ક્રમાંક:સીટીએસ/ચ-૪/૨૦૧૯/ ૧૧૭ ૮૯
રોજગાર અને તાલીમ નિયામકશ્રીની કચેરી,
ગુજરાત રાજ્ય, બ્લોક નં.૧/3 જો માળ,
ડૉ.જીવરાજ મહેતા ભવન, ગાંધીનગર.
તારીખ:૨૮/૧૧/૨૦૧૯

પ્રતિ,
નાયબ નિયામકશ્રી(તાલીમ),
પ્રાદેશિક કચેરી,
અમદાવાદ /વડોદરા /રાજકોટ /સુરત.

વિષય: <u>ભારત સરકારના પત્રો પરત્વે જરૂરી કાર્યવાહી કરવા બાબત.</u>

સંદર્ભ:શ્રમ અને રોજગાર વિભાગ,ગાંધીનગરનો તારીખ:૧૧/૧૧/૨૦૧૯નો પત્ર ક્રમાંક:પરચ/૧૦૨૦૧૯/૧૧૦૦૧૨/આર-૨

શ્રીમાન,

ઉપરોક્ત વિષય અન્વયે જણાવવાનું કે, શ્રમ અને રોજગાર વિભાગ, ગાંધીનગર સંદર્ભિત પત્ર સાથે કૌશલ્ય વિકાસ અને ઉદ્યોગસાહસિકતા મંત્રાલય, ભારત સરકાર, નવી દિલ્હીના નીચે દર્શાવ્યા મુજબના પત્રોની નકલ અત્રે મળેલ છે. જે અન્વયે અનુગામી કાર્યવાહી કરવા આપના તાબા હેઠળની તમામ સરકારી/ગ્રાન્ટ-ઇન-એઇડ/સ્વનિર્ભર ઔદ્યોગિક તાલીમ સંસ્થાઓને આપશ્રીની કક્ષાએથી મોકલી આપવા યોગ્ય પ્રબંધ કરશો.

Sr.No.	Letter No & Dated	Subject
1	MSDE (DGT)-02/01/2019-CD, Dt.19/9/2019	Re-distribution of yearly instructional hours of all traders under CTS-reg. (અગાઉ ઈમેલ દ્વારા મોકલી આપેલ છે)
2	MSDE (DGT)-02/01/2019-CD, Dt.19/9/2019	Implementation of common syllabus of workshop calculation & Science and Engineering Drawing (ED) for all Engineering Trades under CTS w.e.f. admission session August,2019 and onwards and for second year students of 2018-19 enrolment (અગાઉ ઈમેલ દ્વારા મોકલી આપેલ છે)
3	DGT-MIS011/1/2018-0/o DIR(TC), Dt.03/09/2019	Revised schedule for admission in courses under Craftsmen Training Schemes (CTS) for session 2019-20 (અગાઉ ઈમેલ દ્વારા મોકલી આપેલ છે)
4	H-2011/2/2014-SDE(Vol-IV)pt.1, Dt.09/10/2019	Instruction to State Skill Development Mission- reg.

આપનો વિશ્વાસુ

(એ.સી.મુલિયાણા)
નાયબ નિયામક(તાલીમ)
રોજગાર અને તાલીમ
ગાંધીનગર

<u>બિડાણ:</u> ઉપર મુજબ

<u>નકલ રવાના જાણ તથા જરૂરી કાર્યવાહી સારૂ:</u>

શાખાઅધિકારીશ્રી, શાખા:ઘ(GIA-SF),ચ-૧,ચ-૬,શાખા:વ(મહેકમ), શાખા:ફ(એફીલીએશન), શાખા:ર(ખરીદી), CoE, PPP, ઇન્સ્પેકશન, જી.સી.વી.ટી., આઇ.ટી.સેલ, વડી કચેરી, ગાંધીનગર તરફ

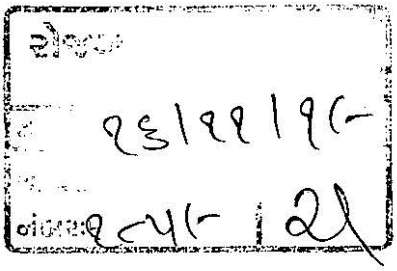
<u>નકલ સવિનય રવાના:</u>

કમિશનરશ્રી, ટેકનિકલ કમિશનરશ્રીની કચેરી, બ્લોક નં.૨-ડી, કર્મયોગી ભવન, છઠ્ઠો માળ, સેકટર-૧૦/એ, ગાંધીનગર-૩૮૨૦૧૦ તરફ.

