

Curriculum  
For  
Local Road Supervisor  
(LRS)  
Short term curriculum  
(Competency based)



Council for Technical Education and Vocational Training  
B. P. Memorial Polytechnic Institute  
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## **Introduction:**

Curriculum is a backbone of both formal and non-formal education, so it is mandatory to develop curriculum for efficiently and effectively transformation of knowledge and skills among the recipients. This curriculum has been developed by labor market analysis (LMA) as well as various discussion and meetings with possible available employers of Province -2. This curriculum is developed as a piloting form for short term training with the support of DAKCHYATA project funded by European Union and managing by British Council. The contents of this curriculum are organized in the forms of modules. It is a competency-based curriculum and it is also designated for piloting training program namely **Local Road Supervisor**. The package of practices relevant to civil construction works were covered by this curriculum so, trainees will be handfull with construction package of practices.

The main aim of this curriculum is to produce technical workforce on construction by providing training to potential Nepalese citizens candidates of Province -2. The aims of this curriculum are:

- To produce technical workforce who will be able to provide service among the community households by applying constructional package of practices.
- To produce technical workforce for entrepreneurship development
- To promote the public private partnership

## **Aim**

To produce lower level road construction workers (Local Road Supervisors) able to provide local road supervision services in the community being even an entrepreneur/employee/self-employed.

## **Objectives**

After the completion of this training program, the trainees will be able:

- To handle/maintain tools/materials/equipment
- To enforce safety rules
- To assist for field survey
- To perform simple calculations/estimations
- To read/Interpret/ prepare drawings /sketches
- To perform setting out/layout
- To supervise earth road construction
- To supervise gravel road construction
- To supervise metalled road construction
- To supervise wall construction
- To supervise cross drainage construction
- To supervise roadside drain construction
- To supervise bio-engineering works
- To perform road maintenance works
- To manage construction works
- To manage health/environment
- To communicate with others
- To maintain records
- To grow professionally
- To develop entrepreneurial skills
- To facilitate for social mobilization

## **Course description**

This curriculum provides skills & knowledge necessary for Local Road Supervisor. There will be both demonstration by instructors/trainers and opportunity by trainees to perform skills/tasks specified in this curriculum. Trainees will practice & learn skills using typical tools, materials, equipment & machines necessary for the program. After successful completion of this program the trainees will be equipped with the knowledge and skills related to handle/maintain tools/materials/equipment, enforce safety rules, assist for field survey, perform simple calculations/estimations, read/Interpret/ prepare drawings /sketches, perform setting out/layout, supervise earth road construction, supervise gravel road construction, supervise metalled road construction, supervise wall construction, supervise cross drainage construction, supervise roadside drain construction, supervise bio-engineering works, perform road maintenance works, manage construction works, manage health/environment, communicate with others, maintain records, grow professionally, develop entrepreneurial skills, and facilitate for social mobilization,

