupted Power Supply	1
	Table Tap	1
	OS for Server	1
	RDBMS fo Server	1
	Administration Tool	1
	Backup Tool	1
	<i>Client for lecturer and students</i>	
	Personal Computer	31
	LAN card	31
	CD-ROM Drive	31
	Sound Board	31
	Video Board	31
	Mouse	31

	Keyboard	31
	Display	31
	Speaker	31
	Display Filter	31
	Mouse Pad	31
	Color Printer	31
	Table Tap	31
	OS (Windows 97)	31
	Development Language 1	31
	GUI Development Tool	31
	Application Tool	31
	Cross Assembler Language	31
	Still Picture Edit Tool	31
	Screen Editor	31
	Video Editor	1
	Active picture development tool 1	1
	Active picture development tool 2	1

NAME OF SYSTEM	EQUIPMENTS	QTY.
<b>PC HARDWARE TRAINING SYSTEM</b>	SINGLEBOARD COMPUTER TRAINER	31
	COLOR MONITOR TROUBLESHOOTING SYSTEM	31
	MICROCOMPUTER TROUBLESHOOTING SYSTEM	31
	PRINTER TRAINER	31
	FLOPPY DISK DRIVE TESTER AND ALIGNMENT SYSTEM	31
	POST DIAGNOSTIC BOARD (PCI)	31
	POST DIAGNOSTIC BOARD (ISA)	31
	EEPROM PROGRAMMER	31
	EEPROM ERASER	31
	PC MOTHERBOARD - Pentium 166	31
	PC MOTHERBOARD - Pentium 200	31
	PC MOTHERBOARD - Pentium Latest Technology	31
	MULTIMEDIA PC KIT	31
	SVGA CARD	31
	SOUND CARD	31
	HARD DISK DRIVE	31
	FLOPPY DISK DRIVE	31
	DVD DRIVE	31
	ZIP DRIVE	16
	BOOSTER SPEAKER SET	31
	KEYBOARD	31
	MOUSE	32
	COMPUTER CASING	32
	PERSONAL COMPUTER - NOTEBOOK	32
	DIGITAL CAMERA	4
	INTERFACE (RS232V24)	31
	BREAK OUT BOX	31
	PRINTER BUFFERS	31
	24-LINE PROGRAMMABLE I/O CARD	31
	P.C. CABLE CHECKER	31
	EXTENSION REELS	31
	PCMCIA MODEMS/ADAPTER	16
	SCSI I/O CARD (PCI)	31
	VIDEO CAPTURE	16
AUTOMATIC PRINTER SHARER	4	
AUTOMATIC DATA SWITCHES	16	
LAB BENCH B	20	

NAME OF SYSTEM	EQUIPMENTS	QTY.
ELECTRONIC TRAINING LAB	Electrostatic Kit	31
	Basic Electricity Training Kit	31
	Electronic Training Kit	31
	Digital Logic Trainer	15
	Advanced Digital Logic Trainer	15
	Semiconductor Tester	4
	Digital IC Tester	15
	Digital Pulser	31
	Analog Multimeter	31
	Digital Multimeter (Bench Top)	31
	Logic Injector	31
	Logic Monitor	31
	Logic Probe	31
	Dual-trace Oscilloscope	31
	Oscilloscope - Multi - Function	15
	Frequency Counter	16
	Function Generator	31
	Gauss Meter	4
	Impedance Meter	4
	Service Digital Multimeter	31
	PCB Fault Troubleshooter	4
	Computer Power Supply	31
	Power Supply - Fixed DC	4
	Power Supply - Variable DC	31
	Power Supply - Uninterruptable	31
	Oscilloscope - Digital Storage	31
	Logic Analyser (Hand Held Type)	31
	UV Exposure Units	2
	PCB Processing, Etching and Washing Tanks	2
	Vacuum Cleaner With Tool Storage	4
	PCB Shear	1
	Magnifier	31
	Miniature Drilling Machine	10
	Soldering Iron	31
	Desoldering Tool	31
	Soldering Station	31
	Desoldering Station	31
	Elasticated Wrist Straps	100
	IC Extractor	31
	IC Inserter	31
	IC Test Clip	31
	Electronic Tool Kit	31
	Allen Key Set	10
Box Spanner Kit	32	
Anti-static Screwdriver Set	31	
Electricians / Instrument Screwdriver Sets	31	
Driver Socket Set	10	
Screw Extractor Set	31	
Screw Gripping (Hold) Phillips Screwdriver Set	31	
Nut Driver Set	10	
Anti-static Tweezers Set	31	
Plier - Combination	15	

NAME OF SYSTEM	EQUIPMENTS	QTY.
	Plier - Diagonal Cutting	15
	Plier - Long Chain Nose	15
	Plier - Circlip (Internal)	15
	Plier - Circlip (External)	15
	Crimping And Termination Tool Set	31
	Solderless Breadboard	31
	Stripboard Cutter	31
	Test Lead Rack	40
	Cable Dispenser	20
	Cordless Power Drill Kit	2
	12V Cordless Power Screw Driver	15
	PCB Vices	31
	Lab Bench A	31
	<b>JUMLAH KESELURUHAN</b>	



# D

## ELECTRONIC ENGINEERING TECHNOLOGY

**ELECTRONIC ENGINEERING TECHNOLOGY DEPARTMENT**  
**LIST OF EQUIPMENT**

No.	System	Description
1	Basic Electronic Circuit Training System	1. Electronic Circuit Trainer 2. Measuring Instruments 3. Tools/Parts
2	Sequence Training System	1. Sequence Trainer 2. Controller 3. Base Machine for Experiment 4. Common Use Materials 5. Misc. 6. Station Automate Line Training System
3	Micro Computer Control Training System	1. Server PC for Management 2. System for Teacher & Students 3. System for Write-IN and Verify 4. Training Support Display System
4	Automatic Measuring Training System (supply by Japan)	1. Server for Management 2. System for Teacher & Students 3. Training Support Display System
5	EDA Training System	1. Server PC for Management 2. System for Teacher & Students 3. Write-IN Machine for Students 4. Training Support Display System
6	Communication Training System	1. Digital Exchange (PBX) Training System 2. Infrared Ray Remote Control Training System

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ELECTRONICS ENGINEERING TECHNOLOGY COURSE

NO.	SYSTEM	DESCRIPTION	QTY	
1	BASIC ELECTRONIC CIRCUIT TRAINING SYSTEM	<i>Electronic Circuit Trainer</i>		
		1 Logic Circuit Training Kit	6	
		2 Pulse Circuit Training Kit	6	
		3 OP Amp Training Kit	6	
		4 AD/DA Converter Training Kit	6	
		5 Semi-conductor Training Kit	6	
		<i>Measuring Instruments</i>		
		1 Analog Tester	33	
		2 Digital Multimeter	16	
		3 DC Power Supply	33	
		4 Signal Generator	33	
		5 Analog Oscilloscope	33	
		6 Electronic Voltmeter	6	
		7 Curve Tracer	2	
		8 LCR Meter	2	
		9 Pen Recorder	2	
		10 DC Voltmeter	20	
		11 DC Ammeter	20	
		12 AC Voltmeter	10	
		13 AC Ammeter	10	
		<i>Tools/Parts</i>		
		1 Bread Board	300	
		2 Universal Print Board		
		2.1 Single-side Glass Composite, 2.54 bit	100	
		2.2 Single-side Glass Composite, 47x72mm	300	
		2.3 Single-side Glass Composite, 72x95mm	300	
		3 Resistor Kit	3	
		4 Condenser Kit	3	
		5 TTL-IC Kit	3	
		6 C-MOS IC Kit	3	
		7 Transistor Kit	3	
		8 Diode Kit		
		8.1 18 Kinds, 55 pcs, W/Case	3	
		8.2 High Voltage Type, 48 Kinds	3	
		8.3 Low Voltage Type, RD, 98 Kinds, 2280 pcs	3	
		8.4 LED Lamp	3	
		9 Half-fixed VR Kit	3	
		10 Linea IC Kit	3	

NO.	SYSTEM	DESCRIPTION	QTY.
		11 Tool Kit	2
		12 Desk Drill	2
		13 Drill Set	6
		14 Chassis Reamer	33
		18 Plier	
		18.1 Open barrel Terminal 1.25-5.5mm <sup>2</sup>	16
		18.2 Insulated Solderless Terminal 1.25-2.0mm <sup>2</sup>	16
		18.3 Ring Sleeve	6
		18.4 F-Type Connector 3C/5C/7C	6
		18.5 FCC Modular Plug	6
		19 Wiring Vice	6
		20 Wire Stripper	
		20.1 Twisted Wire 0.3/0.5/0.75/1.25/2.0mm <sup>2</sup>	16
		20.2 Single Wire 0.5/0.8/1.2/1.6/2.0/2.6mm <sup>2</sup>	16
		21 PCB Cutter	1
		22 Wrapping Tool	6
		23 Dip IC Extractor	6
		24 PLCC IC Extractor	6
		25 File Set	33
		26 Precision File Set	33
		27 Vice	33
		28 De-solder	16
		29 De-solder	100
		30 Soldering Iron Stand	33
		31 Solder	50