નાડીયા/Admission-2019/

ક્રમાક: પરચ/૧૦૨૦૧૯/૧૧૦૦૧૨/આર-૨

શ્રમ અને રોજગાર વિભાગ,
બ્લોક નં.૫/૬, સરદાર ભવન,
સચિવાલય, ગાંધીનગર
તા.૧૧/૧૧/૨૦૧૯



પ્રતિ,
નિયામકશ્રી,
રોજગાર અને તાલીમ,
ડૉ. જીવરાજ મહેતા ભવન,
ગાંધીનગર

વિષય: ભારત સરકારના પત્રો પરત્વે જરૂરી કાર્યવાહી કરવા બાબત

શ્રીમાન,

ઉપર્યુક્ત વિષય અન્વયેના કૌશલ્ય વિકાસ અને ઉદ્યોગસાહસિકતા મંત્રાલય, ભારત સરકાર, નવી દિલ્હીના નીચે મુજબના પત્રોની નકલ આ સાથે મોકલી આપવામાં આવે છે. જે અન્વયે જરૂરી કાર્યવાહી કરવા વિનંતી છે.

ક્રમ	પત્ર ક્રમાંક તથા તારીખ	વિષય
૧	MSDE (DGT)-02/01/2019-CD, Dt.19/9/19	Re-distribution of yearly instructional hours of all traders under CTS - reg.
૨	MSDE (DGT)-02/01/2019-CD, Dt.19/9/19	Implementation of common syllabus of workshop calculation & science and engineering drawing (ED) for all engineering trades under CTS w.e.f. admission session August, 2019 and onwards and for second year students of 2018-19 enrolment
3	DGT-MIS011/1/2018-O/o DIR (TC), Dt.3/9/19	Revised schedule for admission in courses under craftsmen training schemes (CTS) for session 2019-20
४	H-2011/2/2014-SDE(Vol-IV)pt.1, Dt.9/10/19	Instruction to state skill development mission - reg.

બિડાણ: ઉપર મુજબ

આપનો વિશ્વાસુ,

(એચ.આર.પટેલ)
સેક્શન અધિકારી
શ્રમ અને રોજગાર વિભાગ

MSDE (DGT) – 02/01/2019-CD
Government of India
Ministry of Skill Development & Entrepreneurship
Directorate General of Training (DGT)

Employment Exchange Building,
Library Avenue, Pusa Complex,
New Delhi- 110012 dated: 19.09.2019

To,

-All Chief Secretaries/ Principal Secretaries/Secretaries/ Director(s)/Commissioner of the State Government/UTs dealing with Skill Development /Craftsman Training Scheme
- RDSDE/Principal of NSTIs

Subject: Re-distribution of Yearly Instructional hours of all trades under CTS -regarding

Sir/Madam,

On analyzing the instructional hours (including weekends and public holidays) and calculating at 40 hours per week, it is decided to redistribute the yearly instructional hours within 1600 hrs for 1 yr and 2 yr trades and 800 hrs for six monthly trade. The as per annexure attached and it is incorporated in the respective syllabus also.

The details of yearly distribution of duration of activities including revision, examination, holidays, session break etc is as follows:-

A) For 1 yr and 2 yr trades

Sl. No	Particulars of Activities	Duration (in weeks) for 1 and 2 year trades	Remarks
1.	Instructional activities	40	Start of session 1st Aug
	Public and local Holidays	3.5	
2.	Revision /Project work	01	June 1st wk
3.	AITT Examination	03	June 2nd, 3rd & 4th wk
4.	Session Break	4.5	Entire month of July
	Total	52	

B) For six monthly trades

Sl. No	Particulars of Activities	Duration (in weeks) for 06 monthly trades	Remarks
1.	Instructional activities	20	Start of session 1st Aug
	Public and local Holidays	1.5	
2.	Revision /Project work	1.5	Jan 1st wk
3.	AITT Examination	01	Jan 2nd wk
	Total	24	

The Session Break of July should be utilized for the maintenance/repair of Workshops, Hostel ,Machinery & Equipment, Completion of admission formality, Purchase of raw materials etc and any refresher training for faculties including Principal and workshop attendants etc .

Contd...2/-

This supersedes all the earlier orders issued in this regard, and will apply to all students of 2019-20 academic session onwards, and also to second year students of 2018-19 enrolment.