## Course structure of Local Road Supervisor

S. N.	Modules/sub modules	Nature	Time (Hours)			Marks		
			Th.	Pr.	Tot.	Th.	Pr.	Tot.
<b>1.</b>	<b>Tools, materials, equipment, and safety (15)</b>	<b>T+P</b>	<b>3</b>	<b>12</b>	<b>15</b>	<b>3</b>	<b>7</b>	<b>10</b>
	I. Tools, materials and equipment	T+P	2	8	10	2	5	7
	II. Enforcing safety rules	T+P	1	4	5	1	2	3
<b>2.</b>	<b>Basic drawing with Auto-cad (72)</b>	<b>T+P</b>	<b>12</b>	<b>60</b>	<b>72</b>	<b>15</b>	<b>35</b>	<b>50</b>
	I. Basic Engineering Drawing	T+P	5	27	32	5	15	20
	II. Auto-cad	T+P	7	33	40	7	23	30
<b>3.</b>	<b>Basic Computer (40)</b>	<b>T+P</b>	<b>10</b>	<b>30</b>	<b>40</b>	<b>10</b>	<b>20</b>	<b>30</b>
	I. Hardware component	T+P	1	2	3	1	1	2
	II. Application Software	T+P	2	12.5	14.5	2	9	11
	III. Anti-Virus	T+P	1	4	5	2	3	5
	IV. E-mail & Internet	T+P	4	13.5	17.5	2	4	6
<b>4.</b>	<b>Construction Supervision (40)</b>	<b>T+P</b>	<b>8</b>	<b>32</b>	<b>40</b>	<b>10</b>	<b>20</b>	<b>30</b>
	I. Types of wall construction	T+P	1	4	5	1.0	1.5	2.5
	II. Types of footing	T+P	1	4	5	1.0	1.5	2.5
	III. Bar binding	T+P	1	4	5	1.0	2	3
	IV. Beam & column construction	T+P	1	4	5	1.5	3	4.5
	V. Scaffolding, shuttering & Retrofitting	T+P	1	4	5	1.5	3	4.5
	VI. Mortar & grade of concrete mix	T+P	1	4	5	1.0	2	3
	VII. House wiring	T+P	1	4	5	1.5	3.5	5
	VIII. Plumbing	T+P	1	4	5	1.5	3.5	5
<b>5.</b>	<b>Field survey (60)</b>	<b>T+P</b>	<b>12</b>	<b>48</b>	<b>60</b>	<b>15</b>	<b>25</b>	<b>40</b>
<b>6.</b>	<b>Estimating &amp; Costing (50)</b>	<b>T+P</b>	<b>10</b>	<b>40</b>	<b>50</b>	<b>9</b>	<b>21</b>	<b>30</b>
	I. Calculations/estimations	T+P	6	24	30	4	9	13
	II. Drawings /sketches	T+P	2	8	10	2	5	7
	III. E-bidding	T+P	2	8	10	3	7	10
<b>7.</b>	<b>Setting out/layout</b>	<b>T+P</b>	<b>5</b>	<b>20</b>	<b>25</b>	<b>3</b>	<b>9</b>	<b>12</b>
<b>8.</b>	<b>Supervising road construction</b>	<b>T+P</b>	<b>10</b>	<b>40</b>	<b>50</b>	<b>9</b>	<b>21</b>	<b>30</b>
	I. Supervising earth road construction	T+P	3	15	18	2.5	5	7.5
	II. Supervising gravel road construction	T+P	2	10	12	2.5	5	7.5
	III. Supervising metaled road construction	T+P	5	25	30	4	11	15
<b>9.</b>	<b>Supervising wall, drainage and drain</b>	<b>T+P</b>	<b>7</b>	<b>18</b>	<b>25</b>	<b>3</b>	<b>12</b>	<b>15</b>
	I. Supervising wall construction	T+P	3	5	8	1	4	5
	II. Supervising cross drainage construction	T+P	2	6	8	1	4	5
	III. Supervising roadside drain construction	T+P	2	7	9	1	4	5
<b>10.</b>	<b>Supervising bio-engineering works</b>	<b>T+P</b>	<b>2</b>	<b>8</b>	<b>10</b>	<b>1</b>	<b>4</b>	<b>5</b>
<b>11.</b>	<b>Road maintenance works</b>	<b>T+P</b>	<b>3</b>	<b>12</b>	<b>15</b>	<b>2</b>	<b>8</b>	<b>10</b>
<b>12.</b>	<b>Construction Management</b>	<b>T+P</b>	<b>6</b>	<b>12</b>	<b>18</b>	<b>3</b>	<b>9</b>	<b>12</b>
	I. Managing construction works	T+P	1	2	3	0.5	1.5	2
	II. Managing health/environment	T+P	1	2	3	0.5	1.5	2
	III. Communicating with others	T+P	1	2	3	0.5	1.5	2
	IV. Maintaining records	T+P	1	2	3	0.5	1.5	2
	V. Growing professionally	T+P	1	2	3	0.5	1.5	2
	VI. Developing entrepreneurial skills	T+P	1	2	3	0.5	1.5	2
<b>13.</b>	<b>Basic Civil Lab</b>	<b>T+P</b>	<b>9</b>	<b>36</b>	<b>45</b>	<b>9</b>	<b>21</b>	<b>30</b>
	I. Test of material for engineering works	T+P	4	18	22	3	9	12
	II. Hydraulics Practical (Laboratory)	T+P	2	8	10	2	6	8
	III. Soil Mechanics (Practical/ Laboratory)	T+P	2	7	9	2	3	5
	IV. Water Supply (Practical/ Laboratory)	T+P	1	3	4	2	3	5
<b>14.</b>	<b>Social mobilization</b>	<b>T+P</b>	<b>3</b>	<b>7</b>	<b>12</b>	<b>3</b>	<b>8</b>	<b>12</b>
	<b>Sub-total:</b>		100	375	475	95	230	325
<b>15.</b>	<b>On the job training (OJT)</b>	<b>p</b>	-	<b>75</b>	<b>75</b>		<b>75</b>	<b>75</b>
	<b>Total:</b>		100	450	550	95	305	400

**Durations:**

The total duration of the course will be of 550 hrs. [475 hours (three months) in house plus 75 hrs. (15 Days) OJT]

**Targeted group:**

All interested individuals in the field of road construction with educational prerequisite of class eight pass.

**Group size:**

Maximum of thirty.

**Medium of Instruction:**

The medium of instruction for this training program will be Nepali & English.

**Pattern of attendance**

- 80% attendance in theory
- 90% in practical/ performance

**Focus of curriculum**

This curriculum emphasizes on competency /performance. 80% time is allocated for performance and only 20% for related technical knowledge. So the focus will be on performance of the specified competencies in the curriculum

**Entry criteria**

- Minimum of eight class pass or equivalent
- Age range: 18 to 35 years old
- Physically fit
- Should pass entrance examination

**Follow up suggestions**

In order to assess the success of this program and collect feedbacks/ inputs for the revision of the curriculum a schedule of follow up is suggested as follows:

- First follow up: - Six months after the completion of the program
- Second follow up: - Six months after the completion of the first follow up
- Follow up cycle: - In a cycle of one year after the completion of the second follow up for five Years

**Certificate**

The related training institute will provide the certificate of "Local Road Supervisor ". Again, individuals who complete module (s) of the curriculum will receive a certificate of completion of the particular module(s).

