



Gujarat Council of Vocational Training Gandhinagar



1. Name of Course:

Advanced Industrial Pneumatics

NCO No. for Skills Covered
(Please refer National Classification of
Occupations -2004 available
on www.dget.mca) _____

_____	_____	_____	_____
_____	_____	_____	_____

2. Engineering OR Non-engineering: Engineering

3. No. of students per batch: 20

4. Duration in Hours. : 48

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	16	50	20	
Subject-2	Course Practical	32	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 Trainer:

Minimum qualification (Essential):	Diploma Engg. (Mechanical/ Electronics)
Desirable:	Technical Knowledge



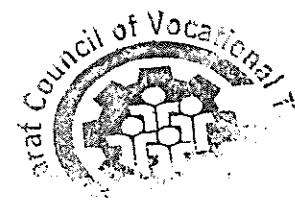
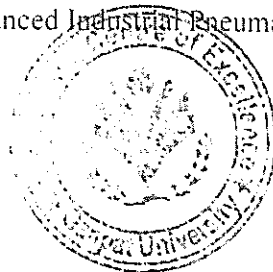


**Gujarat Council of Vocational Training
Gandhinagar**



1. Syllabus Committee Member:

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





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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

1

14.2.1. Page NO from 5 to 5.

14.3 No of items in Standard list of Device sets:

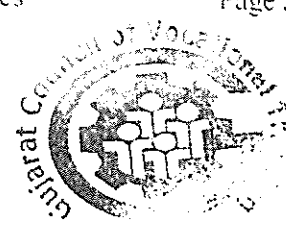
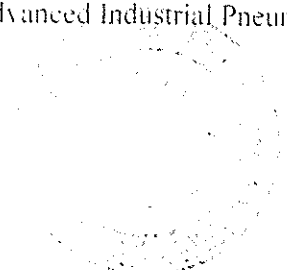
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14.3.1. Page NO from 5 to 5.

14.4 No of items in Standard list of Equipment sets:

1

14.4.1. Page NO from 5 to 5.





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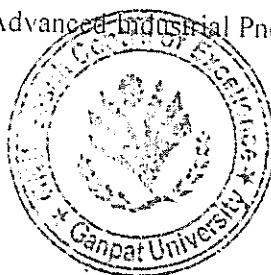
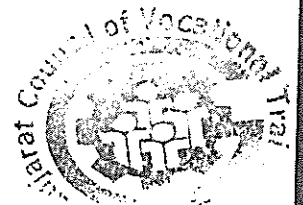


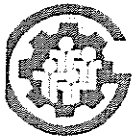
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Approved by GCVT in Governing Body meeting on : 18-02-2017

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.

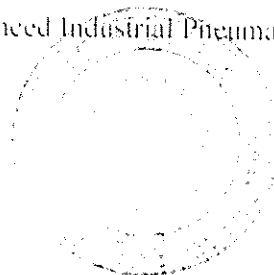
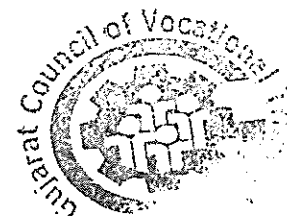




Standard List of Trainer kit/ Accessories/ Device sets/ Equipment set

For Trade of Advanced Industrial Pneumatics

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.	Pneumatics WORKSTATION TS- DS3-1X LK0E0010-M	Trainer kit	1 Nos.		1 Nos.
2.	Storage cupboards and accessories	Accessories	1 Nos.		1 Nos.
3.	Pneumatic device sets - pneumatic control	Device sets	1 Nos.		1 Nos.
4.	Equipment set for setting up pneumatic pressure control or position control	Equipment set	1 Nos.		1 Nos.





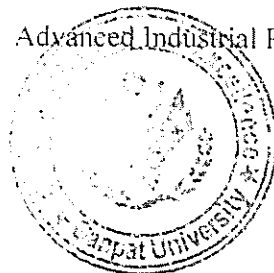
**GUJARAT COUNCIL OF VOCATIONAL TRAINING
GANDHINAGAR**

Name of Syllabus: Advanced Industrial Pneumatics

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 Advanced Industrial Pneumatics</p> <ul style="list-style-type: none"> - Elements of Pneumatic system. - Hierarchy, Comparison between Pneumatics & Hydraulics. - Properties of different Energy Media. - Air Preparation & Distribution. - Air regulator, Filter, Lubricator, Service units. - Air Leakage & its effects - Different types of Dryers & Filters - Directional Control Valves, Valve Port numbering & Lettering system. - Cylinder and its types. - Control of Single Acting & Double Acting Cylinder. - Flow control valves. - Simple Throttle & One way Flow Control valve, its operation.. - Meter-in & Meter – out - Understanding various mounting possibilities - Drawing Basic Pneumatic Circuit. - Using Different components in 	<p>Contents of Advanced Industrial Pneumatics</p> <ul style="list-style-type: none"> □ Fundamentals of Pneumatics covering: Basic Laws say Boyle – Mariotte’s Law etc. - Advantages & Limitations - Elements of Pneumatic system, Hierarchy, Comparison between Pneumatics & Hydraulics. - Properties of different Energy Media. - Air Preparation & Distribution, Air regulator, Filter, Lubricator, Service units. - Air Leakage & its effects - Different types of Dryers & Filters - Directional Control Valves, Valve Port numbering & Lettering system. - Cylinder and its types. - Control of Single Acting & Double Acting Cylinder. - Flow control valves. - Simple Throttle & One way Flow Control valve, its operation.. - Meter-in & Meter – out - Understanding various mounting possibilities - Drawing Basic Pneumatic Circuit.





<p>circuit.</p> <ul style="list-style-type: none"> - Special Purpose valves . say Dual Pressure valve, Shuttle valve, Quick Exhaust Valve etc. - Logical Building Block. - Functional Block Diagram. - Safety Consideration & Troubleshooting. - Latching Circuits. - Properties of Electro - Pneumatics . - Principal & Operation of Solenoid Valve. . - Various Types of Electrical Contacts . - Switching Symbols . - Relay & Its Operation - Logical Building Block (Electrical). - Basic Circuit Diagram. - Electrical Latching Circuits. - Electrical Memory Circuits. - Stroke Dependent Control. - Pressure Dependent Control. - Exercises to related topics. - Piston Diameter & Air consumption calculations. 	<p>Using Different components in circuit.</p> <ul style="list-style-type: none"> - Special Purpose valves , say Dual Pressure valve. Shuttle valve, Quick Exhaust Valve etc. - Logical Building Block. - Functional Block Diagram. - Safety Consideration & Troubleshooting. - Latching Circuits. - Properties of Electro - Pneumatics . - Principal & Operation of Solenoid Valve. . - Various Types of Electrical Contacts . - Switching Symbols . - Relay & Its Operation - Logical Building Block (Electrical). - Basic Circuit Diagram. - Electrical Latching Circuits. - Electrical Memory Circuits. - Stroke Dependent Control. - Pressure Dependent Control. - Exercises to related topics. - Piston Diameter & Air consumption calculations.
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Signature:

Mr. Chetan Rajdev

Nitin Sapre

Dr. J.P.Patel

D.I.Patel

C.K.Chauhan