Yours faithfully

(Rajesh Aggarwal)
DG/AS

Copy to: (for information):

- PPS to DDG (C,P &Admn), DGT, MSDE
- All Directors at DGT (HQ), New Delhi
- Director, T.T. Cell, DGT(HQ), New Delhi
- Director, CSTARI: is requested to change the instructional hours in all trade syllabi accordingly.
- Executive Director, NIMI: is requested to prepare the instructional materials for all trades accordingly.

(G.Giri)
Joint Director, (CD & STRIVE)

(One and Two year CTS Engineering Trades)

Yearly Hour Distribution

S No.	Course Element	Notional Training Hours	
		1st Year	2nd Year
1	Professional Skill (Trade Practical)	1000	1000
2	Professional Knowledge (Trade Theory)	280	360
3	Workshop Calculation & Science	80	80
4	Engineering Drawing	80	80
5	Employability Skills	160	80
	Total	1600	1600

Distribution of training on Hourly basis: (Indicative only)						
Year	Total Hrs /week	Trade Practical	Trade Theory	Workshop Cal. & Sc.	Engg. Drawing	Employ ability Skills
1st	40	25 Hours	7 Hours	2 Hours	2 Hours	4 Hours
2nd	40	25 Hours	9 Hours	2 Hours	2 Hours	2 Hours

(One and Two year CTS D'Man Trades)

Yearly Hour Distribution

S No.	Course Element	Notional Training Hours	
		1st Year	2nd Year
1	Professional Skill (Trade Practical)	1120	1120
2	Professional Knowledge (Trade Theory)	240	320
3	Workshop Calculation & Science	80	80
4	Employability Skills	160	80
	Total	1600	1600

Year	Total Hrs /week	Trade Practical	Trade Theory	Workshop Cal. & Sc.	Employability Skills
1st	40 Hours	28 Hours	6 Hours	2 Hours	4 Hours
2nd	40 Hours	28 Hours	8 Hours	2 Hours	2 Hours

(One and Two year CTS Non-Engineering Trades)

Yearly Hour Distribution

S No.	Course Element	Notional Training Hours	
		1st Year	2nd Year
1	Professional Skill (Trade Practical)	1200	1200
2	Professional Knowledge (Trade Theory)	240	320
3	Employability Skills	160	80
	Total	**1600**	**1600**

Distribution of training on Hourly basis: (Indicative only)			
Total Hrs /week	**Trade Practical**	**Trade Theory**	**Employability Skills**
40 Hours	30 Hours	6 Hours	*4 Hours*
40 Hours	30 Hours	8 Hours	*2 Hours*

(06 months CTS Trades)

Yearly Hour Distribution

S No.	Course Element	Notional Training Hours
1.	Professional Skill (Trade Practical)	500
2.	Professional Knowledge (Trade Theory)	140
3.	Employability Skills	160
	Total	**800**

Distribution of training on Hourly basis: (Indicative only)			
Total hours / week	**Trade practical**	**Trade theory**	**Employability Skill**
40 Hours	25 Hours	7 Hours	8 Hours

રોજગાર અને તાલીમ
તારીખ:- 20/9/19
આવક નંબર:- 928
શાખા 21

MSDE (DGT) – 02/01/2019-CD
Government of India
Ministry of Skill Development & Entrepreneurship
Directorate General of Training (DGT)

Employment Exchange Building,
Library Avenue, Pusa Complex,
New Delhi- 110012 dated: 19.09.2019

To,

-All Chief Secretaries/ Principal Secretaries/Secretaries/ Director(s)/Commissioner of the State Government/UTs dealing with Skill Development /Craftsman Training Scheme
- RDSDE/Principal of NSTIs

Subject: Implementation of common syllabus of Workshop Calculation & Science and Engineering Drawing (ED) for all Engineering Trades under CTS w.e.f. admission session August, 2019 and onwards and for second year students of 2018-19 enrolment.

Sir/Madam,

You may be aware that All India Trade Test (AITT) under CTS is conducted in 22 groups in Workshop Calculation & Science and 20 groups in Engineering drawing for Engineering trades under CTS. Therefore an analysis has been made and following decisions are taken for implementation w.e.f. admission session August, 2019 and onwards.

a) There will be a common syllabus in Workshop Calculation & Science of 80 hours of duration for 1st year and another common syllabus of 80 hours duration for 2nd year for all Engineering trades.
b) Similarly for Engineering Drawing there will be one common syllabus of 80 hours duration for all Engineering trades for 1st year
c) There will be three syllabuses for Engineering Drawing of 80 hours duration each in 2nd year for three different groups (Group – I:- Mechanical Trade Group of 22 Trades, Group – II:- Electrical Electronics and IT Trade Group of 17 Trades and Group – III:- Vessel Navigator Trade Group of 1 Trade). The detail of trade group is attached in anx-I.