**Grading**

- Distinction: passed with 80% or above
- First division: passed with 75% or above
- Second division: passed with 65% or above
- Third division: passed with 60% or above

**Student's evaluation**

- Continuous evaluation of the trainees' performance is to be done by the related instructor/ Trainer to ensure the proficiency over each competency under each of the sub-module.
- Related technical knowledge learnt by trainees will be evaluated through written or oral tests.
- Trainees must secure minimum marks of 60% in an average of both theory and practical Evaluations.
- There will be three internal evaluations and one final evaluation in each module.
- The entrance test will be conducted by the concerned training institute

**Trainer's qualification**

- Diploma in civil engineering. or equivalent in related field
- Good communicative and instructional skills
- Experience in related field

**Trainer-trainees ratio**

- 1:10 for practical classes
- For theory, as per the class room situation

**Suggestions for instructor****Suggestions for instruction****1. Select objectives**

- Write objectives of cognitive domain
- Write objectives of psychomotor domain
- Write objectives of affective domain

**2. Select subject matter**

- Study subject matter in detail
- Select content related to cognitive domain
- Select content related to psychomotor domain
- Select content related to affective domain

**3. Select instructional methods**

- Teacher centered methods: like lecture, demonstration, questions answer inquiry, Induction and deduction methods.
- Student initiated methods like experimental, field trip/excursion, discovery, exploration, Problem solving, and survey methods.
- Interaction methods like discussion, group/team teaching, microteaching and exhibition.
- Dramatic methods like role play and dramatization

4. Select Instructional method (s) on the basis of objectives of lesson plans and KAS domains

5. Select appropriate educational materials and apply at right Time and place.

6. Evaluate the trainees applying various tools to correspond the KAS domains

7. Make plans for classroom / field work / workshop organization and management.

8. Coordinate among objectives, subject matter and instructional methods.

9. Prepare lesson plan for Theory and Practical classes.

10. Deliver /conduct instruction / program

11. Evaluate instruction/ program

**Suggestion for the performance evaluation of the trainees**

1. Perform task analysis
2. Develop a detail task performance checklist
3. Perform continuous evaluation of the trainees by applying the performance checklist.

**Suggestion for skill training**

Demonstrate performance

1. Demonstrate task performance in normal speed
2. Demonstrate slowly with verbal description of each and every step in the sequence of Activity of the task performance using question and answer techniques.
3. Repeat 2 for the clarification on trainees demand if necessary
4. Perform fast demonstration of the task.

Provide trainees the opportunities to practice the task performance demonstration

1. Provide trainees to have guided practice
2. Create environment for practicing the demonstrated task performance
3. Guide the trainees in each and every step of task performance
4. Provide trainees to repeat and repeat as per the need to be proficient on the given task Performance
5. Switch to another task demonstration if and only trainees developed proficiency in the Task performance.



### Other suggestions

1. Apply principles of skill training
2. Allocate 20% Time for Theory classes and 80% Time for task performance while delivering Instructions
3. Apply principles of adult learning
4. Apply principles of intrinsic motivation
5. Facilitate maximum trainee's involvement in learning and task performance activities
6. Instruct the trainees on the basis of their existing level of knowledge, skills and attitude.

### Tools, equipment and materials

- |                  |                       |                   |
|------------------|-----------------------|-------------------|
| • Stationary     | • Hammer (small+ big) | • Enamel + brush  |
| • Marker pen     | • Trovel (Karni)      | • Sand            |
| • Brown paper    | • Khukuri             | • Concrete        |
| • Chalk duster   | • Pick                | • Stone           |
| • Clear bag      | • Wheelbarrow         | • Square          |
| • Photocopy bag  | • Pan                 | • Jebro Textile   |
| • Measuring tape | • Jumper              | • Helmet          |
| • Abney level    | • Chisel              | • axe             |
| • Staff          | • Thread              | • Gumboot         |
| • Ranging rod    | • Calculator          | • Gloves          |
| • Plumbub        | • Graph paper         | • Goggles         |
| • Try square     | • Clutch Pencil       | • Mask            |
| • Sprit level    | • Pencil lead         | • Record note pad |
| • level pipe     | • Eraser              | • Altimeter       |
| • Shovel         | • Spadle              | • Theodolite      |
| • Cement         | • Sand screener       | • Compass         |

### Reading materials:

1. Highway Engineering – Khanne & Justo
2. Civil Engineering handbook – Khanna & Khanna
3. Surveying – B.C. Puamia
4. Bio-Engineering. DOR
5. Best Practices : Green Road Construction – GTZ
6. DOLIDAR Approaches Manual for District Transport Master Plan, Norms, Specification
7. Engineering Method – Sushil Guman
8. Construction Supervision Manual – DOLIDAR
9. Gramin Sadaka Tatha Samhar Pustika ( u |fld)f ;\*s tyf ;+ef/ k'l:tsf)– DOLIDAR
10. Technical Curriculum
11. Nepal Road Standards
12. Ley men working Guideline
13. Concrete technology
14. Social Mobilization manual
15. Batawaran Pustika ( aftfj/)f k'l:tsf )
16. Water Supply - B.C. Puamia
17. Soil Mechanics – Dr P N Modi
18. Building Construction - B.C. Puamia
19. Mechanics of Structure - S S BHAVIKATTI
20. Estimating & costing – BN Datta

**Facilities:**

- Well equipped enough class/ office rooms
- A / V room
- Transportation facilities/ Vehicle
- Laboratory / library
- OHP/computers with CD ROM attachment / pictures/
- Multimedia presentation set /Slide presenter
- Hostel/canteen /drinking water
- Electricity

