



Gujarat Council of Vocational Training Gandhinagar



1. Name of Course:

Basic Industrial Hydraulic

NCO No. for Skills Covered
(Please refer National Classification of Occupations-2011 available on www.dget.mca.gov)

2. Engineering OR Non-engineering: Engineering

3. No. of students per batch: 20

4. Duration in Hours. : 40

5. Duration in Week : 1 (8 Hour/Day)

6. Examination Scheme:

No.	Name of Subject	Teaching Hours during full course.	Maximum Marks. (Excluding Sessional)	Minimum Marks required for Passing (Excluding Sessional)	Sessional Marks if any.
Subject-1	Course Theory	10	50	20	
Subject-2	Course Practical	30	100	60	
Subject-3					
Subject-4					
Subject-5					

7. Entry qualification for Trainee:

Minimum entry qualification (Essential):	10 th Pass/ Diploma/ B. Tech.
Desirable:	Basic Knowledge (Technical / Non-technical)

8. Minimum qualification for Trainers:

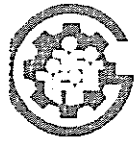


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2. Syllabus Committee Member:

Sr. No	Name	Organization	Designation	Technical Qualification	Experience in Years	Signature
1.	Mr. Chetan Rajdev	Bosch Rexroth India Ltd. Sanand	DGM	BE (Mech.)	20	
2.	Nitin Sapre	Bosch Rexroth India Ltd. Sanand	Sr. Manager	M.Tech. PhD(Pursuing)	23	
3.	Dr. J.P.Patel	Ganpat University	HOD (Mkt.)	PhD	17	
4	D.I.Patel	ITI, Mehsana	SI	Diploma	20	
5.	C.K.Chauhan	ITI, Mehsana	Principal	Diploma	20	



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10. Terminal Skills of trainee: (Should be well defined and having reference to NCO):

The trainee, after successful completion of training, will have following skills...

1. On successful completion of training one should be able to Design a system
Trouble shoot the system in Automation.
2. Technical Skill will help to get recruited in a reputed organization.
3. Using this technical expertise he can become an entrepreneur.
4. Technical Skill will help him her to get job across Globe.
5. Technical competence makes one confident & self-dependent.

(please attach separate sheet, if more space is required)

11. Approximate cost of Tools
Equipments Machinery for
Starting one batch of the course:

Rupees
Rs. 0.50 Crore

Reference Year
2016

12. Area required for practical Workshop for one batch.

50 Sq. Meters

13. Minimum Power connection required

1 KW

14.1 No of items in Standard list of Trainer kit:

1

14.1.1. Page NO from 5 to 5.

14.2 No of items in Standard list of Accessories

14.2.1. Page NO from 5 to 5.

1

14.3 No of items in Standard list of Component

14.3.1. Page NO from 5 to 5.

1

14.4 No of items in Standard list of Device sets



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Approved by GCVT in Governing Body meeting on

: 18.02.2017

Syllabus implemented w.e.f. admission session

: next session

Revision History :

1. Revision No..... Revision Date.
2. Revision No..... Revision Date.
3. Revision No..... Revision Date.



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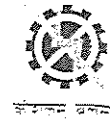
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Standard List of Trainer kit Component Accessories Device sets Equipment set
For Trade of Basic Industrial Hydraulic

Sr. No.	Description of Item with detailed specifications	Item type i.e. Machinery / Equipment OR Shop Outfit OR Trainee Toolkit	Quantity Required per one Batch of Students	Quantity Required per one Batch of Students for Instructor	Total Quantity Required (Total of previous two columns)
1.	Hydraulics WS290 work station WS290 work station, hydraulics, 230V/50Hz, double sided for 4 to 6 trainees, complete - assembled, including packaging	Trainer kit	1 Nos.		1 Nos.
2.	WS200 component carrier for hydraulic components WS200 work station, double sided component carrier - assembled, including packaging	Components	1 Nos.		1 Nos.
3.	Accessories spare parts for WS290 work station Accessories for WS290:	Accessories	1 Nos.		1 Nos.
4.	On/off hydraulics learning topics Equipment set TS-HS 201- IX	Equipment set	1 Nos.		1 Nos.
5.	Continuous control valve technology component sets proportional hydraulics	Accessories	1 Nos.		1 Nos.



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Name of Syllabus: Basic Industrial Hydraulic

Sector: Automation Sector

Terminal Competency: On successful completion of training one should be able to Design a system Trouble shoot the system in Automation.

Sr. No.	PRACTICAL	THEORY
1	<p>Practical of Basic Industrial Hydraulic</p> <ul style="list-style-type: none"> Elements of Hydraulic system. .Hierarchy, Comparison between Pneumatics & Hydraulics. Properties of different Energy Media. Function. Construction, Working Principles and Characteristics of Hydraulic Pumps like Gear, Vane and Piston Pumps. Installation of Pump. Construction of Power pack unit. Directional Control Valves, Poppet design concept, Spool design concept. Various switch overlaps & its 	<p>Contents of Basic Industrial Hydraulic</p> <ul style="list-style-type: none"> Fundamentals of Hydraulics covering: Basic Laws say Pascal's Law, Brahma's Principle, Reynold's number etc. Elements of Hydraulic system. .Hierarchy, Comparison between Pneumatics & Hydraulics. Properties of different Energy Media. Function. Construction, Working Principles and Characteristics of Hydraulic Pumps like Gear, Vane and Piston Pumps. Installation of Pump. Construction of Power pack unit. Directional Control Valves, Poppet design concept, Spool design concept. Various switch overlaps & its effect on function of Directional Control Valves.



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<p>valve.</p> <p>Meter-in & Meter – out</p> <p>.Understanding various mounting possibilities</p> <p>Check Valves.</p> <p>Various types of Check Valve like direct & Pilot operated etc.</p> <p>Cylinder and its types.</p> <p>Control of Double Acting Cylinder.</p> <p>Using Different components in circuit.</p> <p>Logical Building Block.</p> <p>Hydraulic accessories.</p> <p>Accumulator, Pressure switch, Filters & Gauges.</p> <p>Importance of Oil cleanliness/ Contamination control in Hydraulics.</p> <p>Safety Consideration & Troubleshooting.</p> <p>Latching Circuits.</p>	<p>Check Valves.</p> <p>Various types of Check Valve like direct & Pilot operated etc.</p> <p>Cylinder and its types.</p> <p>Control of Double Acting Cylinder.</p> <p>Drawing Basic Hydraulic Circuit .</p> <p>Using Different components in circuit.</p> <p>Logical Building Block.</p> <p>Hydraulic accessories.</p> <p>Accumulator, Pressure switch, Filters & Gauges.</p> <p>Importance of Oil cleanliness/ Contamination control in Hydraulics.</p> <p>Safety Consideration & Troubleshooting.</p> <p>Latching Circuits.</p>
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Signature:

Mr. Chetan Rajdev

Nitin Sapre

Dr. J.P.Patel

D.I.Patel

C.K.Chauhan