No.	System	Description	Qty
2	SEQUENCE TRAINING SYSTEM	<i>Sequence Trainer</i>	
		<i>1.1 Actuator</i>	
		1 Air Cylinder	4
		2 Induction Motor	4
		3 Reversible Motor	4
		4 Stepping Motor	4
		5 AC Servo Motor	2
		6 Rotary Air Actuator	4
		<i>1.2 Mechanism</i>	
		7 Rack & Pinion	4
		8 One-way Clutch	1
		9 One-way Ratchet	1
		10 Feeding Screw	4
		11 Plain Gear	4
		12 Plain Cam	2
		13 Geneva	2
		14 Deflection Crank	2
		15 Lever Slider	2
		<i>1.3 Output Unit</i>	
		16 Table	4
		17 Belt Conveyor	4
		18 Rotary Table	4
		<i>1.4 Robot Unit</i>	
		19 Handling Robot	
		19.1 Z-axis Air Cylinder Type	4
		19.2 Z-axis Motor Type	4
		20 P & P	4
		<i>1.5 Sensor</i>	
		21 Photo Electric Sensor Unit	4
		22 Optional Sensor Unit	4
		<i>Controller</i>	
		<i>2.1 Controller</i>	
		1 Terminal I/O Box	4
		2 I/F Module	4
		3 I/O Board	16
		4 8 Bit Micomp.	
		4.1 Z80 Micon. Power Source, P-ROM	16
		4.2 Cable for Z80 Micon	16
		5 Sequencer Unit	4
		6 PC Changer	4
		7 Sequencer Connecting Cable	4
		8 Rudder Support Software	1
		9 Converting Cable	4
		10 RS 232C Cable	16

o+A1	System	Description	Qty
		<b>2.2 General-use Controller</b>	
		11 PC Controller	16
		12 Extension Memory	16
		13 SCSI Card	16
		14 Display	16
		<b>Base Machine For Experiment</b>	
		1 Free Flow Conveyor	4
		2 Corner Conveyor	4
		3 Base Machine	1
		4 Work Bench	4
		<b>Common Use Materials</b>	
		1 Connecting Cable	4
		2 Work Bench	4
		3 Fixed Jig	4
		4 Air Compressor	1
		5 Conrod Set	4
		<b>Station Automize Line Training System</b>	
		<b>5.1 Base Machine Part</b>	
		1 Base Unit	
		1.1 Free Flow Conveyor	6
		1.2 Strait Extension Conveyor	2
		2 Corner Conveyor	4
		3 Carry Pallet Work	
		3.1 Work (Orgor)	200
		3.2 Pallet	20
		3.3 Brank Pallet	20
		<b>5.2 Control Section</b>	
		4 Terminal Box	
		4.1 Terminal Box	6
		4.2 Connecting Cable, Tubes	6
		5 Control Sequencer	
		5.1 Sequencer Unit	6
		5.2 Cables	6
		5.3 PC/Sequencer Switcher (1 to 3)	6
		<b>5.3 Work Cell Unit</b>	
		6 Auto Serve Cell	1
		7 Distribution Cell	1
		8 Tighten Cell	1
		9 Inspection Cell	1
		10 Pick up Cell	1

No.	System	Description	Qty	
3	MICRO COMPUTER TRAINING SYSTEM	<b>Server PC for Management</b>		
		1 Main Unit	1	
		2 Display	1	
		3 SCSI-2 I/F Card	1	
		4 CD-ROM Drive	1	
		5 Extension HDD	1	
		6 LAN Card	1	
		7 LBP	2	
		8 CRT Filter	1	
		9 Mouse Pad	1	
		10 Uninterrupt Power Supply	1	
		11 Table Top	1	
		12 Ethernet HUB	1	
		13 10 Base-T Cable	1	
		14 Server OS	31	
		15 Server Management Tool	1	
		<b>System For Teacher &amp; Student (31 sets)</b>		
		1 Main Unit	31	
		2 Display	31	
		3 LAN Card	31	
		4 CRT Filter	31	
		5 Mouse Pad	31	
		6 Table Top	31	
		7 OS	31	
		8 OS Selection Software	31	
		9 Editor	31	
		10 Application Tool	31	
		11 8 Bit Micon Cross Compiler	31	
		12 8 Bit Micon ICE	31	
		13 8 Bit Target CPL	31	
		14 Logic Analyzer		
		14.1 Input 16Ch-200MHz, Memory Length 16384 Bit	16	
		14.2 Option: Z80 Analysis	16	
		14.3 Option: RS-232C Analysis	16	
		<b>System for Write-IN And Verify</b>		
		1 Main Unit	3	
		2 Display	3	
		3 LAN Card	3	
		4 CRT Filter	3	
		5 Mouse Pad	3	

No.	System	Description	Qty
6		Table Top	3
7		OS	3
8		OS Selection Software	3
9		Editor	3
10		Application Tool	3
11		I/O Board for PC	3
12		8 Bit Target CPU	3
13		Control Object	
		13.1 DC Servomotor Training Unit	2
		13.2 Stepping Motor Positioning Training Unit	2
		13.3 Stepping Motor 2-axis Positioning Unit (XY Table)	1
14		FA Model	1
15		P-ROM Writer	3
16		ROM Eraser	3
<b><i>Training Support Display System</i></b>			
1		Display For Monitor	16
2		Video Capture PC	1
3		Video Capture Board	1
4		RGB Distributor 1	
		4.1 Input Analog RGB-1	8
		4.2 Input Analog RGB-2	1
5		RGB Charger	1
6		Down Converter	1
7		AV Selector	1
8		Document Presentation Unit	1
9		VTR	1
10		Monitor	1
11		Audio Mixer	1
12		Connecting Cable	1
13		Video Camera	1
14		Microphone	1
15		Tuner	1
16		Amplifier	1
17		Speaker	1
18		Antenna	1





NO.	SYSTEM	DESCRIPTION	QTY
		14 GP-IB Board	31
		15 GP-IB Switch	16
		16 GP-IB Cable	70
		17 A/D Board	6
		18 Connector Block	6
		19 Flat Cable	31
		20 Function Generator	16
		21 Digital Multimeter	16
		22 Digital Oscilloscope	16
		23 GP-IB/RS232C Changer	2
		<b><i>Training Support Display System</i></b>	
		1 Display for Monitor	16
		2 Video Capture PC	1
		3 Video Capture Board	1
		4 RGB Distributor 1	
		4.1 Input Analog RGB-1	8
		4.2 Input Analog RGB-2	1
		5 RGB Changer	1
		6 Down Converter	1
		7 AV Selector	1
		8 Data Display Unit	1
		9 VTR	1
		10 Monitor	1
		11 Audio Mixer	1
		12 Connecting Cable	1
		13 Video Camera	1
		14 Microphone	
		14.1 Wireless, Tie-pin Type	1
		14.2 Head Set	1
		15 Tuner	1
		16 Amplifier	1
		17 Speaker	1
		18 Antenna	1

No.	System	Description	QTY	
5	EDA TRAINING SYSTEM	<b>Server PC for Management (1 Set)</b>		
		1 Main Unit	1	
		2 Display	1	
		3 SCSI-2 I/F Card	1	
		4 CD-ROM Drive	1	
		5 Extension HDD	1	
		6 LAN Card	1	
		7 LDR	2	
		8 CRT Filter	1	
		9 Mouse Pad	1	
		10 Uninterrupt Power Supply	1	
		11 Table Top	1	
		12 Ethernet HUB	1	
		13 10 Base-T Cable	1	
		14 Server OS 1	1	
		15 Server OS 2	1	
		16 Server Management Tool	1	
		<b>System For Teacher &amp; Student (16 sets)</b>		
		1 Main Unit	16	
		2 Display	16	
		3 LAN Card	16	
		4 CRT Filter	16	
		5 Mouse Pad	16	
		6 Table Top	16	
		7 OS	16	
		8 OS Selection Software	16	
		9 Application Tool	16	
		10 Editor	16	
		11 HDL Tool	16	
		12 FPGA Development Tool 1	16	
		13 FPGA Development Tool 2	1	
		14 FPGA Development Tool 2-1	15	
		15 Digital Circuit Design Tool	16	
		16 Analog Circuit Design Tool	16	
		<b>Write-IN Machine for Student (5 Sets)</b>		
		1 Main Unit	5	
		2 Display	5	
		3 LAN Card	5	
		4 CRT Filter	5	
		5 Mouse Pad	5	

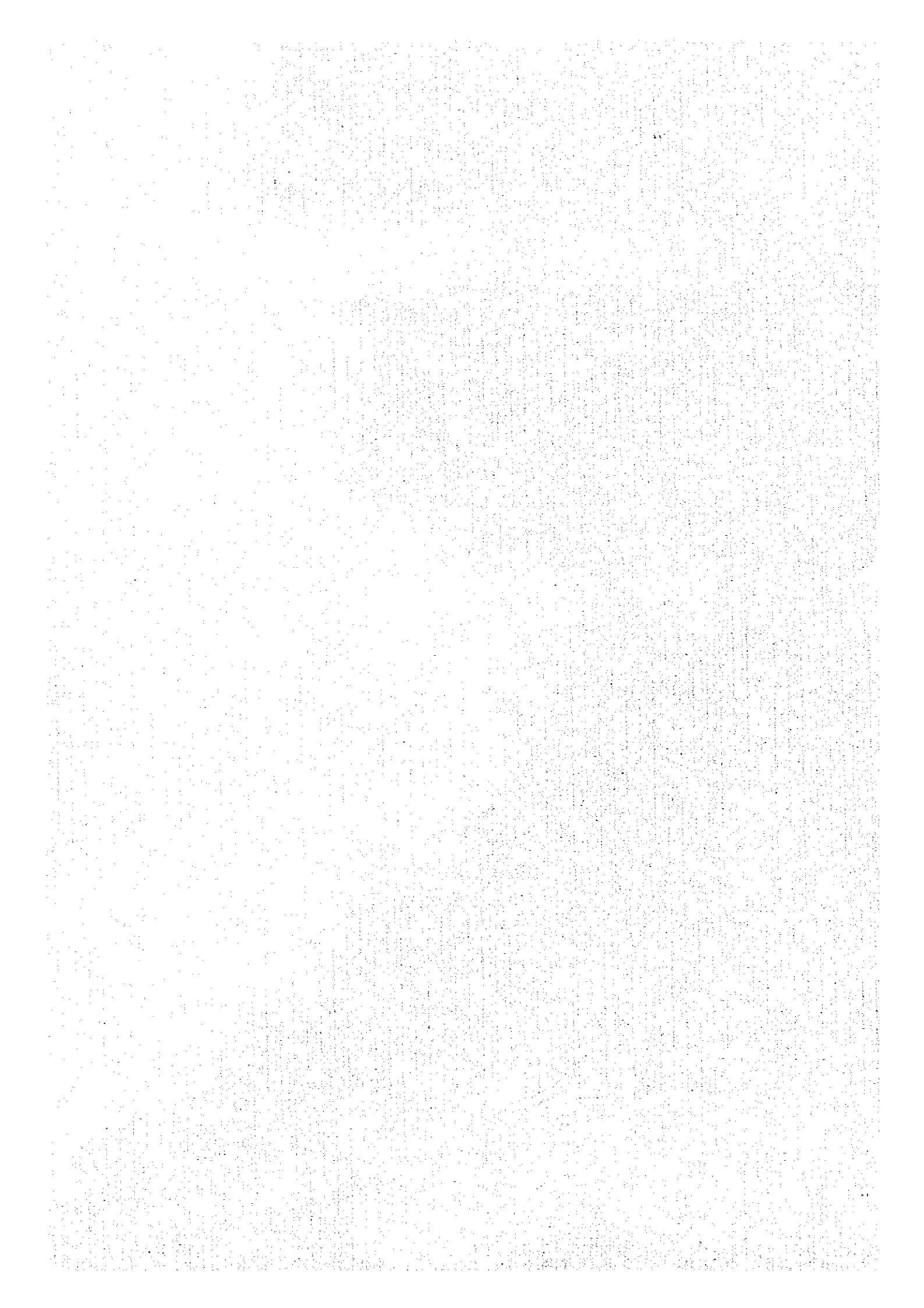
NO.	SYSTEM	DESCRIPTION	QTY
6		Table Top	5
7		Application Tool	5
8		Graphic Software	5
9		Sound Source Board	2
10		MIDI Keyboard	2
11		Speaker System	2
12		VHD Simulator	5
13		Verilog Simulator	5
14		VHDL Logic Synthesis Tool	5
15		Varilog Logic Synthesis Tool	5
16		FPGA Layout Writing Tool 1	5
17		FPGA Development Tool 2-1	5
18		FPGA Development Tool 2-2	5
19		PCB Design CAD	5
20		PCB NC Machine	2
21		Consumable Set	4
22		PLD Writer	5
23		EP-ROM Eraser	5
<i>Training Support Display System</i>			
1		Display For Monitor	16
2		Video Capture PC	1
3		Video Capture Board	1
4		RGB Distributor 1	
		4.1 Input Analog RGB-1	8
		4.2 Input Analog RGB-2	1
5		RGB Charger	1
6		Down Converter	1
7		AV Selector	1
8		Data Display Unit	1
9		VTR	1
10		Monitor	1
11		Audio Mixer	1
12		Connecting Cable	1
13		Video Camera	1
14		Microphone	
		14.1 Wireless, Tie-pin Type	1
		14.2 Head Set	1
15		Tuner	1
16		Amplifier	1
17		Speaker	1
18		Antenna	1