**Modules and sub-modules****Module: 1: Tools, materials, equipment, and safety**

Sub-module:1: Tools, materials and equipment

Sub-module:2: Enforcing safety rules

**Module: 2: Basic Drawing with Auto-cad**

Sub-module:1: Basic Drawing

Sub-module:2: Auto-cad

**Module: 3: Basic Computer**

Sub-module:1: Hardware component

Sub-module:2: Application Software

Sub-module:3: Anti-Virus

Sub-module:4: E-mail & Internet

**Module: 4: Construction Supervision**

Sub-module:1: Types of wall construction

Sub-module:2: Types of footing

Sub-module:3: Bar binding

Sub-module:4: Beam & column construction

Sub-module:5: Scaffolding, shuttering & retrofitting

Sub-module:6: Mortar & grade of concrete mix

Sub-module:7: House wiring

Sub-module:8: Plumbing

**Module: 5: Field survey****Module: 6: Estimating & Costing**

Sub-module:1: Calculations/estimations

Sub-module:2: Drawings /sketches

Sub-module:3: E-bidding

**Module: 7: Setting out/layout****Module: 8: Supervising road Construction**

Sub-module:1: Supervising earth road construction

Sub-module:2: Supervising gravel road construction

Sub-module:3: Supervising metaled road construction

**Module: 9: Supervising wall, drainage and drain**

Sub-module:1: Supervising wall construction

Sub-module:2: Supervising cross drainage construction

Sub-module:3: Supervising roadside drain construction

**Module: 10: Supervising bio-engineering works**

**Module: 11: Road maintenance works**

**Module: 12: Construction Management**

Sub-module:1: Managing construction works

Sub-module:2: Managing health/environment

Sub-module:3: Communicating with others

Sub-module:4: Maintaining records

Sub-module:5: Growing professionally

Sub-module:6: Developing entrepreneurial skills

**Module: 13: Basic Civil Lab**

Sub-module:1: Test of material for engineering works

Sub-module:2: Hydraulics Practical (Laboratory)

Sub-module:3: Soil Mechanics (Practical/ Laboratory)

Sub-module:4: Water Supply (Practical/ Laboratory)

**Module: 14: Social mobilization**

## **Modules, sub-modules, objectives and tasks**

### **Module: 1: Tools, materials, equipment, and safety**

#### **Sub-module:1: Tools, materials and equipment**

**Objective: Handle/maintain tools/materials/equipment**

**Tasks:**

1. Handle measuring tape
2. Handle pedometer
3. Handle altimeter
4. Level pipe/sprit level
5. Handle surveyor compass
6. Handle Abney level
7. Handle auto level
8. Handle calculator
9. Operate computer
10. Apply global positioning system
11. Handle wheel barrow

#### **Sub-module:2: Enforcing safety rules**

**Objective: Enforce Safety Rules**

**Tasks:**

12. Maintain first aid kit box
13. Perform simple/common first aids
14. Enforce safety wares
15. Maintain accidental records
16. Orient/inform about possible risks/hazards
17. Enforce to follow traffic signals
18. Apply fire safety measures

### **Module: 2: Basic Drawing with Auto-cad**

#### **Sub-module:1: Basic Drawing**

**Objective: To handle drawing tools, drawing scale, geometric figures & engineering structures**

**Tasks:**

19. Handle drawing tools
20. Handle drawing scale
21. Construct geometric figures
22. Draw engineering structures

#### **Sub-module:2: Auto-Cad**

**Objective: To handle commands and tools of auto-cad, dimensioning tools, geometric figures, Engineering structures**

**Tasks:**

23. Handle commands and tools of auto-cad
24. Handle dimensioning tools
25. Construct geometric figures
26. Draw engineering structures

### **Module: 3: Basic Computer**

#### **Sub-module:1: Hardware component**

**Objective: Identification of measure component of computer & familiarization with input out put device**

**Tasks:**

- 27. Draw computer block diagram
- 28. Draw hard disk block diagram
- 29. Draw motherboard block diagram
- 30. Draw RAM block diagram
- 31. Clean RAM

#### **Sub-module:2: Application Software**

**Objective: To know about Microsoft Word, Microsoft PowerPoint & Microsoft Excel**

**Tasks:**

- 32. Editing text in Microsoft word
- 33. Formatting document in Microsoft word
- 34. Creating table in Microsoft word
- 35. Prepare slide in Microsoft PowerPoint
- 36. Editing worksheet in Microsoft Excel
- 37. Prepare charts in Microsoft Excel
- 38. Import/Export data in Microsoft Excel

#### **Sub-module:3: Anti-Virus**

**Objective: • To know about anti-Virus & its intalation**

**Tasks:**

- 39. Install anti-virus
- 40. Scan PC

#### **Sub-module:4:E-mail & Internet**

**Objective: • To know about E-mail & internet & Its Functions & social media**

**Tasks:**

- 41. Create email account
- 42. Create Facebook account
- 43. Create Zoom account
- 44. Change password

### **Module: 4: Construction Supervision**

#### **Sub-module:1: Types of wall construction**

**Objective: to know about types & construction method of wall**

**Tasks:**

- 49. Construct & supervise different type of wall.

#### **Sub-module:2: Types of footing**

**Objective: to know about types & construction method of footing**

**Tasks:**

- 50. Construct footing of wall & column.

#### **Sub-module:3: Bar binding**

**Objective: to know about measurement of bars, methods of bending bars, lying of bars**

**Tasks:**

- 51. Bind bars required in the construction according to the design.
- 52. know about measurement of bars.

53· know about methods of bending bars.

54· know about lying of bars.

#### **Sub-module:4: Beam & column construction**

**Objective: to know about design of beam & column, reinforcement design in beam & column, the construction methods of beam & column**

##### **Tasks:**

55· know about design of beam & column.

56· know about reinforcement design in beam & column.

57· know about the construction methods of beam & column.

#### **Sub-module:5: Scaffolding, shuttering & retrofitting**

**Objective: to know about Scaffolding, shuttering & Retrofitting, construction methods of Scaffolding, shuttering & Retrofitting, the supports & joints of Scaffolding & Shuttering & Retrofitting**

##### **Tasks:**

58· know about Scaffolding, shuttering & Retrofitting.

