



SAKTHI POLYTECHNIC COLLEGE, SAKTHI NAGAR-638 315



DEPARTMENT OF MECHANICAL ENGINEERING

UTILIZATION LIST OF EQUIPMENTS WITH COST

S.NO	NAME OF THE LABORATORY	NAME OF THE MAJOR EQUIPMENT /SYSTEMS/ MACHINES	NUMBER OF MACHINES	COST OF THE EQUIPMENT
1	LATHE AND DRILLING LAB	Centre Lathe 3"	15	442265.58
		Radial Drilling Machine	1	96762.62
		Upright Drilling Machine	1	15459
		Upright Drilling Machine	1	174506
		Centre Lathe 4 1/2"	2	105178.3
		Centre Lathe 6 1/2"	1	96539.04
		Power Hack Saw	1	17235.75
		Bench Ginder	1	2872.6
<b>TOTAL AMOUNT</b>				<b>950818.89</b>

Students learned the operations of lathe and drilling machines and practiced to make simple components with various features.



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1	FOUNDRY AND WELDING LAB	<b>ARC WELDING:</b>		
		IND ARC OIL COOLED TRASFORMER ARC WELDING MACHINE	1	32186
		IND ARC RECTIFIER SET ARC WELDING	1	26665.6
		STRAIGHT AND CIRCULAR CUTTING MACHINE	1	4403.15
		PROFILE CUTTING MACHINE	1	12116.83
		SPOT WELDING MACHINE	1	24440
		FLEXIBLE SHAFT GRINDING MACHINE (1 HP)	1	1450
		ANGLE GRINDER	1	3105.7
		HAND OPERATED SHEARING MACHINE	1	12025.6
		<b>GAS WELDING</b>		
		PEDESTAL GRINDING MACHINE	1	16693.6
		H.P, IND-O2 GAS CYLINDER	3	6112.04
		ACETYLENE CYLINDER	2	4304.4

S.NO	NAME OF THE LABORATORY	NAME OF THE MAJOR EQUIPMENT /SYSTEMS/ MACHINES	NUMBER OF MACHINES	COST OF THE EQUIPMENT
	FOUNDRY AND WELDING LAB	<b>FOUNDRY</b>		
		FOUNDRY TABLE WITH MOULDING SAND	5	Own Make
		MOULDING BOX	40	Own Make
		MOULDING TOOLS AND KITS	10 SET	2266.4
		TIG WELDING WITH ARGON CYLINDER (7 Cu.m)	1	47000
		ZIG-JAW CUTTING MACHINE (METAL & WOOD)	1	4600
		WRENCH POWER TOOL (WITH BOX SPANNER)	1 SET	6000
<b>TOTAL AMOUNT</b>				<b>203369.32</b>
<p>Students learned the method of mould preparation for various components. They practiced in gas welding and Arc welding for various types of joints.</p>				



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1	BASIC WORKSHOP	Bench Vice	56	6914.03
		Pipe Vice- Tiger	3	2700
		Pipe Vice- Rivex	1	2000
		Bench Drilling Machine	2	125165
		Bench Grinding Machine	1	2059.6
		CCTV Camera	1	Alumni Sponser
		Smoke Detector	1	Assemble by ECE Department
		Water Purifier	1	3000
		Battery	2 Nos	Taken From Transport
TOTAL AMOUNT				141838.63

The Students Learned the basic operations of Engineering



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1	SPECIAL MACHINES LAB	Tool and Cutter Grinder Machine	1	23972.4
		Surface Grinder Machine	1	24349.44
		Parrot Surface Grinder Machine	1	128400
		Cylindrical Grinding Machine	1	189000
		Shaping Machine All Gear(Batliboi)	1	59732.28
		Shaping Machine(D.M.K)	1	35986
		Slotting Machine 8"	1	43476
		Band Saw Machine(Laxson)	1	128258
		Bench Grinder Machine	1	11853.65
		Double Ended Bench Grinder	1	2059.6
		Capston Lathe	2	94560.75
		Automatic Lathe	1	116646.6
		Universal Milling Machine (Batliboi)	2	513558.44
		Universal Milling Machine (HMT)	1	294000
		Vertical Milling Machine(Prabha)	1	159300
Horizontal Milling Machine(Prabha)	1	159300		
<b>TOTAL AMOUNT</b>				<b>1984453.16</b>

Students learned the operations of machines used in workshops and practiced to make simple components.



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S.NO	NAME OF THE LABORATORY	NAME OF THE MAJOR EQUIPMENT /SYSTEMS/ MACHINES	NUMBER OF MACHINES	COST OF THE EQUIPMENT
1	CAD/CAM and PROCESS AUTOMATION LAB	Computers (LCD) Windows-7, 32 bit(OS), 4GB Ram, HD-1000GB	55 Computers	2023750
		Printer	1	13000
		LCD Projector,Screen	1	43510
		Web Camera	1	1850
		AC-Blue Star	4	240000
		Sound System With Amplifier	1 Set	11625
		CNC Machining Centre	1	Received from SACL
		CNC Turning Centre	1	Received from SACL
		CNC Milling Trianer	2	1250000
		CNC Turning Trianer	2	1230000
		Basic Pneumatic Trainer Kit with Compressor	1	77230

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	CAD/CAM and PROCESS AUTOMATION LAB	Basic Pneumatic Trainer Kit with Compressor	2	Compliment From Alumini
		Hydraulic Trainer Kit	1	Compliment From Alumini
		PLC Kit With Compressor	2	70350
		15 KVA UPS System Power Pack With 20 Battries	1	240000
		<b>Lenova(8GB RAM &amp; 258 SSD)</b>	<b>15</b>	<b>495600</b>
		<b>System Upgraded(4 GB RAM &amp; 120G-SSD)</b>	<b>55 Computers</b>	<b>194700</b>
<b>TOTAL AMOUNT</b>				<b>5891615</b>

Students learned the use of CAD softwares like Auto CAD, PRO-E, etc.,They learned the use of CNC simulation softwares and operation of CNC machines.