The details of the syllabuses both in Workshop Calculation &Science and Engineering Drawing for 1st and 2nd year and three groups of Engineering Drawing for 2nd year are annexed (anx-II & III).

However Trade specific Workshop Calculation & Science and Engineering Drawings content of existing syllabus is shifted to respective Trade theory syllabus and will be a part of trade theory question paper in All India Trade Test.

You are therefore requested to advise all the stake holders of CTS i.e. Principals of Govt. & Pvt. ITIs to conduct the classes on the above subjects as per new structure of syllabus for the session August, 2019 and onwards. This will also be applicable to second year students of 2018-19 enrolment.

Yours faithfully

(Rajesh Aggarwal)
DG/AS

Copy to: (for information):

- PPS to DDG (C,P &Admn), DGT, MSDE
- All Directors at DGT (HQ), New Delhi
- Director, T.T. Cell, DGT, HQ, New Delhi
- Director, CSTARI: is requested to incorporate the changes in all trade syllabi accordingly.
- Executive Director, NIMI: is requested to prepare the instructional materials for all trades accordingly.

(G.Giri)
Joint Director, (CD & STRIVE)

Circulate to all ITIs & RDDs

Annex-I

Group wise list of Trades for Engineering Drawing 2nd year

GROUP-I (Mechanical Trade Group)

Following 22 trades have been covered in Mechanical Trade Group.

1. Fitter
2. Turner
3. Machinist
4. Machinist Grinder
5. Mechanic Machine Tool Maintenance
6. Operator Advance Machine Tool
7. Mechanic Motor Vehicle
8. Mechanic Agriculture Machinery
9. Ref. & A/C Mechanic,
10. Central Air Conditioning Plant
11. Mechanic Mining Machinery
12. TDM (D&M)
13. TDM (J&F)
14. Marine Fitter
15. Aeronautical Structure
16. Spinning Technician
17. Textile Wet Processing Technician
18. Weaving Technician
19. Textile Mechatronics
20. Painter General,
21. Mechanic Maint. (Chemical Plant)
22. Refractory Technician

GROUP –II (Electrical, Electronics & IT Trade Group-16 Trades).

1. Electroplater
2. Lift & Accelerator Mechanic
3. Electrician
4. Medical Electronics
5. Technician Mechatronics
6. Wireman
7. Electrician Power Distribution
8. Instrument Mechanic
9. Technician Power Electronics System
10. Electronics Mechanic
11. Mechanic Consumer Electronics Appliances
12. Instrument Mechanic (Chemical Plant)
13. Attendant Operator (Chemical Plant)
14. Laboratory Attendant (Chemical Plant)
15. Information & Communication Technology System Maintenance
16. Information Technology

GROUP-III (Vessel Navigator - 01 Trade)

Annex-II

Competency Based Curriculum

Of

(Workshop Calculation & Science)

For

CRAFTSMAN TRAINING SCHEME (CTS)

Redesigned in 2019
Version 1.2

Developed by

Government of India
Ministry Skill Development and Entrepreneurship
Directorate General Training
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE
EN-81, Sector - V, Salt Lake
Kolkata – 700091

WORKSHOP CALCULATION & SCIENCE

CONTENTS

A. RATIONALE

Core skills enhance knowledge, Analytical ability, problem solving ability, understanding or comprehending drawings & designs and also enriches on scientific principles. At the same time it creates the base for achieving hands-on skills. To carry out any skill related task the know how about basic science & related calculation is essential as it helps in scientific way of executing the task.

Presently the employers want not only simple execution of assigned task but also give weightage on Innovative ideas in work place along-with problem solving. A person can stimulate innovative ideas and solve problems if he possesses basic core skill such as (Calculation and Science). More importantly the productivity of a person also enhances and gives confidence to person to perform task competently.

Recognising this importance, the core skills (Workshop Calculation and science) made an integral part of all Engineering Trade run under DGT. The content of Workshop Calculation and science is common for first year for all Engineering Trades. The content of 2nd year is also made common for all Engineering Trades having duration of more than one year.

b. GENERAL INFORMATION

1. **Name of the subject** : **WORKSHOP CALCULATION & SCIENCE**

2. **Applicability :** For all Engineering trades under CTS.

3. **Hours of Instruction:** 80 Hrs for 1st Year
   80 Hrs for 2nd Year

4. **Examination:** The examination for the subject will be held at the end of each year.