59· know about construction methods of Scaffolding, shuttering & Retrofitting.

60· know about the supports & joints of Scaffolding, shuttering & Retrofitting.

#### **Sub-module:6: Ratio of Mortar & grade of concrete mix**

**Objective: to know about ratio & types of mortar, grade of concrete mix & the process of Mixing**

##### **Tasks:**

61· know about ratio & types of mortar.

62· know about grade of concrete mix.

63· Able to know about the process of mixing.

#### **Sub-module:7: House wiring**

**Objective: to know about types of appliances & tools used in house wiring, the position of Fittings the process of connecting**

##### **Tasks:**

64· Able to know about types of appliances & tools used in house wiring.

65· Able to know about the position of fittings.

66· Able to know about the process of connecting.

#### **Sub-module:8: Plumbing**

**Objective: to know about types of appliances & tools used in plumbing work, the position of Fittings, the measuring & process of cutting & the process of connecting**

##### **Tasks:**

67· Able to know about types of appliances & tools used in plumbing work.

68· Able to know about the position of fittings.

69· Able to know about the measuring & process of cutting.

70· Able to know about the process of connecting.

#### **Module: 5: Field survey**

**Objective: Assist for Field Survey**

##### **Tasks:**

71. Assist to fix Road Alignment
72. Assist to fix Road Centre line
73. Measure tentative Road Length
74. Assist to Conduct L-section Survey
75. Assist to conduct cross-section Survey
76. Assist to fix Reference Points
77. Fix Bench mark
78. Assist to investigate obligatory points
79. Assist to conduct Traverse Survey
80. Conduct Labor Availability Survey
81. Conduct Local Construction Materials Survey
82. Assist to conduct Household Survey
83. Assist to perform cadastral Survey
84. Perform Traffic/vehicle count
85. Count trees/cross-drainage hard rock

### **Module: 6: Estimating and Costing**

#### **Sub-module:1: Calculations/estimations**

##### **Objective: Perform Simple Calculations/Estimations**

##### **Tasks:**

86. Calculate area of various geometrical figures
87. Calculate volume of various geometrical figures
88. Use government norms/rates
89. Read/interpret specifications
90. Estimate/cost materials
91. Estimate/cost equipment/tools
92. Estimate human resources

#### **Sub-module:2: Drawings /sketches**

##### **Objective: Read/Interpret/ prepare drawings /sketches**

##### **Tasks:**

93. Prepare drawing/sketch of Rectangular section
94. Prepare sketch/drawing of Trapezoidal section
95. Read/Interpret plan of road alignment
96. Read/Interpret section of road alignment
97. Read/Interpret deviation of geometrical figures
98. Prepare sketch/drawings of triangular section
99. Prepare sketches/drawings of circular section

#### **Sub-module:3: E-bidding**

##### **Objective: Able for e-bidding**

##### **Tasks**

98. Able for e-bidding

### **Module: 7: Setting out/layout**

#### **Objective: Perform setting out/Layout**

##### **Tasks:**

99. Prepare check list
100. Collect/Identify tools/equipment/materials

101. Perform Measurements
102. Apply 3-4-5 method of layout
103. Perform setting out of centerline (road alignment)
104. Perform setting out of formation width
105. Perform setting out of retaining/breast walls
106. Perform setting out of cross drainage structures
107. Perform setting out of bio engineering works
108. Locate road centerline

## **Module: 8: Supervising road construction**

### **Sub-module:1: Supervising earth road construction**

#### **Objective: Supervise Earth Road Construction**

##### **Tasks:**

109. Perform site clearance
110. Supervise top soil removal work
111. Perform benching 60. Maintain borrow pit
112. Maintain fill/cut slopes
113. Manage safe disposal of surplus materials
114. Maintain Formation width
115. Maintain camber/upper elevation (S.E.)
116. Maintain longitudinal slope/grade
117. Maintain vertical curves
118. Maintain horizontal curves
119. Maintain compaction density

### **Sub-module:2: Supervising gravel road construction**

#### **Objective: Supervise Gravel Road Construction**

##### **Tasks:**

120. Control Traffic
121. Maintain gravel sizing
122. Maintain compaction
123. Maintain thickness
124. Maintain edging

### **Sub-module:3: Supervising metalled road construction**

#### **Objective: Supervise Metalled Road Construction**

##### **Tasks:**

125. Maintain penetration macadam work.
126. Maintain ottaseal
127. Maintain asphalt concrete work
128. Maintain single surface treatment work
129. Maintain double surface treatment work
130. Maintain concrete pavement
131. Maintain stone soling pavement

## **Module: 9: Supervising wall, drainage and drain**

### **Sub-module:1: Supervising wall construction**

#### **Objective: Supervise wall Construction**



**Tasks:**

132. Layout walls
133. Maintain foundation excavation
134. Maintain soling work
135. Maintain foundation PCC/RCC work
136. Maintain Construction joints
137. Maintain weep hole
138. Maintain filter materials
139. Maintain wall dimension
140. Maintain retaining walls
141. Maintain breast wall
142. Maintain toe wall
143. Maintain revetment wall
144. Maintain dry/masonry/composite walls
145. Maintain gabion wall/construction
146. Maintain gabion crate/box weaving

**Sub-module:2: Supervising cross drainage construction**

**Objective: Supervise Cross Drainage Construction**

**Tasks:**

147. Assist for layout
148. Maintain foundation excavation
149. Manage dewatering dimension
150. Maintain line/level of formwork
151. Inspect staging & Maintain line level of sub-structure
152. Maintain line level of super-structure
153. Maintain line/level of formwork
154. Maintain protection works