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## 資料 2. 長期調査付属資料

- (1) サマリーレポート
- (2) 各科の暫定実施計画：TSI（英文・和文）
- (3) 各科の訓練カリキュラム（英文・和文）
- (4) 各科のカリキュラム内容詳細（英文）
- (5) 各科の訓練機材の詳細（英文・和文）
- (6) 各科施設レイアウト図





Summary Report of the Supplementary study  
for the Project for Japan-Malaysia Technical Institute

**1. The Purpose of visit**

As the result of the Preliminary Study which was conducted in September 1995 for the Project, Supplementary study Team will conduct additional survey and discussion and to reconfirm the contents of the Preliminary Study with the Malaysian Authority concerned so as to make more concrete Master Plan necessary for a smooth Implementation of the Project. The Basic Policy is as follows:

- (1) To reconfirm the Japanese Technical Cooperation for the Project will be implemented though two different schemes, that is, "the Project-Type Technical Cooperation" will handle the field of Vocational Training, The Engineering Consultancy Services apart from the said scheme will be implemented by "the Dispatching Expert".
- (2) To reconfirm the training area will be the four department agreed in the Preliminary survey.
- (3) To work out Tentative Schedule of Implementation
- (4) To discuss the timing of initiation of the Project.
- (5) To discuss the input detail by both sides.
- (6) To report the result of the study to the both government.

**2. Items to be studied**

- (1) Vocational Training
  - a Training need from the Malaysian Industry and its facility and equipment
  - b Curriculum of the each department
  - c Specification and quantity of the necessary training equipment
  - d To make advice to the Construction Plan

- (2) Input by Japanese side
  - a Expert
  - b Training in Japan
  - c Training equipment
- (3) Input by Malaysian side
  - a Allocation of personnel
  - b Out line of construction plan and its progress
  - c Budget for the Project
- (4) Contents of the Engineering Consults Services
- (5) Participation of Japanese industry in Malaysia to the Project

### 3. Member of the Team

#### Group A

- 1 Mr. Yoshihiro YABUKI (Manufacturing Engineering Technology)  
Lecturer, Osaka Polytechnic College, Employment Promotion Corporation
- 2 Mr. Tatuya SHIMIZU (Electronics Engineering Technology)  
Lecturer, Miyagi Polytechnic Center, Employment Promotion Corporation
- 3 Mr. Etumasa HIURA (Computer Engineering Technology)  
Lecturer, Fukuyama Polytechnic College, Employment Promotion Corporation
- 4 Mr. Hiroyuki KAWASE (Mechatronics Engineering Technology)  
Lecturer, Gifu Polytechnic College, Employment Promotion Corporation

**Group B**

- 1 **Mr. Masaharu TANAKA** (Leader/Training Planning)  
Deputy Director, Overseas Cooperation Division, Human Resources Development Bureau,  
Ministry of Labour
- 2 **Mr. Terunobu YAMAUCHI** (Engineering Consultancy Services)  
Deputy Director, Economic Cooperation Division, Economic Cooperation Department,  
International Trade Policy Bureau, Ministry of International Trade and Industry
- 3 **Mr. Toshio TAKAHASHI** (Cooperation Planning)  
Staff, First Technical Cooperation Division, Social Development Cooperation  
Department, JICA

**4. Schedule**

**Group A** June 18, 1996 - July 11, 1996

**Group B** June 29, 1996 - July 5, 1996

Both Group including a site survey trip to Penang.

## **5. Summary of the study result**

All items mentioned below were discussed and should be finalized by a further discussion between the Japanese Implementation Study Team which will be dispatched in very near future and the Malaysian Authority concerned.

### **(1) Relation to the Malaysia Plan**

In 7th Malaysia Plan, Chapter 4 POPULATION, EMPLOYMENT AND MANPOWER DEVELOPMENT, in which Japan-Malaysia Technical Institute has been mentioned indicates the high priority in Malaysian Government.

### **(2) Project organization**

- a. Both sides reconfirm the Japanese Technical Cooperation for the Project will be implemented two different schemes, that is, "the Project-Type Technical Cooperation" will handle the field of Vocational Training, The Engineering Consultancy Services apart from the said scheme will be implemented by "the Dispatch of Expert".
- b. JMTI will be a high level vocational training institute directly under the Manpower Department, Ministry of Human Resources.

### **(3) Terms of Japanese Technical Cooperation**

Both sides reconfirm the basic policy of terms of Japanese Cooperation mentioned in the Minutes of Meeting of the Preliminary Study team. Japanese Cooperation will begin 6 (six) months prior to the completion of the building construction.

According to the recent construction schedule explained by Malaysian side, All the building construction will be completed in April 1998.

**(4) Input by Japanese side**

**a. Experts**

**Long Term Experts**

Chief Advisor	one
Coordinator	one
Training Planning	one
Manufacturing Engineering Technology	one
Electronic Engineering Technology	one
Computer Engineering Technology	one
Mechatronics Engineering Technology	one

**Short-Term Experts**

will be dispatched to ensure the smooth implementation of the Project and to support Long Term Experts

**b. Training in Japan**

The Team explained that Japanese side will accept 15 counterpart personnel per year for training in Japan, in which 5 personnel will be fully sponsored by the Project, 10 personnel will be accepted by the Special Group training course exclusively to JMTI which will be cost shared in Air fare by Malaysian side

Malaysian side understand the Team explanation and express their intention to accommodate through " Look East Policy Training " in Japan for additional 10 personnel.

**c. Equipment**

shown in annex I

**(5) Input by Malaysian side**

**a. allocation of Counterpart personnel**

As of July 1996, Project Leader and 8 instructors has been allocated to the Project, and in 7th Malaysia Plan for JMTI total 163 instructors have been requested to Public Service Department.

**b. Land, Building and Facility**

The ownership of land for in Bukit Minyak Industrial Park will be transferred to the Federal Government from the Penang state government.

Leveling of the land has completed and Land has been surveyed. Further soil investigation will be done by Public Works Department soon.

Penang Development Corporation explained to the Team that infrastructure of the Phase II where JMTI Land is located will be completed in December 1996.

CIASST new building will be one of the expected temporary office for Japanese experts who will come prior to the building completion in Penang.

**d. Budget for the Project**

Malaysian side explained that 7th Malaysia Plan has allocated RM 60 Million for the Development of the Project, however, Manpower Department will request for additional allocation it require.

**(6) Contents of Training**

shown in annex II

**(7) Participation of Japanese industry in Malaysia to the Project**

Japanese side explained the following idea of participation of Japanese industry in Malaysia to the Project.

- a. To attend JMTI Technical advisory committee as an observer
- b. To accept the on-the-job training in their factories
- c. To send seminar/training lecturer
- d. To advise and suggest training need to JMTI

**(8) Engineering Consultancy Services**

Malaysian side explained the concept of ECS as follows;

- a. To make surveys of SMI's needs for ECS.
- b. To give advice on;
  - Product design
  - Prototyping and small-batch production
  - Conduct problem solving, and process improvement through training -fed consultancy.
- c. To conduct seminars/ technical workshop/short courses on technical and productivity matters.
- d. To train JMTI staff on consultancy technique

**Dispatch of ECS expert**

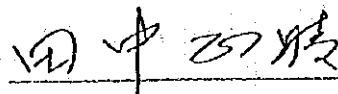
Malaysian side proposed ECS Expert to be sent in the beginning of the 3rd year from the 1st intake of student because during the 1st and 2nd year the instructor will be occupied in developing training programs in each Department.

Japanese side recommended to dispatch ECS expert in the Japanese fiscal year 1998.

**(9) R/D Mission and Draft of R/D**

Japanese side wishes to send the Implementation study Team in 1996 fiscal year.

Draft of R/D handed to Malaysian side for the example.