5. **Marks Distribution :**

Examination	Full marks	Pass Marks
Summative	50	17

6. **Instructor Qualification:** Degree in Engineering with one year experience
   OR
   Diploma in Engineering with two years experience
   OR
   NTC/NAC in Engineering Trade

7. **Essential Qualification:** National Craft Instructor Certificate in RoD & A course under DGT.
   OR
   National Craft Instructor Certificate in relevant trade.

LEARNING OUTCOMES WITH ASSESSMENT CRITERIA

LEARNING OUTCOME	ASSESSMENT CRITERIA
1. Demonstrate basic mathematical concept and principles to perform practical operations.	Solve different problems like phase angle, etc. with the help of a calculator.
	Demonstrate conversion of Fraction to Decimal and vice versa.
	Explain BCD code, conversion from decimal to binary and vice-versa, all other conversions.
2. Understand and explain basic science in the field of study including simple machine.	Explain concept of basic science related to the field such as Material science, Mass, weight, density, speed, velocity, heat & temperature, force, motion, pressure, heat treatment, centre of gravity, friction.
	Explain levers and its types.
	Explain relationship between Efficiency, velocity ratio and Mechanical Advantage.
	Prepare list of appropriate materials by interpreting detail drawings and determine quantities of such materials.
	Solve simple problems on lifting tackles like crane-Solution of problems with the aid of vectors.

Revised Syllabus
Workshop Calculation & Science - 1st year (Common for all Engineering trades under CTS)

Syllabus		Time in Hrs
I.	**Unit, Fractions**	**4**
• Classification of Unit System • Fundamental and Derived Units F.P.S, C.G.S, M.K.S and SI Units • Measurement Units and Conversion • Factors, HCF, LCM and Problems • Fractions – Addition, Subtraction, Multiplication and Division • Decimal Fractions - – Addition, Subtraction, Multiplication and Division • Solving Problems by using calculator		
II.	**Square Root: Ratio and Proportions, Percentage**	**6**
• Square and Square Root • Simple problems using calculator • Application of Pythagoras Theorem and related problems • Ratio and Proportions • Direct and Indirect proportion • Percentage • Changing percentage to decimal		
III.	**Material Science**	**8**
• Types of metals • Physical and Mechanical Properties of metals • Types of ferrous and non-ferrous metals • Introduction of iron and cast iron • Difference between iron and steel, alloy steel and carbon steel • Properties and uses of rubber, timber and insulating materials		
IV.	**Mass, Weight, Volume, and Density**	**4**
• Mass, volume, density, weight & specific gravity • Related problems for mass, volume, density, weight & specific gravity		
V.	**Speed and Velocity, Work Power and Energy**	**12**
• Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation • Related problems on speed and velocity • Potential energy, Kinetic Energy and related problems with related problems • Work, power, energy, HP, IHP, BHP and efficiency		

VI.	**Heat &Temperature and Pressure**	**12**
	• Concept of heat and temperature, effects of heat, difference between heat and temperature • Scales of temperature, Celsius, Farenhieght,Kelvin and Conversion between scales of temperature • Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation • Co-efficient of linear expansion and related problems with assignments • Problem of Heat loss and heat gain with assignments • Thermal conductivity and insulators • Boiling point and melting point of different metals and Nonmetals • Concept of pressure and its units in different system	
VII.	**Basic Electricity**	**12**
	• Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC and their comparison, voltage , resistance and their units • Conductor, Insulator, types of connections- Series and Parallel, • Ohm's Law, relation between VIR & related problems • Electrical power, energy and their units, calculation with assignments • Magnetic induction, self and mutual inductance and EMF generation • Electrical Power, HP, Energy and units of electrical energy	
VIII.	**Mensuration**	**10**
	• Area and perimeter of square, rectangle and parallelogram • Area an Perimeter of Triangle • Area and Perimeter of Circle, Semi-circle , circular ring, sector of circle, hexagon and ellipse • Surface area and Volume of solids- cube, cuboids, cylinder, sphere and hollow cylinder • Finding lateral surface area , total surface area and capacity in liters of hexagonal, conical and cylindrical shaped vessels	
IX.	**Levers and Simple Machines**	**6**
	• Simple machines, Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relation between efficiency, velocity ratio and mechanical advantage • Lever and its types	
X.	**Trigonometry**	**6**
	• Measurement of Angle, Trigonometrical Ratios, Trigonometric Table • Trigonometry-Application in calculating height and distance (Simple Applications)	
	Total	**80**

Workshop Calculation & Science-2nd year
(Common for all Engineering trades under CTS)