**Sub-module:3: Supervising roadside drain construction**

**Objective: Supervise Roadside Drain Construction**

**Tasks:**

155. Layout for roadside drain
156. Assure/monitor quality of concrete work
157. Maintain dimension of masonry work
158. Maintain dimensions/slopes
159. Supervise plastering
160. Supervise curving
161. Maintain surface/sub-surface drainage

**Module: 10: Supervising bio-engineering works**

**Objective: Supervise Bio-engineering Works**

**Tasks:**

162. Supervise preparation of live stakes grass slips
163. Perform layout
164. Supervise plantation work
165. Supervise caring of plants

166. Protect plants

**Module: 11: Road maintenance works**

**Objective: Perform Road Maintenance Works**

**Tasks:**

- 167. Supervise routine maintenance
- 168. Supervise recurrent maintenance
- 169. Supervise periodic maintenance
- 170. Supervise emergency maintenance
- 171. Supervise rehabilitation maintenance

**Module: 12: Construction Management**

**Sub-module:1: Managing construction works**

**Objective: Manage Construction Works**

**Tasks:**

- 172. Prepare/follow schedule
- 173. Manage labor force/road building groups
- 174. Manage materials
- 175. Manage machine
- 176. Manage money
- 177. Manage minute/document

**Sub-module:2: Managing health/environment**

**Objective: Manage Health/Environment**

**Tasks:**

- 178. Maintain waste disposal system
- 179. Manage safe/healthy drinking water
- 180. Be familiar with communicable diseases
- 181. Create safe working environment
- 182. Be familiar with the management of HIV/STD
- 183. Minimize noise/dust pollution
- 184. Enforce to manage quarry site
- 185. Facilitate to dispose unwanted oil

**Sub-module:3: Communicating with others**

**Objective: Communicate with others**

**Tasks:**

- 186. Make telephone calls
- 187. Receive telephone calls
- 188. Write letters
- 189. Write simple reports
- 190. Communicate with seniors
- 191. Communicate with juniors/labors
- 192. Communicate with peers
- 193. Communicate with contractors
- 194. Communicate with users' committee
- 195. Communicate with user's group

#### **Sub-module:4: Maintaining records**

##### **Objective: Maintain Records**

##### **Tasks:**

196. Keep records of attendance
197. Maintain muster roll
198. Keep records of tools/equipment/materials used
199. Maintain log book
200. Maintain simple A/C books
201. Identify/facilitate to apply various formats of records
202. Apply fire safety measures
203. Maintain daily diary
204. Keep records of work progress
205. Prepare work progress records
206. Submit records/reports to the concerned

#### **Sub-module:5: Growing professionally**

##### **Objective: Grow Professionally**

##### **Tasks:**

207. Attend meetings/seminars/workshops
208. Consult experts
209. Consult professional books/manuals
210. Participate in professional organizations
211. Follow professional rules/regulations/ethics
212. Consult professional journals/magazine
213. Discuss with peers
214. Attend professional trainings
215. Seek/attend for higher education
216. Browse www

#### **Sub-module:6: Developing entrepreneurial skills**

##### **Objective: Develop Entrepreneurial Skills**

##### **Tasks:**

217. Develop small business planning skills
218. Develop small business organizing skills
219. Develop small business direction skills
220. Develop small business controlling skills
221. Prepare a small business plan
222. Prepare a budget for a small business

#### **Module: 13: Basic Civil Lab**

##### **Sub-module:1: Test of material for engineering works**

##### **Objective: To know about the Quality, Durability, Life-span and strength of the materials used in construction works**