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Mr. Masaharu TANAKA  
Leader/Training Planning  
Supplementary Study Team  
Japan International Cooperation Agency



# ANNEX I

## MANUFACTURING ENGINEERING TECHNOLOGY DEPARTMENT

### LIST OF EQUIPMENT AND ESTIMATE COST.

Purchase by Malaysian side.

NO.	EQUIPMENTS	Q'TY
1.	Universal Cylindrical grinder Machine	3
2.	Universal Tool and Cutter Grinder Machine	1
3.	Precision Surface Grinding Machine	8
4.	Optical Profile Projector Grinder	1
5.	Single Lip Cutter Grinder	1
6.	Pedestal Grinder	2
7.	Universal Milling Machine (Complete with memory DRO X, Y, Z axis)	2
8.	Vertical Milling Machine (Complete with memory DRO X, Y, Z, axis)	15
9.	Precision High Speed Lathe (Complete with memory DRO)	15
10.	Upright Drilling Machine	3
11.	Pedestal Drilling Machine	2
12.	Radial Arm Drill	1
13.	Cut Off Saw	2
14.	Horizontal Band Saw	1
15.	Vertical Band Saw	1
17.	Shear Machine	1
18.	Heat Treatment Furnace	1
19.	Bending Machine	1
20.	Bending Roll Machine	1
21.	Drafting Board	30 set
22.	Universal Testing Machine	1
23.	Impact Testing Machine	1

NO.	EQUIPMENTS	Q'TY
24.	Hardness Tester - Rockwell - Vickers - Micro Vickers	1 1 1
25.	CNC Coordinate Measuring Machine (CMM) - 3D	1
26.	CNC Lathe Machine	3
27.	CNC Machining Center	3
28.	CNC Wire Cut	1
29.	EDM Sinker	1
30.	Tool Dynamometer - Amplifier = 3 - Lathe tool dynamometer = 1 - Grafic recorder = 1	2 set
31.	Roundness Tester	1
32.	Surface Roughness Tester	2
33.	Tool Microscope	3
34.	CAD/CAM/CAE/CAT hardware and software for PC bases (1server on Workstation , 1 DNC set , networking, 1 Plotter, 1 Printer, Operating System with WINDOW NT)	25 set
35.	Production Control Simulation (Software only, Hardware will be used on CAD/CAM Lab.)	11set
36.	Pneumatic and Hydraulic equipment will be sharing with Mechatronic Dept.	-
37.	Robotic Equipment will be sharing with Mechatronic Dept.	-
38.	Hand Tools and Marking Tool ( for detail refer attachment)	
39.	Measuring Tools ( for detail refer attachment)	
40.	Cutting Tools and Tool Holders ( for detail refer attachment)	
41.	Workshop Equipments ( for detail refer attachment)	

Provided by the Japanese side.

NO.	EQUIPMENT	Q'TY
1.	Production Automatic Line (FMS) - Turning center, Grinding center, Robot, AGV and Automatic Warehouse those each cells controlled for computer.	1 set

## System for Electronics Engineering Technology Course

System No.	System
1	Basic Electronic Circuit Training System
2	Sequence Training System
3	Micro Computer Control Training System
4	Automatic Measuring System (provided by Japanese side)
5	EDA Training System
6	Communication Training System

## JMTI Machine Specification (Computer Technology Department)

Name of System		Specification			
No.		No.	Qty.	Unit	Total
1	Programming Training System	1	1set	1	1
		2	31set	1	31
		3	1set	1	1
2	Client Server Model Training System	4	1set	1	1
		5	1set	1	1
		6	1set	1	1
		7	31set	1	31
		8	1set	1	1
3	Visual Data Processing System	9	1set	1	1
		10	1set	1	1
		11	31set	1	31
		12	1set	1	1
4	Networking Training System	13	1set	1	1
		14	1set	1	1
		15	31set	1	31
		16	1set	1	1
		17	1set	1	1
6	PC Hardware Training System	18	31set	1	31
		19	31set	1	31
		20	31set	1	31
		21	31set	1	31
		22	31set	1	31
6	Electronic Training Lab	22	31set	1	31
		23	31set	1	31

### JMTI Machine Specification (Back Bone System and Instructors Room)

No.	Name of System	No.	Specification	Qty	Unit	Total
1	Instructors Room	1	Server for Administration	1set	\$	5
		2	Client PC	20set	\$	100
2	Back-Born System	1	Back Born Intelligent Hub	1set	1	1
		2	Computer Technical Section	1set	1	1
		3	Other LAN	3set	1	1

**Equipments of mechatronics engineering technology department**

**Malaysia supply**

- 1. Electro-pneumatic system**
- 2. Electro-hydraulic system**
- 3. Process control system**
- 4. Computer system**
- 5. Practical material of mechatronics exercises  
(e.x motor, sensor and actuator).**
- 6. Electric motor system**
- 7. PLC practice system**

**Japanese supply**

- 8. Industrial robot system**
- 9. Diagnosis system**

# JAPAN - MALAYSIA TECHNICAL INSTITUTE

## MANUFACTURING ENGINEERING TECHNOLOGY DEPARTMENT

### COURSE CURRICULUM

CLASSIFICATION	CREDIT (UNITS)	YEAR					
		I	II	III	IV	V	
GENERAL EDUCATION	12	3	2	3	2	-	2
BASIC SUBJECT	14	5	5	3	1	-	-
SPECIALIZE SUBJECT	20	4	5	2	4	2	3
BASIC PRACTICE	5	-	1	1	-	1	2
SPECIALIZE PRACTICE	63	7	6	10	12	16	12
TOTAL	114	19	19	19	19	19	19

**NOTE:**

- i) 1 unit = 90 minutes = 1 slot / week = 2 hours
- ii) 1 semester = 20 weeks = 570 hours
- iii) 1 year = 40 weeks = 1140 hours

$$\text{Theory} = \frac{12+14+20}{114} \times 100 = 40\%$$

$$\text{Practical} = \frac{5+63}{114} \times 100 = 60\%$$

ANNEX II



Listing of curriculum for Manufacturing Engineering Technol Department

		YEAR		II	
CLASSIFICATION	CURRICULUM	CREDIT (UNITS)	CLASSIFICATION	CURRICULUM	CREDIT (UNITS)
GENERAL SUBJECT	1. MATHEMATICS I	1	GENERAL SUBJECT	1. MATHEMATIC II	1
	2. TECHNICAL ENGLISH I	1		2. TECHNICAL ENGLISH II	1
	3. ISLAMIC STUDY OR MORAL EDUCATION	1			
BASIC SUBJECT	1. MATERIAL TECHNOLOGY I	1	BASIC SUBJECT	1. MATERIAL TECHNOLOGY II	1
	2. INTRODUCTION TO ELECTRICAL ENGINEERING	1		2. BASIC MEASURING INSTRUMENT	1
	3. PRINCIPLE OF ENGINEERING DRAWING	1		3. COMPUTER PROGRAMING	1
	4. ENGINEERING SAFETY	1		4. STRENGTH OF MATERIAL	1
	5. COMPUTER APPLICATION	1		5. ERGONOMIC ENGINEERING	1
SPECIALIZE SUBJECT	1. PRODUCTION TECHNOLOGY & MACHINE TOOLS	1	SPECIALIZE SUBJECT	1. THEORY OF MECHANISM	1
	2. PRECISION MEASUREMENT TOOLS	1		2. PRECISION MACHINING TECHNOLOGY	1
	3. MACHINE DESIGN	1		3. NUMERICAL CONTROL ENGINEERING	1
	4. DEFORMATION PROCESS	1		4. JOINING ENGINEERING	1
BASIC PRACTICE			BASIC PRACTICE	5. BASIC ELECTRONIC ENGINEERING	1
				1. BASIC ENGINEERING EXPERIMENT	1
SPECIALIZE PRACTICE	1. MACHINING PRACTICE I	3	SPECIALIZE PRACTICE	1. MACHINE DESIGN AND DRAFTING	2
	2. PRACTICE ON DEFORMATION PROCESS	2		2. MACHINING PRACTICE II	4
	3. PRACTICE ON PRECISION MEASUREMENT	2			
	TOTAL	19		TOTAL	19

NOTE: 1 UNIT = 90 MINUTES = 1 SEMESTER / WEEK.





## Electronics Engineering Technology

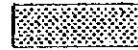
SUBJECTS	CURRICULUM	CREDIT	YEAR / YEAR / YEAR /					
			1	2	3	4	5	6
<b>CORE SUBJECT</b>								
	ISLAMIC STUDIES	1	1	1	1	1	1	1
	COMMUNICATION ENGLISH	4	1	1	1	1	1	1
	MATHEMATICS	3	1	1	1			
	PHYSIC	1	1					
<b>BASIC SUBJECT</b>								
	INDUSTRIAL SAFETY	1	1					
	ELECTRIC SAFETY ENGINEERING SAFETY PRACTIC	1	1					
	ELECTRICAL / ELECTRONICS / PRINCIPAL / MEASUR	4	1	1	1	1		
	ANALOG ELECTRONICS	2	2					
	DIGITAL ELECTRONICS	2	2					
	ELECTRIC / ELECTRONIC MEASUREMENT	1	1					
	COMPUTER ENGINEERING	1	1					
	COMMUNICATIONS	2	1	1				
	ENGINEERING DRAWING CAD / CAE	1	1					
<b>BASIC TRAINING</b>								
	SAFETY WORK HYGIENIC	1	1					
	EXPERIMENTS ON ELECTRONICS CIRCUIT	2	2					
	EXPERIMENTS ON ANALOG ELECTRONICS	2	2					
	EXPERIMENT FUNDAMENTAL DIGITAL	2	2					
	MEASUREMENT	2	2					
	USE OF PC	2	2					
	DRAWING OF ELECTRONICS	1	1					
<b>SPECIALIZED SUBJECT</b>								
	ANALOG ELECTRONICS CIRCUIT	2		1	1			
	POWER ELECTRONICS	2		1	1			
	DIGITAL ELECTRONICS CIRCUIT	2		1	1			
	MICRO PROCESSOR	1			1			
	OPTO ELECTRONICS	1		1				
	SENSORS (TRANSDUCER)	1		1				
	CONTROL ENGINEERING	1	1		1			
	ELECTRICAL DRIVES and PLC	2		1	1			
	PNEUMATIC SYSTEM	1			1			
	HYDRAULIC SYSTEM	1			1			
<b>SPECIALIZED TRAINING</b>								
	EXPERIMENT ANALOG CIRCUIT	2		2				
	POWER SUPPLY CIRCUIT	2		2				
	POWER ELECTRONICS	2	2					
	EXPERIMENT DIGITAL CIRCUIT	4		2	2			
	COMPUTER HARDWARE	2		2				
	INTERFACE CIRCUIT	1			1			
	OPTICAL ELECTRONICS	1		1				
	PLD	2				2		
	SENSOR	2		2				
	ELECTRONICS DESIGN	2				2		
	DATA ANALYSIS	1			1			
	COMPUTER SOFTWARE	1	2					
	DATA COMMUNICATION	2		2				
	TELECOMMUNICATION ENGINEERING	2		2				
	MICROWAVE	1			1			
	FIBER OPTICS	1			1			
	PLC	4				2	2	4
	SYNCHRO / SERVO ELECTRONICS	1			1			
	PNEUMATIC SYSTEM	1			1			
	HYDRAULIC SYSTEM	1			1			
	PREVENTIVE MAINTENANCE	1				1		
	PCB DESIGN	2				2		
	TROUBLESHOOTING TECHNIQUES	1				1		
	ON PLANT TRAINING	12				12		12
	PROJECT	9				9		9
			114	19	19	19	19	19