#	Title of Syllabus	Time (Hrs.)
I.	**Friction**	**10**
	• Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction • Friction – Lubrication • Co- efficient of friction, application and effects of friction in workshop practice	
II.	**Centre of Gravity**	**6**
	• Centre of gravity and its practical application	
III.	**Area of cut – out regular surfaces and area of irregular surfaces**	**14**
	• Area of cut – out regular surfaces – circle, segment and sector of circle • Related problems of area of cut – out regular surfaces – circle, segment and sector of circle • Area of irregular surfaces and application related to shop problems	
IV.	**Algebra,**	**12**
	• Addition, Subtraction, Multiplication & Divisions • Algebra – Theory of indices, Algebraic formula, related problems	
V.	**Elasticity**	**8**
	• Elastic, plastic materials, stress, strains and their units and young modulus • Ultimate stress and working stress	
VI.	**Heat Treatment**	**8**
	• Heat treatment and advantages • Different heat treatment process – Hardening, Tempering, Annealing, Normalising, Case Hardening	
VII.	**Profit and Loss**	**12**
	• Simple problems on profit & loss • Simple and compound interest	
VIII.	**Estimation and Costing**	**10**
	• Simple estimation of the requirement of material etc., as applicable to the trade • Problems on estimation and costing	
	Total	**80**

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Annex-III

Competency Based Curriculum

Of

(Engineering Drawing)

For

CRAFTSMAN TRAINING SCHEME (CTS)

Redesigned in 2019
Version 1.2

Developed by

Government of India
Ministry Skill Development and Entrepreneurship
Directorate General Training
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE
EN-81, Sector - V, Salt Lake
Kolkata – 700091

SYLLABUS

for

ENGINEERING DRAWING

CONTENTS

a. RATIONALE

Core skills enhance knowledge, analytical ability, problem solving ability, understanding or comprehending scientific principles and drawings & designs also. At the same time it creates the base for achieving hands-on skills. To carry out any skill related task knowledge about basic Engineering Drawing is essential as drawing is the language of engineers.

Knowledge of Engineering Drawing complements the skills of an Artisan / Trade person. More importantly, ability to read drawing increases the productivity of a person besides enhancing confidence to perform task competently. Recognising this importance, the core skills (Engineering Drawing) made an integral part of all Engineering Trades under DGT.

The content of Engineering Drawing is common for first year for all Engineering Trades having more than two semesters. The contents of 2nd year are made trade group specific.

b. GENERAL INFORMATION

1. **Name of the Subject** : ENGINEERING DRAWING

2. **Applicability :** FOR ALL ENGINEERING TRADES UNDER CTS

3. **DURATION :** Hours of Instruction: 80 Hrs for 1st year
80 hrs for 2nd year

4. **Examination pattern**: Summative examination held at the end of each year.

5. **Marks Distribution** :

Examination	Full marks	Pass Marks
summative	50	17

6. **Instructor Qualification**: Degree in Engineering with one year experience
OR
Diploma in Engineering with two years experience
OR
NTC / NAC in the Draughtsman (Mechanical / Civil) with three years experience.

7. **Essential Qualification**: National Craft Instructor Certificate in RoD& A course under DGT.

LEARNING OUTCOME WITH ASSESSMENT CRITERIA

ENGINEERING DRAWING	
LEARNING OUTCOME	**ASSESSMENT CRITERIA**
Read and apply engineering drawing for different application in the field of work.	Read & interpret the information on drawings and apply in executing practical work.
	Read & analyse the specification to ascertain the material requirement, tools and assembly/maintenance parameters.
	Encounter drawings with missing/unspecified key information and make own calculations to fill in missing dimension/parameters to carry out the work.

Revised Syllabus for Engineering Drawing-1st year
(Common for all Engineering trades under CTS but not applicable for Draughtsman trade Group)

Sl. No.	Topic	Time in hours
1.	Engineering Drawing – Introduction Introduction to Engineering Drawing and Drawing Instruments – • Conventions • Viewing of engineering drawing sheets. • Method of Folding of printed Drawing sheet as per BIS SP: 46-2003	1
2.	Drawing Instrument • Drawing board, T-square, Drafter (Drafting M/c), Set squares, Protector, Drawing Instrument Box (Compass, Dividers, Scale, Diagonal Scales etc.), pencils of different grades, Drawing pins/ Clips.	1
3.	Free hand drawing of – • Lines, polygons, ellipse etc. • Geometrical figures and blocks with dimension • Transferring measurement from the given object to the free hand sketches. • Solid objects – Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone with dimensions. • Free hand drawing of hand tools and measuring tools, simple fasteners (nuts, bolts, rivets etc.) trade related sketches	10
4.	Lines • Definition, types and applications in drawing as per BIS: 46-2003 • Classification of lines (Hidden, centre, construction, extension, Dimension, Section) • Drawing lines of given length (Straight, curved) • Drawing of parallel lines, perpendicular line • Methods of Division of line segment	2
5.	Drawing of Geometrical figures: Definition, nomenclature and practice of – • Angle: Measurement and its types, method of bisecting. • Triangle: different types • Rectangle, Square, Rhombus, Parallelogram. • Circle and its elements • Different polygon and their values of included angles. Inscribed and circumscribed polygons	8