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1	THERMAL ENGINEERING LAB	4-Stroke (10 hp) Twin Cylinder Diesel Engine With Mechanical Break Attachment	1	28398
		4-Stroke (5hp)Single Cylinder Diesel Engine With Prony Brake	1	15103
		Multi-Cylinder Petrol Engine	1	34363
		Multi Cylinder Petrol Engine With Test Rig Panel	1	113400
		Two Stage(5hp) Air Compressor With Test Rig	1	28942
		Flash And Fire Point Apparatus (Open Cup)	1	6710
		Flash And Fire Point Apparatus (Close Cup)	1	6993
		Tosniwal Redwood Viscometer	1	7497
		Saybolt Viscometer	1	7749
		<b>Saybolt Viscometer</b>	<b>1</b>	<b>17462</b>
<b>TOTAL AMOUNT</b>				<b>266617</b>

Students learned the method of determining the thermal properties of fluid, Performance test of IC engines.



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1	REFRIGERATION AND AIR CONDITIONING LAB	Refrigeration Test Rig with All Accessories	1	24856
		Window Type Experimental Air Conditioner	1	95000
		Water Cooling Tower	1	36000
		Compressor, Condensor cut Section Model	1	1000
		Domestic Refrigerator	1	1500
<b>TOTAL AMOUNT</b>				<b>158356</b>

The Students learned the performance of Refrigerator, compressors and condensers.



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S.NO	NAME OF THE LABORATORY	NAME OF THE MAJOR EQUIPMENT /SYSTEMS/ MACHINES	NUMBER OF MACHINES	COST OF THE EQUIPMENT
1	AUTOMOBILE ENGINEERING LAB	Cut Section Model of Four Stroke Engine (Diesel)	1	23000
		Cut Section Model of Petrol Engine	1	13000
		Instruction Model of Two Stroke Petrol Engine	1	644
		Instruction Model of Two Stroke Diesel Engine	1	644
		Cut section of Single Cylinder Two Stroke Petrol Engine	1	9450
		Multi cylinder Diesel Engine	1	4000
		Multi cylinder Petrol Engine	1	Donated by Alumini Student
		Transmission System Mahindra Jeep	1	Donated by Sakthi Sugars LTD
		Diesel and Petrol Four Stroke Engine All Parts Assemblies	45 Spares	Received From College Buses-Spares
		Battery Charger Heavy and Light	Each 1	3500
		Carburator Assembly	3	2400
		Mechanical Pump Assembly	3	Received From College Buses-Spares
		Hydraulic Break Assembly	2	Received From College Buses-Spares
		Fuel Injection Pump Multi Cylinder	1	2735
		Clutch Assembly TATA	4	308
		Gear Box Assembly TATA	1	56765
		Gear Box Assembly Light Vechile	1	2000
Differential Assembly TATA	1	15098		
Differential Assembly Light Vechile	1	3000		

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	AUTOMOBILE ENGINEERING LAB	Streering Gear Box Assembly Heavy	1	250
		Streering Gear Box Assembly Light	1	200
		Self Motor Assembly	1	750
		Dynamo Assembly	1	500
		Alternator Assembly	1	500
		Wiper Motor Assembly	1	250
		Wheel Cylinder Assembly	1	200
		Break Drum with Break Assembly	1	500
		Steering Gear Wheel Model	1	250
		Ackerman Steering Gear Model	1	200
		Types of Pistons and Piston Rings	19	500
		Crank Shaft Piston and Connecting rod Assembly	1	1000
		Cam Shaft Timing Gear Assembly	1	Received From College Buses-Spares
		Piston and Connecting Rod Assembly	1	Received From College Buses-Spares
		Valve Assembly	1	Received From College Buses-Spares
	Fly Wheel and Ring Gear Assembly	1	Received From College Buses-Spares	
TOTAL AMOUNT				141644

The students studied about construction of various part of automobiles and use of them.



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1	METROLOGY LAB, MACHINE TOOL TESTING AND MAINTENANCE LAB	Combination Square Set	2	1414.56
		Screw Pitch Gauge (BSW and Metric)	4	96.8
		Bore Dail Gauge	1	2180.75
		Gear Tooth Vernier Caliper	2	5216.55
		Vernier Depth Gauge	1	660.23
		Outside Micrometer	18	1212.48
		Inside Micrometer	3	3800
		Digital Micrometer Outside	1	641
		Screw Thread Micrometer	2	175.22
		Telescopic Gauge	1 Set	3349.05
		Feeler Gauges	3 Set	175.22
		Dial Vernier Caliper	6	3349.05
		Vernier Calipers	17	9150
		Slip Gauge	1 Set	7800
		Sine Bar	1	2325
Degree Protractor	5	750		

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	METROLOGY LAB, MACHINE TOOL TESTING AND MAINTENANCE LAB	Straight Edge	2	1077
		Vernier Height Gauge	2	1678.75
		Try Squares	4	794
		Universal Bevel Protractor	1	1414.56
		Dial Test Indicator with Magnet Stand	3	1950
		Bench Centre-150mm	1	6405
		Gear Tooth Micrometer	1	630.45
		Spirit Level	2	48
		Digital Micrometer	2	7600
		Digital Level	2	11000
		Precision Spirit Level	1	4000
		Vernier Bevel Protractor	2	2000
		Digital Vernier Caliper	1	944
<b>TOTAL AMOUNT</b>				<b>81837.67</b>

Students learned the use of various measuring devices. They learned the alignment test carried out on various machines.