Computer Engineering Technology Course Listings (standards curriculum)

1st year							
Curriculum subject	Units	1st		2nd		3rd	
		1	2	1	2	1	2
Basic Electronic Engineering	2	1	1				
Computer Engineering	2	1	1				
Programming Technique	2	1	1				
Engineering Mathematics	2	1	1				
Operating System	2	1	1				
Islamic Study or Moral Study	2	1	1				
Engineering Safety	1	1					
Communication English	2	1	1				
Physics	1		1				
Sub total	16	8	8				
Basic Exercise in Software Engineering	4	2	2				
Basic Exercise in Software Engineering	4	2	2				
Computer Engineering Exercise	4	2	2				
Operating System Exercise	4	2	2				
Exercise of Electronics	4	2	2				
Engineering Measurement Exercise	1	1					
Workshop Practice	1		1				
Sub total	22	11	11				
Total	38	19	19				





Theory



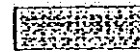
Practical

Computer Engineering Technology Course Listings (standards curriculum)

1st year							
Curriculum subject	Units	1st		2nd		3rd	
		1	2	1	2	1	2
Basic Electronic Engineering	2	1	1				
Computer Engineering Programming Technique	2	1	1				
Engineering Mathematics	2	1	1				
Operating System	2	1	1				
Islamic Study or Moral Study	2	1	1				
Engineering Safety	1	1					
Communication English	2	1	1				
Physics	1		1				
Sub total	16	8	8				
Basic Exercise in Software Engineering	4	2	2				
Basic Exercise in Software Engineering	4	2	2				
Computer Engineering Exercise	4	2	2				
Operating System Exercise	4	2	2				
Exercise of Electronics	4	2	2				
Engineering Measurement Exercise	1	1					
Workshop Practice	1		1				
Sub total	22	11	11				
Total	38	19	19				

 Theory  
 Practical

2nd year							
Curriculum subject	Units	1st		2nd		3rd	
		1	2	1	2	1	2
Data Telecommunications engineering	4			2	2		
Database systems	3			1	2		
Computer Programming	2			1	1		
Graphic Processing Engineering	2			1	1		
Data engineering	2			1	1		
Islamic Study or Moral Study	2			1	1		
Communication English	2			1	1		
Microprocessor Technology	2			1	1		
Sub total	19			9	10		
Software engineering exercises	4			2	2		
Graphic processing exercises	3			2	1		
Data processing exercise	4			2	2		
Data Telecommunication Exercise	4			2	2		
Microprocessor Technology Exercise	4			2	2		
Sub total	19			10	9		
Total	38			19	19		



Theory



Practical

2nd year							
Curriculum subject	Units	1st		2nd		3rd	
		1	2	1	2	1	2
Data telecommunications engineering	4			2	2		
Database systems	3			1	2		
Computer Programming	2			1	1		
Graphic Processing Engineering	2			1	1		
Data engineering	2			1	1		
Islamic Study or Moral Study	2			1	1		
Communication English	2			1	1		
Microprocessor Technology I	2			1	1		
Sub total	19			9	10		
Software engineering exercises	4			2	2		
Graphic processing exercises	3			2	1		
Data processing exercise	4			2	2		
Data Telecommunication Exercise	4			2	2		
Microprocessor Technology Exercise I	4			2	2		
Sub total	19			10	9		
Total	38			19	19		



Theory



Practical



3rd year							
Curriculum subject	Units	1st		2nd		3rd	
		1	2	1	2	1	2
Control System	2					2	
Information Communication Engineering	2					2	
Mathematical statistics	2					2	
Microprocessor Technology	2					2	
Islamic Study or Moral Study	1					1	
Communication English	1					1	
Sub total	10					10	
Control System Exercise	2					2	
Microprocessor Exercise	2					2	
System Design	2					2	
Information Communication Engineering	2					2	
Managerial analysis exercise	1					1	
Project	19						19
Sub total	28					9	19
Total	38					19	19

% of Theory	
1st Year	42%
2nd Year	50%
3rd Year	26%
Total	39%

3rd year							
Curriculum subject	Units	1st		2nd		3rd	
		1	2	1	2	1	2
Control System	2					2	
Information Communication Engineering	2					2	
Mathematical statistics	2					2	
Microprocessor Technology	2					2	
Islamic Study or Moral Study	1					1	
Communication English	1					1	
Sub total	10					10	
Control System Exercise	2					2	
Microprocessor Exercise	2					2	
System Design	2					2	
Information Communication Engineering	2					2	
Management analysis exercise	1					1	
Project	19						19
Sub total	28					9	19
Total	38					19	19

% of Theory	
1st Year	42%
2nd Year	50%
3rd Year	26%
Total	39%

## YEAR I

## Mechatronics Engineering Technology

## Target :

General engineering technology, basic proficiency and knowledge of machine processing as well as the control of machines and measurements

	CREDIT	Sem. 1	Sem. 2
<b>THEORY</b>			
1.0 Engineering Mathematics	1		1
2.0 Production Engineering	1		1
3.0 Basic Engineering Mechanics			
3.1 Mechanic Engineering Outline	1	1	
3.2 Mechanical Dynamic	2	1	1
3.3 Material Dynamic	1	1	
3.4 Hydrodynamics	1	1	
4.0 Basic Material Technology	1	1	
5.0 Engineering Drawing / CADD	1	1	
6.0 Principle of Electrical / Electronic Eng. Outline	1	1	
7.0 Metrology and Quality Control	1		1
8.0 Information Engineering	2	1	1
9.0 Engineering Safety	1	1	
10.0 Mechanical / Industrial Engineering			
10.1 Mechanical Element	1		1
10.2 Mechanicms	1		1
11.0 Control Engineering	1		1
12.0 Measuring Methode			
12.1 Electrical / Electronic Measuring	1		1
12.2 Industrial Measuring	1		1
<b>Total</b>	<b>19</b>	<b>9</b>	<b>10</b>
<b>BASIC PRACTICES</b>			
1.0 General Machining (Mach. Processing Exer.)	4	2	2
2.0 General Mechanics			
2.1 Mechanical Engineering Experiments	2	2	
2.2 Basic Engineering Experiments	2	2	
3.0 General Electrical / Electronic (Experiments)	2		2
4.0 Information Processing Exercises	2	2	
5.0 Mechanical Design Drafting	2		2
<b>Total Practices</b>	<b>14</b>	<b>8</b>	<b>6</b>
Culture Subjects	6		
<b>Total Credit</b>	<b>39</b>		

YEAR 2

Target :

Proficiency and knowledge of the assembly and control of mechatronic equipment as well as the development of production system.

	CREDIT	Sem. 3	Sem. 4
<b>THEORY</b>			
1.0 Mechatronic Engineering	1	1	
2.0 Electronic Engineering	1	1	
3.0 System Design	1	1	
4.0 Computer Programming ( Com. Control )	1	1	
5.0 Pneumatic / Hydraulic Engineering	1	1	
6.0 Sequence Control	1	1	
7.0 Basic Machining Technology	1	1	
8.0 Vibration Engineering	1		1
9.0 Robotic Engineering	1		1
10.0 Production System Engineering 1	1		1
11.0 Numerical Control Engineering	1		1
12.0 Sensor Engineering	1		1
13.0 Electric Motor Engineering	1		1
<b>Total</b>	<b>13</b>	<b>7</b>	<b>6</b>
<b>BASIC PRACTICES</b>			
1.0 Electronic Engineering Experiment 1.1 Sequence Control Exercises	4	2	2
2.0 Control Engineering Experiment 2.1 Computer Control Exercises	4	2	2
3.0 Mechatronic Exercises	4	2	2
4.0 System Design Exercises	2		2
5.0 Production System Exercises	2	2	
6.0 Pneumatic and Hydraulic Exercises	4	2	2
7.0 Electric Motor Engineering Exercises	2		2
<b>Total Practices</b>	<b>22</b>	<b>10</b>	<b>12</b>
Culture Subjects	4		
<b>Total Credit</b>	<b>39</b>		

**YEAR 3**

**Target :**

Proficiency and knowledge of mechatronic engineering technology.