6.	Lettering & Numbering – • Single Stroke, Double Stroke, Inclined.	6
7.	Dimensioning and its Practice • Definition, types and methods of dimensioning (functional, non-functional and auxiliary) • Position of dimensioning (Unidirectional, Aligned) • Types of arrowhead • Leader line with text • Symbols preceding the value of dimension and dimensional tolerance.	4
8.	Sizes and layout of drawing sheets • Selection of sizes • Title Block, its position and content • Item Reference on Drawing Sheet (Item list)	2
9.	Method of presentation of Engg. Drawing • Pictorial View • Orthographic View • Isometric View	2
10.	Symbolic representation – different symbols used in the trades • Fastener (Rivets, Bolts and Nuts) • Bars and profile sections • Weld, Brazed and soldered joints • Electrical and electronics element • Piping joints and fitting	6
11.	Projections • Concept of axes plane and quadrant • Orthographic projections • Method of first angle and third angle projections (definition and difference) • Symbol of 1st angle and 3rd angle projection in 3rd angle.	15
12.	Orthographic projection from isometric projection	15
13.	Reading of fabrication drawing	8
	Total	**80**

Revised Syllabus for Engineering Drawing-2nd year

GROUP-I (Mechanical Trade group).

Following 22 trades have been covered in mechanical trade group.

(Fitter, Turner, Machinist, Machinist Grinder, Mechanic Machine Tool Maintenance, Operator Advance Machine Tool, Mechanic Motor Vehicle, Mechanic Agriculture Machinery, Ref. & A/C Mechanic, Central Air Conditioning Plant, Mechanic Mining Machinery, TDM (D&M), TDM (J&F), Marine Fitter, Aeronautical Structure, Spinning Technician, Textile Wet Processing Technician, Weaving Technician, Textile Mechatronics, Painter General, Mechanic Maint. (Chemical Plant), Refractory Technician.)

Sl. No.	Topic	Time in Hrs
1.	Construction of scales and diagonal scales	4
2.	Conic sections (Ellipse and Parabola)	3
3.	Sketches of nuts, bolt, screw thread, different types of locking devices e.g. Double nut, Castle nut, Pin, etc.	6
4.	Sketches of foundation	08
5.	Rivets and rivetted joints, welded joints	10
6.	Sketches of pipes and pipe joints	10
7.	**Assembly view of** Vee blocks, Bush & Bearing, Different types of Coupling viz., Muff coupling, Half Lap Coupling, Flange coupling, etc. Simple work holding device e.g. vice Drawing details of two mating blocks and assembled view	25
8.	Sketch of shaft and pulley, belt, gear, gear drives	14
	Total	**80**

GROUP –II (Electrical, Electronics & IT trade group- 17 Trades).

(Electroplater, Lift & Accelerator Mechanic, Electrician, Medical Electronics, Technician Mechatronics, Wireman, Electrician Power Distribution, Instrument Mechanic, Technician Power Electronics System, Electronics Mechanic, Mechanic Consumer Electronics Appliances, Instrument Mechanic (Chemical Plant),Attendant Operator (Chemical Plant), Laboratory Attendant (Chemical Plant), ICTSM, Information Technology, Computer Hardware and Networking Maintenance)

Sl. No.	**Topic**	**Time In Hrs**
1.	Sign and Symbols of Electrical, Electronics and related trades	4
2.	Sketch of Electrical and Electronics/ trade related components	6
3.	Electrical and Electronics wiring diagram/ trade related Layout diagram	14
4.	Electrical earthing diagram - Drawing the schematic diagram of plate and pipe earthing.	8
5.	Electrical, Electronics/ trade related circuit diagram	30
6.	Block diagram of Instruments/ equipment of related trades	18
	Total	**80**

GROUP-III (Vessel Navigator - 01 Trade)