##### **Tasks:**

223. To know about the Quality, Durability, Life-span and strength of the materials used in construction works

**Sub-module:2: Hydraulics Practical (Laboratory)**

**Objective: To know about the Quality, and properties of Hydraulics**

**Tasks:**

224. To know about the Quality, and properties of Hydraulics

**Sub-module:3: Soil Mechanics (Practical/ Laboratory)**

**Objective: Soil Mechanics (Practical/ Laboratory)**

**Tasks:**

225. To know about the Quality, and properties of soil for construction works

**Sub-module:4: Soil Mechanics (Practical/ Laboratory)**

**Objective: Soil Mechanics (Practical/ Laboratory)**

**Tasks:**

226. To know about the Quality, and properties of water

**Module: 14: Social mobilization**

**Objective: Facilitate for Social Mobilization**

**Tasks:**

227. Facilitate to form users committee

228. Prepare participation schedule

229. Facilitate to form users' group

230. Facilitate to minute decisions

231. Facilitate users' committee meetings

232. Motivate users for participation

233. Facilitate to carry out public audit

234. Facilitate to minimize conflict

## Details of modules and sub-modules

<b>Modules 1: Tools, materials, equipment, and safety</b>					
<b>Description:</b> It deals with the knowledge and skills related to the handling of the tools, materials and Equipment; and enforcing safety rules necessary for supervising local roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>· To handle tools, materials and equipment</li> <li>· To enforce safety rules</li> </ul>					
<b>Sub-modules:</b>					
<ol style="list-style-type: none"> <li>1. Tools, materials and equipment</li> <li>2. Enforcing safety rules</li> </ol>					
<b>Sub-module:1: Tools, materials and equipment</b>					
<b>Description:</b> It deals with the knowledge and skills related to the handling of the tools, materials and Equipment Necessary for supervising local roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>· To handle measuring tape</li> <li>· To handle pedometer</li> <li>· To handle altimeter</li> <li>· To handle pipe/sprit level</li> <li>· To handle surveyor compass</li> <li>· To handle Abney level</li> <li>· To handle auto level</li> <li>· To handle calculator</li> <li>· To operate computer</li> <li>· To apply global positioning system</li> <li>· To handle wheel barrow</li> </ul>					
Tasks: Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
<b>10 hrs. = 2 hrs ,(Th,) + 8 hrs,(Pr,)</b>			<b>Time (hours)</b>		
S. N.	Task statements	Related technical knowledge	Th.	Pr.	Total
1.	<b>Handle measuring tape</b>	<u><b>Handling measuring tape:</b></u> <ul style="list-style-type: none"> <li>• Identification of measuring tape</li> <li>• Functions of measuring tape</li> <li>• Uses/applications of measuring tape</li> <li>• Handling of measuring tape</li> <li>• Care/maintenance of measuring tape</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.4	0.5
2.	<b>Handle pedometer</b>	<u><b>Handling pedometer:</b></u> <ul style="list-style-type: none"> <li>• Identification of pedometer</li> <li>• Functions of pedometer</li> <li>• Uses/applications of pedometer</li> <li>• Initial setting or zero setting</li> <li>• Handling of pedometer</li> <li>• Care of pedometer</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
3.	<b>Handle altimeter</b>	<u><b>Handling altimeter:</b></u> <ul style="list-style-type: none"> <li>• Identification of altimeter</li> <li>• Functions of altimeter</li> <li>• Uses/applications of altimeter</li> </ul>	0.2	0.8	1.0

		<ul style="list-style-type: none"> <li>• Initial setting</li> <li>• Handling of altimeter</li> <li>• Care/maintenance of altimeter</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
4.	<b>Handle pipe/sprit level</b>	<p><b><u>Handling pipe/sprit level:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of pipe/sprit level</li> <li>• Functions of pipe/sprit level</li> <li>• Uses/applications of pipe/sprit level</li> <li>• Handling of pipe/sprit level</li> <li>• Care/maintenance of pipe/sprit level</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
5.	<b>Handle surveyor compass</b>	<p><b><u>Handling surveyor compass:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of surveyor compass</li> <li>• Functions of surveyor compass</li> <li>• Types of surveyor compass</li> <li>• Uses surveyor compass</li> <li>• Handling of surveyor compass</li> <li>• Care/maintenance of surveyor compass</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
6.		<p><b><u>Handling Abney level:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of Abney level</li> <li>• Functions of Abney level</li> <li>• Uses/applications of Abney level</li> <li>• Handling/setting of Abney level</li> <li>• Care/maintenance of Abney level</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
7.	<b>Handle auto level</b>	<p><b><u>Handling auto level :</u></b></p> <ul style="list-style-type: none"> <li>• Identification of auto level</li> <li>• Functions of auto level</li> <li>• Uses/applications of auto level</li> <li>• Handling of auto level</li> <li>• Care/maintenance of auto level</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
8.	<b>Handle calculator</b>	<p><b><u>Handling calculator:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of calculator</li> <li>• Functions of calculator</li> <li>• Uses/applications of calculator</li> <li>• Handling of calculator</li> <li>• Care/maintenance of calculator</li> </ul>	0.1	0.4	0.5

		<ul style="list-style-type: none"> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
9.	<b>Operate computer</b>	<u><b>Operating computer:</b></u> <ul style="list-style-type: none"> <li>• Identification of computer</li> <li>• Functions of computer</li> <li>• Uses/applications of computer</li> <li>• Handling of</li> <li>• Operating computer</li> <li>• Care/maintenance of computer</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.2	1.5
10.	<b>Apply global positioning system</b>	<u><b>Applying global positioning system:</b></u> <ul style="list-style-type: none"> <li>• Concept of global positioning system</li> <li>• Functions of global positioning system</li> <li>• Uses/applications of global positioning system</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
11.	<b>Handle wheel barrow</b>	<u><b>Handling wheel barrow:</b></u> <ul style="list-style-type: none"> <li>• Identification of wheel barrow</li> <li>• Functions of wheel barrow</li> <li>• Uses/applications of wheel barrow</li> <li>• Handling of wheel barrow</li> <li>• Care/maintenance of wheel barrow</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.4	0.5
<b>Sub-total:</b>			<b>2.0</b>	<b>8.0</b>	<b>10</b>
<b>Sub-module:2: Enforcing safety rules</b>					
<b>Description: It deals with the knowledge and skills related to enforcing safety rules necessary for supervising local roads.</b>					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To maintain first aid kit box</li> <li>• To perform simple/common first aids</li> <li>• To enforce safety wares/personal protective equipment(PPE)</li> <li>• To maintain accidental records</li> <li>• To orient/inform about possible risks/hazards</li> <li>• To enforce to follow traffic signs</li> <li>• To apply fire safety measures</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>5 hrs. = 1 hrs,(Th,) + 4 hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1.	<b>Maintain first aid kit box</b>	<u><b>Maintaining first aid kit box:</b></u> <ul style="list-style-type: none"> <li>• Concept of first aid kit box</li> </ul>	0.1	0.4	0.5