	<b>CREDIT</b>	<b>Sem. 5</b>	<b>Sem. 6</b>
<b>THEORY</b>			
1.0 Automation and Control Production System Engineering 2	1	1	
2.0 Machine Maintenance 2.1 Industrial Machine Maintenance	1	1	
<b>Total</b>	<b>2</b>	<b>2</b>	
<b>BASIC PRACTICES</b>			
1.0 Automation and Control 1.1 Automation Control Exercises 1.2 Robotics Engineering Exercises 1.3 Numerical Control Machining Exercises	2 2 2	2 2 2	
2.0 CAD / CAM Exercises	2	2	
3.0 Industrial Machine Maintenance 3.1 Machine Maintenance 3.2 Mechatronic Maintenance Exercises	2 2	2 2	
4.0 Measuring Engineering Exercises	2	2	
<b>Total Practices</b>	<b>14</b>	<b>14</b>	
Paper Working / Discussion	2	2	
Practise in Enterprise	10		10
Graduation Study	11		11
<b>Total Credit</b>	<b>39</b>		



資料 2 - (2) 各科の暫定実施計画：TSI (英文・和文)

		1996	1997	1998	1999	2000	2001	2002
ITEM	R/D		R/D					
	Terms of Cooperation			Start of Cooperation				End of Cooperation
Construction	Construction Design	←	→	Construction				
	Tender		←	→				
Machinery and Equipment	Specification	←	→	Acceptance				
	(Malaysia and Japanese side)		←	→				
Expert	Chief Advisor, Coordinator, Training Planning		←	→				
	Long-Term expert				Long-Term expert		Long-Term expert	
Training of Malaysian Counterpart	Engineering Consultancy Services							
	Short-Term Expert				Short-Term Expert	Short-Term Expert	Short-Term Expert	Short-Term Expert
Implementation of Training	Start of the Training in Japan							End of Training
	Opening							
Technology Transfer Contents	In case of entering in 1st year							graduation
	In case of entering in 2nd year						1st graduation	
Long-Term Expert①	Provision of machinery and equipment							
	NC Machine tool							
Long-Term Expert②	General machine tool							
	Utilize technology of FMS							

- Practical technology of NC machine tool
- FMS Automatic production line
- Maintenance technology of NC
- Practical technology of CAD/CAM/CAE/CAT
- Expansion technology of CAD/CAM System
- Totally final utilize and maintenance technology of each tool's

TENTATIVE SCHEDULE OF IMPLEMENTATION OF JMTI  
Electronic Engineering Technology

ITEM	1996			1997			1998			1999			2000			2001			2002		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
R/D																					
Terms of Cooperation																					
Construction																					
Machinery and Equipment																					
Expert																					
Training of Malaysian Counterpart																					
Implementation of Training																					
Technology Transfer Contents																					

- Long-Term Expert①
  - Electric circuit (Analog, Digital)
  - Electric measurements
  - Maicom (Hardware, Software)
- Long-Term Expert②
  - EDA (Electronic Design Automation)
  - Control (Hardware, PLC)





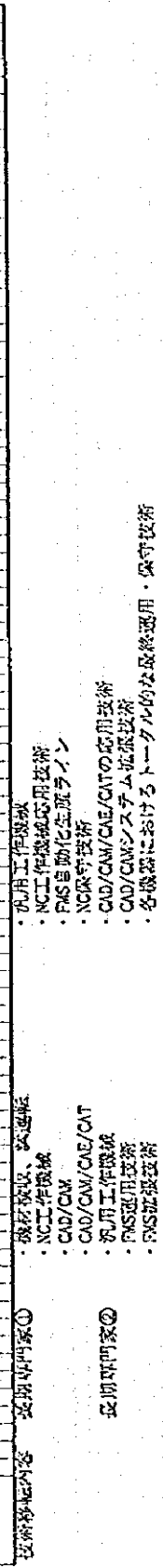
TENTATIVE SCHEDULE OF IMPLEMENTATION OF JMII  
Mechatronic Engineering Technology

ITEM R/D	1996			1997			1998			1999			2000			2001			2002		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Terms of Cooperation																					
Construction																					
Machinery and Equipment																					
Expert																					
Training of Malaysian Counterpart																					
Implementation of Training																					
Technology Transfer Contents																					

- Long-Term Expert ①
- Basic mechatronics
- Control (Computer control, Sequence control, Automated control)
- Actuator (Pneumatic and hydraulic engineering, Electro motor system, Industrial robot)
- Long-Term Expert ②
- Measuring (Basic industrial, sensor)
- System design (CAD/CAM, NC, production system, FMS)
- Maintenance of production line

日本マシニング技術学院暫定実施計画  
生産工学技術学科

項目	平成8年 (1996年)	平成9年 (1997年)	平成10年 (1998年)	平成11年 (1999年)	平成12年 (2000年)	平成13年 (2001年)	平成14年 (2002年)
R/D		④					
協力期間							協力終了
施設		建設					
機材の設置		建物入札					
専門家の派遣		「マ」 設備設計者の決定 入札 「日」 設備設計者の決定 「日」 設備器入札					
カウンターパート受け入れ							
技術学生への入学・卒業決定							
技術移転内容							



- 技術移転内容
- ① 技術移転、試運転
  - NC工作機械
  - CAD/CAM
  - CAD/CAM/CAE/CAT
  - 汎用工作機械
  - FMS活用技術
  - FMS拡張技術
- ② 長期専門家
- 汎用工作機械
  - NC工作機械活用技術
  - FMS自動化生産ライン
  - NC保守技術
  - CAD/CAM/CAE/CATの応用技術
  - CAD/CAMシステム拡張技術
  - 各機器におけるトータルの最終運用・保守技術

日本マレーシア技術学院暫定実施計画  
電子工学技術学科

項目	平成8年 (1996年)	平成9年 (1997年)	平成10年 (1998年)	平成11年 (1999年)	平成12年 (2000年)	平成13年 (2001年)	平成14年 (2002年)
R/D							
協力期間							
授業							
機器の整備							
専門家派遣							
カウンタパート受け入れ							
技術学院生の入学・卒業予定							
技術移転内容							

R/D: 研究開発  
 協力開始: 協力が開始された時期  
 協力終了: 協力が終了した時期  
 授業: 授業が行われる時期  
 機器の整備: 機器が整備される時期  
 専門家派遣: 専門家が派遣される時期  
 カウンタパート受け入れ: カウンタパートが受け入れられる時期  
 技術学院生の入学・卒業予定: 技術学院生の入学・卒業予定の時期  
 技術移転内容: 技術移転の内容

① 電子回路 (アナログ、デジタル)  
 ② 電子測定  
 ③ マイコン (ハードウェア、ソフトウェア)  
 ④ EDA (Electronic Design Automation)  
 ⑤ 制御 (ハードウェア、PLC)

日本マレーシア技術学院暫定実施計画  
情報工学技術学系

項目	平成8年 (1996年)	平成9年 (1997年)	平成10年 (1998年)	平成11年 (1999年)	平成12年 (2000年)	平成13年 (2001年)	平成14年 (2002年)
R/D							
協力期間							
開発							
操縦の支援							
専門家派遣							
カウンセラー パートタイ ム							
技術学院生 の入学・卒 業予定							
長年移転内容							

- ・アプリケーション開発基礎技術 (C, Visual Basic等)
- ・ネットワーク管理基礎技術 (OSの違いによる管理)
- ・PCのハードウェア管理技術 (パソコンのハードウェア等)
- ・Windowsのカスタマイズ及びアプリケーションの利用技術 (MS-Office等)
- ・アプリケーション開発応用技術 (C++, Visual C++等)
- ・ネットワーク管理応用技術 (インターネット等のWAN管理)
- ・ネットワークのハードウェア管理技術 (ネットワーク機器のカスタマイズ)
- ・Windowsのカスタマイズ及びアプリケーションの利用応用技術 (Statistica, MathCAD等)

長期専門家②

日本マレーシア技術学院暫定実施計画  
メカトロニクス工学技術学科

項目	平成8年 (1996年)	平成9年 (1997年)	平成10年 (1998年)	平成11年 (1999年)	平成12年 (2000年)	平成13年 (2001年)	平成14年 (2002年)
R/D	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
協力期間							
授業							
施設の設置							
専門派遣							
カウニング パート及び 入れ							
技師学生の 入学・卒 業予定							
技術者育成							

- ・メカトロニクス基礎
- ・制御 (コンピュータ制御、シークエンス制御、自動制御)
- ・アクチュエータ (油圧、電動機、産業用ロボット)
- ・計測 (計測基礎、センサ)
- ・システム設計 (CAD/CAM、NC、生産システム)
- ・機械保全

長期専門家②  
短期専門家①

資料2-(3) 各科目の訓練カリキュラム (英文・和文)

Listing of curriculum for Manufacturing Engineering Technology Department

1st year			
Curriculum subject	Units	Sem.1	Sem.2
<b>General Subject</b>			
Mathematics	2	1	1
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Sub total	6	3	3
<b>Basic Theory</b>			
Material Technology	2	1	1
Introduction to Electrical Engineering	1		1
Principle of Engineering Drawing	1	1	
Engineering Safety	1	1	
Computer Application	1	1	
Basic Measuring Instrument	1	1	
Computer Programming	1		1
Strength of Material	1		1
Ergonomic Engineering	1		1
Sub total	10	5	5
<b>Basic Practice</b>			
Basic Engineering Experiment	1		1
Sub total	1		1
<b>Specialized Theory</b>			
Production Technology & Machine Tools	1	1	
Precision Measurement Tools	1	1	
Machine Design	1		1
Deformation Process	1	1	
Theory of Mechanism	1		1
Precision Machining Technology	1		1
Numerical Control Engineering	1		1
Joining Engineering	1	1	
Basic Electronic Engineering	1		1
Sub total	9	4	5
<b>Specialized Practice</b>			
Machining Practice	6	3	3
Practice on Deformation Process	2	2	
Practice on Precision Measurement	2	2	
Machine Design And Drafting	2		2
Sub total	12	7	5
Total	38	19	19