Sl. No.	Topic	Time In HRS
1.	Construction of scales and diagonal scales	4
2.	Basic Navigational Chart Work Practice Introduction of a navigational chart. Various type of navigational chart. Parallel Ruler and instruments used. Measurement of distance, sea miles, International nautical mile, geographical mile.	6
3.	Great circle, parallels of latitude and Longitudes. Important features of Mercator chart. Simple plotting of position and measurement of distance. Variation, Deviation, Conversion of compass course to true course.	6
4.	Conversion of true course to compass course. Calculation involving deviation, variation, and compass error. A few terms associated with chart work, symbols and Abbreviations	4
5.	True bearing, compass bearing, abeam bearing. Current, wind and its effects. Allowing current and leeway.	5
6.	To counter act current and wind. Find actual current experienced.	4
7.	Method of fixing the ship position by bearing and depth, bearing and distance by vertical sextant angle, horizontal angle or Radar Given: course steered engines speed direction and rate of current wind and leeway to find course and speed made good. Give: Initial position / final position to find set and rate of drift Transfer position line and simple running fix.	5
8.	ADVANCED NAVIGATIONAL CHART WORK PRACTICE Transfer of position line and running fix with current. Running fix with current and leeway.	4
9.	Transfer to position line while makes more than one course to given running fix. To find course to steer to counteract the current and leeway.	4
10.	To find course to steer and speed to steer in order to maintain the required ETA in prevailing current. Three bearing method to find course made good	4
11.	To find CMG direction by three bearing of same object from different position.[only set is given rate is not known]	6
12.	To find CMG direction by three bearing of same object from different position[both set and rate is given]	6
13.	Dipping and rising bearing of lights[dipping range or rising range]	5
14.	To find true set and drift [actual set and rate of current experienced]	4
15.	Tide problems	4
16.	To arrive with a given point right ahead at extreme range.	4
17.	Nautical publications.	5
TOTAL		80

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File No. DGT-MIS011/1/2018-O/o DIR (TC)
Government of India
Ministry of Skill Development and Entrepreneurship
Directorate General of Training

Employment Exchange Building IARI Campus,
Near Pusa ITI , New Delhi , dated 03rd Sept, 2019

Office Memorandum

Subject: Revised schedule for admission in Courses under Craftsmen Training Scheme (CTS) for session 2019-20.

The training schedule for the session 2019-20 is hereby decided by the competent authority as given below for Craftsmen Training Scheme {CTS}:-

Sl. No.	Activity	Effective Dates
1.	Start of Session 2019	1st August 2019
2.	Last date for admission in Govt ITI's	**16th September 2019**
3.	Last date for admission in Pvt ITIs	**30th September 2019**
4.	Schedule for verifying the admitted trainee data by State Directorates	Up to 30th October 2019
5.	Uploading of admitted trainee data on NCVTMIS portal	5th November to 30th November 2019
6.	Commencement of Annual Exams	**01st June, 2020**
7.	Processing of Affiliation request from ITT's	Every month, applications received up to last date of previous month
8.	Last date for receiving applications for seeking affiliation for Session 2020	**28th Feb, 2020**

However, ITI(s) should ensure the completion of the syllabus by conducting extra classes well before 31st May 2020 and also ensure minimum 80% attendance of the trainees.

(Sunil Kumar Gupta)
Director Training
☎ 9810290878, sunil.gupta67@nic.in

Copy for Kind information & necessary action to:-

1. The State Director/Commissioner dealing with Craftsmen Training Scheme
2. PS to DG/AS
3. DDG[T]/Director [TT Cell]

03/9/19.

(Ravi Chilukoti)
Jt. Director Training
☎ 9820067588, ravi.chilukoti@gov.in

C. S. Office
559193
Dt. 5/11/19

No. H-2011/2/2014-SDE(Vol-IV) pt.1
Government of India
Ministry of Skill Development & Entrepreneurship
(Economic & Policy Wing)
*****

2nd Floor, PTI Building
Sansad Marg, New Delhi
Dated: 9th October, 2019

OFFICE MEMORANDUM

Sub: Instruction to State Skill Development Missions-reg.

In pursuance of the decision taken in the 6th Meeting of the Common Norms Committee (CNC) held on 5th August 2019, it is advised that at least 3% of total trainings done by every State in each year shall be reserved for Persons with Disability (PwD).

2. This issues with the approval of Secretary, MSDE.

9/10/19
(Mamta Meena)
Deputy Director
Tel: 23465912

To

1. All Principal Secretaries/Chief Secretaries to States.
2. All Mission Directors of State Skill Development Missions.

Copy to:

1. PS to Secretary, MSDE
2. PS to SA(SS), MSDE