
	ADVANCED TRAINING INSTITUTE, HYDERABAD	PR04/F01
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I	SECTION CODE	RAC
II	SECTION NAME	REFRIGERATION AND AIR CONDITIONING
III	COURSE CODE	RAC-01
IV	COURSE TITLE	INSTALLATION REPAIR & MAINTENANCE OF A/C WINDOW & SPLIT TYPE
V	DURATION	01 Week
IV	OBJECTIVES	

On completion of the course, the learner will be able to understand various types of Air conditioner, it's operation and it's maintenance and able to do the practice on the contents as stated below:-

VI Course Content :


Theory topics	Practical Topics
Basic refrigeration cycle, status of the refrigerant in every spot, Basic electricity related with circuit, Terminal find out method, Component used in window type & split type A/C, Connection diagram of A/C by easy method, Practice the diagram on board by participant ,cooper tube operation, Preventive maintenance of room A/C, Good servicing practice of A/C following sequence, Common defect of A/c & remedies.	Terminal find out & identification of damage compressor, Testing of the components Electrical connection disconnect from live set rewiring & start the unit, Swaging, Flaring, brazing practice ,Preventive maintenance of room A/C, servicing practice of A/C following sequence, recovery, Evacuation, charging, leak testing, performance checking, Common defect find out of A/c & remedies

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I	SECTION CODE	RAC
II	SECTION NAME	REFRIGERATION AND AIR CONDITIONING
III	COURSE CODE	RAC-02
IV	COURSE TITLE	REPAIR & MAINTENANCE OF DOMESTIC REFRIGERATOR WITH ECO FRIENDLY REFRIGERANT
V	DURATION	01 Week
IV	OBJECTIVES	
<p>On completion of the course, the learner will be able to understand various types of refrigerant and it's handling techniques and able to do the practice on the contents as stated below:-</p>		

VI Course Content :


Theory topics	Practical Topics
<p>Introduction to the section, About Ozone ,Formation & harmful effect of UV-Rays, Action radius Indian Scenario, Tools & Equipment, Cooper tube operation, Refrigerant Recovery , Alternative refrigerant, Handling of HFC , Servicing of refrigerator carrying with HFC, Servicing of refrigerator with HC , Selection of Refrigerant & lubricant, Retro fitting with HC Blend. Common defect and remedies</p>	<p>Tools & Equipment handling, On Cooper tube Swaging, Flaring, brazing practice, Refrigerant Recovery , Servicing of refrigerator carrying with HFC, Servicing of refrigerator with HC , Retro fitting with HC Blend. Testing of the components Electrical connection disconnect from live set rewiring & start the unit, Common defect and remedies .</p>

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I	SECTION CODE	RAC
II	SECTION NAME	REFRIGERATION AND AIR CONDITIONING
III	COURSE CODE	RAC-03
IV	COURSE TITLE	REPAIR & MAINTENANCE OF CAR A/C WITH ECO FRIENDLY REFRIGERANT
V	DURATION	01 Week
IV	OBJECTIVES	
On completion of the course, the learner will be able to understand various types of refrigerant and servicing Car A/c and able to do the practice on the contents as stated below.		

VI Course Content :


Theory topics	Practical Topics
Introduction to the section, About Ozone ,Formation & harmful effect of UV-Rays, Action radius Indian Scenario, Tools & Equipment, Components of car A/C Cooper tube operation, Refrigerant Recovery , Alternative refrigerant, Handling of HFC , Servicing of Car A/C carrying with HFC, Retro fitting of car A/C with HC blend , Common defect and remedies	Tools & Equipment handling, Identification of car A/C components On Cooper tube Swaging, Flaring, brazing practice, Refrigerant Recovery , Servicing of refrigerator carrying with HFC, Servicing of refrigerator with HC , Retro fitting with HC Blend. Testing of the components Electrical connection disconnect from live set rewiring & start the unit, Common defect and remedies

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I	SECTION CODE	RAC
II	SECTION NAME	REFRIGERATION AND AIR CONDITIONING
III	COURSE CODE	RAC-04
IV	COURSE TITLE	HEAT LOAD CALCULATION (HVAC-I)
V	DURATION	01 Week
IV	OBJECTIVES	
On completion of the course, the learner will be able to understand how to calculate heat load.		

VI Course Content :


Theory topics	Practical Topics
Introduction & scope of HVAC System, Properties of Air, Water, Atmospheric pressure Fundamentals and Unit, basic refrigeration, Refrigerant Cycle Refrigerant, Secondary Coolants Lubricants & Refrigeration System. Components and control ,Psychometrics chart study, Heat load calculation method	Demonstrated on Heat load calculation for window , wall and floor

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I	SECTION CODE	RAC
II	SECTION NAME	REFRIGERATION AND AIR CONDITIONING
III	COURSE CODE	RAC-05
IV	COURSE TITLE	DUCT DESIGN & GREEN BUILDING CONCEPT (HVAC-II)
V	DURATION	01 Week
IV	OBJECTIVES	
On completion of the course, the learner will be able to understand about duct designing		

VI Course Content :

Theory topics	Practical Topics
Introduction & scope of HVAC System, Properties of Air, Water, Atmospheric pressure Fundamentals and Unit, basic refrigeration, Refrigerant Cycle Refrigerant, Secondary Coolants Lubricants & Refrigeration System. Components and control, Tonnage selection ,Duct designing, Estimation	No Practical

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I	SECTION CODE	RAC
II	SECTION NAME	REFRIGERATION AND AIR CONDITIONING
III	COURSE CODE	RAC-06
IV	COURSE TITLE	INSTALLATION, REPAIR & MAINTENANCE OF A/C MULTISPLIT TYPE (VRV-VRF)
V	DURATION	01 Week
IV	OBJECTIVES	
On completion of the course, the learner will be able to install and service Multi split type A/c		

VI Course Content :

Theory topics	Practical Topics
<p>Introduction to the section, Basic Refrigeration Cycle, Status of the refrigerant in every point of cycle.</p> <p>Basic electricity related to with circuit</p> <p>Terminal find out, Components used in VRV & VRF Type Multi-Split A/C like Electronic Expansion Valve (EEV)</p> <p>Connection diagram of A/C by easy method. Refrigerant Modulation in a VRF System. Copper tube operations,</p> <p>Design Considerations for VRF Systems</p> <p>Preventive maintenance of VRV & VRF type A/c, Sustainability, Simultaneous Heating and Cooling, VRF Advantages</p> <p>Recovery of the refrigerant, Service the refrigeration cycle, Install the unit</p>	<p>Terminal find out & identification of damage compressor[Practical]</p> <p>Testing of the components</p> <p>Electrical connection disconnect from live set, Identify the components, Terminal & Rewiring, run the set</p> <p>Practice the diagram on board by participants</p> <p>Swaging & Brazing practice using modern tool</p> <p>Cleaning of condenser, Evaporator, chemical, water, using dry nitrogen.</p> <p>Recovery of the refrigerant Recover the refrigerant from A/C Unit, Clean</p> <p>Dismantle the A/ C outer components including Fan</p> <p>Evacuate, Charge the unit</p> <p>Assemble, Run the unit & Install.</p>