Listing of curriculum for Manufacturing Engineering Technology Department

2nd year			
Curriculum subject	Units	Sem.3	Sem.4
<b>General Subject</b>			
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Physics	1	1	
Sub total	5	3	2
<b>Basic Theory</b>			
Thermodynamics	1	1	
Mechanic Dynamics	1	1	
Applied Mathematics	1	1	
Fluid Mechanics	1		1
Sub total	4	3	1
<b>Basic Practice</b>			
Mechanical Engineering Experiment	1	1	
Sub total	1	1	
<b>Specialized Theory</b>			
Control Engineering	1	1	
Sequence Control	1	1	
Pneumatic and Hydraulics Engineering	1		1
Electromagnetism	1		1
Robotic Engineering	1		1
CAD/CAM/CAE/CAT For Production	1		1
Sub total	6	2	4
<b>Specialized Practice</b>			
Machining Practice	3	3	
Practice on CNC Machining(Turning, Milling)	3	3	
Practice on Sequence Control	2	2	
Practice on CAD	2	2	
Practice on CNC Machining(Wire-Cut, EDM)	2		2
Practice on Robotic Engineering	2		2
Practice on Pneumatic and Hydraulic Engineering	2		2
Practice on CAD/CAM/CAE/CAT	3		3
Project-1(At the last 3 week)	3		3
Sub total	22	10	12
Total	38	19	19



Listing of curriculum for Manufacturing Engineering Technology Department

3rd year			
Curriculum subject	Units	Sem.5	Sem.6
<b>General Subject</b>			
Islamic Education or Moral Education	1	1	
Sub total	1	1	
<b>Basic Practice</b>			
Practice on Information Processing	1	1	
Practice on Simulation Engineering	2	2	
Sub total	3	3	
<b>Specialized Theory</b>			
Production Engineering	1	1	
Sensor Engineering	1	1	
Automatic Manufacturing System Technology	2	2	
Sub total	4	4	
<b>Specialized Practice</b>			
Practice on Machine Design	2	2	
Practice on Automatic Manufacturing System	4	4	
Practice on Automatic Manufacturing System Design	3	3	
Practice on Maintenance Manufacturing System	2	2	
Project(Practice in Enterprise/Graduation study)	19		19
Sub total	30	11	19
Total	38	19	19

Listing of curriculum for Electronics Engineering Technology Department

1st year			
Curriculum subject	Units	Sem.1	Sem.2
<b>General Subject</b>			
Mathematics	2	1	1
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Physics	1	1	
Sub total	7	4	3
<b>Basic Theory</b>			
Industry Safety	1	1	
Electric Engineering Safety Practice	1		1
Electrical/Electronic Principles & Measurement	4	4	
Analog Electronics	2	2	
Digital Electronics	2		2
Electrical/Electronic Measurement	1	1	
Computer Engineering	1	1	
Engineering Drawing(CAD/CAE)	1		1
Sub total	13	9	4
<b>Basic Practice</b>			
Safety Work Hygienic	1	1	
Experiments on Electronics Circuit	2	2	
Experiments on Analog Circuit	2		2
Experiments on Fundamental Digital Circuit	2		2
Measurement	2		2
Use of PC	2	2	
Drawing of Electronics	1		1
Sub total	12	5	7
<b>Specialized Theory</b>			
Communication Engineering	2	1	1
Sub total	21	7	14
<b>Specialized Practice</b>			
Power Supply Circuit	2		2
Computer Software	2		2
Sub total	4	0	4
Total	36	18	18

Listing of curriculum for Electronics Engineering Technology Department

2nd year			
Curriculum subject	Units	Sem.3	Sem.4
<b>General Subject</b>			
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Sub total	4	2	2
<b>Specialized Theory</b>			
Analog Electronics Circuit	2	2	
Power Electronics	2	2	
Digital Electronics Circuit	2	1	1
Microprocessor	1		1
Control Engineering	2	1	1
Electrical Drives	1	1	
Pneumatic System	1		1
Hydraulic System	1		1
Sensor (Transducer)	1	1	
Sub total	13	8	5
<b>Specialized Practice</b>			
Experiment on Analog Circuit	2	2	
Power Electronics	2	2	
Experiment on Digital Circuit	4	2	2
Computer Hardware	2		2
Interface Circuit	1		1
Sensor	2	2	
Electronics Design	2		2
Data Analysis	2		2
Synchro/Servo Electronics	1	1	
Pneumatic System	1		1
Hydraulic system	1		1
Preventive Maintenance	1		1
Sub total	21	9	12
Total	38	19	19

Listing of curriculum for Electronics Engineering Technology Department

3rd year			
Curriculum subject	Units	Sem.5	Sem.6
<b>General Subject</b>			
Islamic Education or Moral Education	1	1	
Sub total	1	1	
<b>Specialized Theory</b>			
Opto_Electronics	1	1	
PLC	1	1	
Sub total	2	2	
<b>Specialized Practice</b>			
Opto_Electronics	1	1	
PLD	4	4	
Data Analysis	2	2	
Communication Engineering	2	2	
PLC & Application	4	4	
PCB Design	2	2	
Trouble Shooting Techniques	1	1	
Project(Practice in Enterprise/Graduation study)	19		19
Sub total	35	16	19
Total	38	19	19

## Listing of curriculum for Computer Engineering Technology Department

1st year			
Curriculum subject	Units	Sem.1	Sem.2
<b>General Subject</b>			
Mathematics	2	1	1
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Physics	1		1
Sub total	7	3	4
<b>Basic Theory</b>			
Basic Electronic Engineering	2	1	1
Computer Engineering	2	1	1
Programming Technique	2	1	1
Operating System	2	1	1
Engineering Safety	1	1	
Sub total	9	5	4
<b>Basic Practice</b>			
Basic Exercises in Software Engineering 1	4	2	2
Basic Exercises in Software Engineering 2	4	2	2
Computer Engineering Exercises	4	2	2
Operating System Exercises	4	2	2
Electronics Exercises	4	2	2
Engineering Measurement Exercises	1	1	
Workshop Practice	1		1
Sub total	22	11	11
Total	38	19	19

Listing of curriculum for Computer Engineering Technology Department

2nd year			
Curriculum subject	Units	Sem.3	Sem.4
<b>General Subject</b>			
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Sub total	4	2	2
<b>Specialized Theory</b>			
Data Telecommunications Engineering	4	2	2
Database Systems	2	1	1
Computer Programming	2	1	1
Graphic Processing Engineering	2	1	1
Data Engineering	2	1	1
Microprocessor Technology 1	2	1	1
Sub total	14	7	7
<b>Specialized Practice</b>			
Software Engineering Exercises	4	2	2
Graphic Processing Exercises	4	2	2
Data Processing Exercises	4	2	2
Data Telecommunication Exercises	4	2	2
Microprocessor Technology Exercises 1	4	2	2
Sub total	20	10	10
Total	38	19	19

Listing of curriculum for Computer Engineering Technology Department

3rd year			
Curriculum subject	Units	Sem.5	Sem.6
<b>General Subject</b>			
Islamic Education or Moral Education	1	1	
Sub total	1	1	
<b>Specialized Theory</b>			
Control System	2	2	
Mathematical Statistics	2	2	
Microprocessor Technology 2	2	2	
Information Communication Engineering	2	2	
Sub total	8	8	
<b>Specialized Practice</b>			
Control System Exercises	2	2	
Microprocessor Exercises	2	2	
System Design Exercises	2	2	
Information Communication Engineering Exercises	2	2	
Management Analysis Exercises	2	2	
Project(Practice in Enterprise/Graduation study)	19		19
Sub total	29	10	19
Total	38	19	19

**Listing of curriculum for Mechatronics Engineering Technology Department**

1st year			
Curriculum subject	Units	Sem.1	Sem.2
<b>General Subject</b>			
Mathematics	2	1	1
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Physics	1		1
Sub total	7	3	4
<b>Basic Theory</b>			
Production Engineering	1		1
Mechanic Engineering Outline	1	1	
Mechanical Dynamic	2	1	1
Material Dynamic	1	1	
Hydrodynamic	1	1	
Basic Material Technology	1	1	
Engineering Drawing / CADD	1	1	
Principle of Electrical / electronic Engineering Outline	1	1	
Metrology and Quality Control	1		1
Information Engineering	1		1
Engineering Safety	1	1	
Mechanical Element	1		1
Mechanism	1		1
Control Engineering	1		1
Electrical / Electronic Measuring	1		1
Industrial Measuring	1		1
Sub total	17	8	9
<b>Basic Practice</b>			
General Machining (Machine Processing Exercise)	4	2	2
Mechanical Engineering Experiments	2	2	
Basic Engineering Experiments	2	2	
General Electrical/Electronic(Experiments)	2		2
Information Processing Exercise	2	2	
Mechanical Design Drafting	2		2
Sub total	14	8	6
Total	38	19	19



Listing of curriculum for Mechatronics Engineering Technology Department

2nd year			
Curriculum subject	Units	Sem.3	Sem.4
<b>General Subject</b>			
Islamic Education or Moral Education	2	1	1
Technical English & Communication	2	1	1
Sub total	4	2	2
<b>Specialized Theory</b>			
Mechatronic Engineering	1	1	
Electronic Engineering	1	1	
System Design	1	1	
Computer Programming ( Com. Control )	1	1	
Pneumatic / Hydraulic Engineering	1	1	
Sequence Control	1	1	
Basic Machining Technology	1	1	
Vibration Engineering	1		1
Robotic engineering	1		1
Production System Engineering 1	1		1
Sensor Engineering	1		1
Electric Motor Engineering	1		1
Sub total	12	7	5
<b>Specialized Practice</b>			
Sequence Control Exercise	4	2	2
Computer Control Exercise	4	2	2
Mechatronic Exercise	4	2	2
System Design Exercise	2		2
Production System Exercise	2	2	
Pneumatic and Hydraulic Exercise	4	2	2
Electric Motor Engineering Exercise	2		2
Sub total	22	10	12
Total	38	19	19

Listing of curriculum for Mechatronics Engineering Technology Department

3rd year			
Curriculum subject	Units	Sem.5	Sem.6
<b>General Subject</b>			
Islamic Education or Moral Education	1	1	
Sub total	1	1	
<b>Specialized Theory</b>			
Production System Engineering 2	1	1	
Industrial Machine Maintenance	1	1	
Numerical Control Engineering	1	1	
Sub total	3	3	
<b>Specialized Practice</b>			
Automation Control Exercise	2	2	
Robotics Engineering Exercise	2	2	
Numerical Control Machining Exercise	2	2	
CAD/CAM Exercise	2	2	
Machine Maintenance	2	2	
Mechatronic Maintenance Exercise	2	2	
Measuring Engineering Exercise	2	2	
Paper Working Discussion	1	1	
Project(Practice in Enterprise/Graduation study)	19		19
Sub total	34	15	19
Total	38	19	19

生産工学技術科のカリキュラム

1年生			
教科の科目	単位	I期	II期
一般教養			
数学	2	1	1
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
小計	6	3	3
基礎理論			
材料工学	2	1	1
電気工学概論	1		1
基礎製図	1	1	
安全工学	1	1	
コンピュータアプリケーション	1	1	
基礎測定学	1	1	
コンピュータプログラミング	1		1
材料力学	1		1
人間工学	1		1
小計	10	5	5
基礎実技			
基礎工学実験	1		1
小計	1		1
専攻理論			
生産工学・機械工作法	1	1	
精密測定学	1	1	
機械設計工学	1		1
塑性加工学	1	1	
機構学	1		1
精密加工学	1		1
数値制御工学	1		1
接合工学	1	1	
基礎電子工学	1		1
小計	9	4	5
専攻実技			
機械加工実習	6	3	3
塑性加工実習	2	2	
精密測定実習	2	2	
機械設計・製図	2		2
小計	12	7	5
合計	38	19	19

生産工学技術科のカリキュラム

2 学年			
教科の科目	単位	Ⅲ期	Ⅳ期
一般教養			
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
物理	1	1	
小計	5	3	2
基礎理論			
熱力学	1	1	
機械力学	1	1	
応用数学	1	1	
流体力学	1		1
小計	4	3	1
基礎実技			
機械工学実習	1	1	
小計	1	1	
専攻理論			
制御工学	1	1	
シーケンス制御	1	1	
油圧・空圧工学	1		1
電磁気学	1		1
ロボット工学	1		1
生産工学 (CAD/CAM/CAE/CAT)	1		1
小計	6	2	4
専攻実技			
機械加工実習	3	3	
数値制御加工実習 (CNC旋盤、マシニングセンタ)	3	3	
数値制御加工実習 (ワイヤーカット、NC放電加工)	2	2	
CAD実習	2	2	
CNCマシニング実習 (ワイヤーカット、EDA)	2		2
ロボット工学実習	2		2
油圧・空圧工学実習	2		2
CAD/CAM/CAE/CAT実習	3		3
プロジェクト1	3		3
小計	22	10	12
合計	38	19	19

生産工学技術科のカリキュラム

3 学年			
教科の科目	単位	V 期	VI 期
一般教養			
イスラム教育・道徳教育	1	1	
小計	1	1	
基礎実技			
情報処理演習	1	1	
シミュレーション工学実習	2	2	
小計	3	3	
専攻理論			
生産・品質管理	1	1	
センサー工学	1	1	
自動化生産システム工学	2	2	
小計	4	4	
専攻実技			
機械設計演習	2	2	
自動化生産システム実習	4	4	
自動化生産システム設計演習	3	3	
自動化生産システム保守実習	2	2	
プロジェクト2 (企業内実習・卒業研究)	19		19
小計	30	11	19
合計	38	19	19

電子工学技術科のカリキュラム

1 学年			
教科の科目	単位	I 期	II 期
一般教養			
数学	2	1	1
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
物理	1	1	
小計	7	4	3
基礎理論			
安全工学	1	1	
電気安全実習	1		1
電気/電子理論・計測	4	4	
アナログ電子工学	2	2	
デジタル電子工学	2		2
電気/電子測定	1	1	
コンピュータ工学	1	1	
製図(CAD/CAE)	1		1
小計	13	9	4
基礎実技			
安全衛生作業法	1	1	
電子回路実習	2	2	
アナログ回路実習	2		2
基礎デジタル回路実習	2		2
電気/電子測定実習	2		2
コンピュータ実習	2	2	
電子製図	1		1
小計	12	5	7
専攻理論			
情報通信工学	2	1	1
小計	21	7	14
専攻実技			
電源回路	2		2
コンピュータソフトウェア	2		2
小計	4	0	4
合計	36	18	18

電子工学技術科のカリキュラム

2 学年			
教科の科目	単位	Ⅲ期	Ⅳ期
一般教養			
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
小計	4	2	2
専攻理論			
アナログ電子回路	2	2	
パワーエレクトロニクス工学	2	2	
デジタル電子回路	2	1	1
マイクロプロセッサ	1		1
制御工学	2	1	1
電気機器	1	1	
空圧機器	1		1
水圧機器	1		1
センサ工学	1	1	
小計	13	8	5
専攻実技			
アナログ回路実習	2	2	
パワーエレクトロニクス	2	2	
デジタル回路実習	4	2	2
コンピュータハードウェア	2		2
インターフェイス回路	1		1
センサー	2	2	
電子設計実習	2		2
データ解析	2		2
シンクロ/サーボエレクトロニクス	1	1	
空圧機器実習	1		1
水圧機器実習	1		1
保守・予防保全実習	1		1
小計	21	9	12
合計	38	19	19

電子工学技術科のカリキュラム

3 学年			
教科の科目	単位	V期	VI期
一般教養			
イスラム教育・道徳教育	1	1	
小計	1	1	
専攻理論			
オプトエレクトロニクス工学	1	1	
プログラマブルコントローラ	1	1	
小計	2	2	
専攻実技			
オプトエレクトロニクス工学実習	1	1	
PLD設計・製作実習	4	4	
データ解析	2	2	
情報工学	2	2	
PLC・アプリケーション	4	4	
PCB設計・製作実習	2	2	
トラブルシューティング技法	1	1	
プロジェクト (企業内実習・卒業研究)	19		19
小計	35	16	19
合計	38	19	19



情報工学技術科のカリキュラム

1 学年			
教科の科目	単位	I 期	II 期
一般教養			
教養	2	1	1
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
物理	1		1
小計	7	3	4
基礎理論			
基礎電子工学	2	1	1
計算機工学	2	1	1
プログラミング技法	2	1	1
オペレーティングシステム	2	1	1
安全工学	1	1	
小計	9	5	4
基礎実技			
ソフトウェア工学基本実習Ⅰ	4	2	2
ソフトウェア工学基本実習Ⅱ	4	2	2
計算機工学実習	4	2	2
オペレーティングシステム実習	4	2	2
電子工学実習	4	2	2
工学計測実習	1	1	
ワークショップ実習	1		1
小計	22	11	11
合計	38	19	19

情報工学技術科のカリキュラム

2 学年			
教科の科目	単位	Ⅲ期	Ⅳ期
一般教養			
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
小計	4	2	2
専攻理論			
データ通信工学	4	2	2
データベースシステム	2	1	1
計算機プログラミング	2	1	1
画像処理工学	2	1	1
データ工学	2	1	1
マイクロプロセッサ工学 1	2	1	1
小計	14	7	7
専攻実技			
ソフトウェア工学実習	4	2	2
画像処理実習	4	2	2
データ処理実習	4	2	2
データ通信実習	4	2	2
マイクロプロセッサ工学実習 1	4	2	2
小計	20	10	10
合計	38	19	19

情報工学技術科のカリキュラム

3 学年			
教科の科目	単位	V 期	VI 期
一般教養			
イスラム教育・道徳教育	1	1	
小計	1	1	
専攻理論			
制御システム	2	2	
数理統計	2	2	
マイクロプロセッサ工学 2	2	2	
情報通信工学	2	2	
小計	8	8	
専攻実技			
制御システム実習	2	2	
マイクロコンピュータインターフェイス学実習	2	2	
システム設計実習	2	2	
情報通信工学実習	2	2	
経営分析実習	2	2	
プロジェクト (企業内実習・卒業研究)	19		19
小計	29	10	19
合計	38	19	19

メカトロニクス工学技術科のカリキュラム

1 学年			
教科の科目	単位	I 期	II 期
一般教養			
数学	2	1	1
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
物理	1		1
小計	7	3	4
基礎理論			
生産工学	1		1
機械工学概論	1	1	
機械力学	2	1	1
材料力学	1	1	
流体力学	1	1	
基礎材料工学	1	1	
工学製図/CADD	1	1	
電気・電子工学原理	1	1	
度量衡学・QC	1		1
情報工学	1		1
安全衛生工学	1	1	
機械要素	1		1
メカニズム	1		1
制御工学	1		1
電気/電子測定	1		1
測定工学	1		1
小計	17	8	9
基礎実技			
機械加工実習	4	2	2
機械工学実験	2	2	
基礎工学実験	2	2	
電気・電子工学実験	2		2
情報処理実習	2	2	
機械設計製図	2		2
小計	14	8	6
合計	38	19	19

メカトロニクス工学技術科のカリキュラム

2 学年			
教科の科目	単位	Ⅲ期	Ⅳ期
一般教養			
イスラム教育・道徳教育	2	1	1
技術英語及び英会話	2	1	1
小計	4	2	2
専攻理論			
メカトロニクス工学	1	1	
電子工学	1	1	
システム設計	1	1	
コンピュータプログラミング (制御)	1	1	
空圧・油圧工学	1	1	
シーケンス工学	1	1	
機械加工学	1	1	
振動工学	1		1
ロボット工学	1		1
生産システム工学1	1		1
センサー工学	1		1
電動機工学	1		1
小計	12	7	5
専攻実技			
シーケンス制御実習	4	2	2
コンピュータ制御実習	4	2	2
メカトロニクス実習	4	2	2
システム設計演習	2		2
生産システム実習	2	2	
空圧・油圧工学実習	4	2	2
電動機工学実験	2		2
小計	22	10	12
合計	38	19	19

メカトロニクス工学技術科のカリキュラム

3 学年			
教科の科目	単位	V 期	VI 期
一般教養			
イスラム教育・道徳教育	1	1	
小計	1	1	
専攻理論			
生産システム工学 2	1	1	
機械保全	1	1	
数値制御工学	1	1	
小計	3	3	
専攻実技			
自動制御実習	2	2	
ロボット工学実習	2	2	
数値制御加工実習	2	2	
CAD/CAM実習	2	2	
機械保全実習	2	2	
メカトロニクス保守実習	2	2	
計測工学実習	2	2	
ゼミナール	1	1	
プロジェクト (企業内実習・卒業研究)	19		19
小計	34	15	19
合計	38	19	19