		<ul style="list-style-type: none"> <li>• Identification of first aid kit box</li> <li>• Functions of first aid kit box</li> <li>• Uses/applications of first aid kit box</li> <li>• Maintaining first aid kit box</li> <li>• Care/maintenance of first aid kit box</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
2.	<b>Perform simple/common first aids</b>	<p><b><u>Performing simple/common first aids:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of simple/common first aid</li> <li>• Need and importance of simple/common first aids</li> <li>• Principles and procedures for simple/common first aids</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.4	0.5
3.	<b>Enforce safety wares/personal protective equipment</b>	<p><b><u>Enforcing safety wares:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and functions of safety wares</li> <li>• Need and importance of safety wares</li> <li>• Identification of safety wares</li> <li>• Enforcing safety wares</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.4	0.5
4.	<b>Maintain accidental records</b>	<p><b><u>Maintaining accidental records:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and uses of accidental records</li> <li>• Why, when, and how of maintaining accidental records</li> <li>• Format for accidental records</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Reporting to concerned officials</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
5.	<b>Orient/inform about possible risks/hazards</b>	<p><b><u>Orienting/informing about possible risks/hazards:</u></b></p> <ul style="list-style-type: none"> <li>• Concepts and definitions of risks and hazards</li> <li>• Identification and analysis of possible risks/hazards</li> <li>• Why, when, and how of orienting/informing about possible risks/hazards</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Reporting to concerned officials</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.4	0.5
6.	<b>Enforce to follow traffic signs</b>	<p><b><u>Enforcing to follow traffic signs:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of traffic signs</li> <li>• Types of traffic signs</li> <li>• Identification of traffic signs</li> <li>• Interpretation of traffic signs</li> <li>• Why, when, and how of enforcing to follow traffic signs</li> </ul>	0.2	0.8	1.0



		<ul style="list-style-type: none"> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
7.	<b>Apply fire safety measures</b>	<b>Applying fire safety measures:</b> <ul style="list-style-type: none"> <li>• Concept of fire safety measures</li> <li>• Identification of fire safety measures</li> <li>• Why, when, and how of applying fire safety measures</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
	<b>Sub-total:</b>		<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Modules 2: Basic drawing with Auto-cad</b>					
	<b>Description:</b> It deals with the knowledge and skills related to the Drawing of Geometric figures and Engineering structures and also deals with the knowledge of commands and tools used in Auto- cad in order to draw any engineering figure and structures.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To handle drawing tools</li> <li>· To draw and read engineering drawing</li> <li>· To handle drawing tools and command in Auto-cad</li> </ul>				
	<b>Sub-modules:</b> <ol style="list-style-type: none"> <li>1. Basic Engineering Drawing</li> <li>2. Auto-cad</li> </ol>				
<b>Sub-module:1: Basic Engineering Drawing</b>					
	<b>Description:</b> It deals with the knowledge and skills related to the Drawing of Geometric figures and Engineering structures				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To handle drawing tools</li> <li>· To handle drawing scale</li> <li>· To construct geometric figures</li> <li>· To draw engineering structures</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>32 hrs. = 5 hrs,(Th,) + 27 hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	handle drawing tools	<ul style="list-style-type: none"> <li>• Use and Know the work of drawing tools</li> <li>• Uses of different types of tools used in drawing</li> </ul>	1.0	4.0	5.0
2	handle drawing scale	<ul style="list-style-type: none"> <li>• Same scale</li> <li>• Reducing scale</li> <li>• Enlarging scale</li> </ul>	1.0	5.0	6.0
3	Construct geometric figures	<ul style="list-style-type: none"> <li>• axis of drawing</li> <li>• Process of drawing</li> <li>•Line width</li> <li>•Views</li> </ul>	1.0	9.0	10.0
4	Draw engineering structures	<ul style="list-style-type: none"> <li>• drawing the views of different geometric solids and engineering structures</li> </ul>	2.0	9.0	11.0
	<b>Sub-total:</b>		<b>5.0</b>	<b>27.0</b>	<b>32.0</b>
<b>Sub-module:2: Auto-cad</b>					
	<b>Description:</b> It deals with the knowledge and skills related to the knowledge of commands and tools used in Auto- cad in order to draw any engineering figure and structures.				

	<b>Objectives:</b> · To handle commands and tools of auto-cad · To handle dimensioning tools · To understand geometric figures · To draw engineering structures				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>40 hrs. = 7 hrs,(Th,) + 33 hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1.	Handle commands and tools of auto-cad	<ul style="list-style-type: none"> <li>• Concept and uses of commands and tools of auto-cad</li> </ul>	1.0	6.0	7.0
2.	Handle dimensioning tools	<ul style="list-style-type: none"> <li>• Process of starting auto-cad</li> <li>• Page set-up</li> <li>• Unit set up</li> <li>• Dimension style</li> </ul>	1.0	7.0	8.0
3.	Construct geometric figures	<ul style="list-style-type: none"> <li>• Co-ordinate input methods (directive, absolute, relative and polar)</li> <li>• Point, Lines, Polyline, Multiline ,Construction Lines</li> <li>• Circle, Arc, Ellipse and Square</li> <li>• Polygon, Rectangle, Spline, , solids etc</li> <li>• Hatching</li> <li>• Text (multi-line &amp; single line / true type fonts)</li> <li>• Dimensions</li> </ul>	2.0	9.0	11.0
4.	Draw engineering structures	<ul style="list-style-type: none"> <li>• Object selection</li> <li>• Erase, Trim, Break</li> <li>• Copy, Mirror, Offset, Array</li> <li>• Move, Rotate, Scale, Stretch</li> <li>• Lengthen, Extend</li> <li>• Chamfer, Fillet, etc</li> </ul>	3.0	11.0	14.0
	<b>Sub-total:</b>		<b>7.0</b>	<b>33.0</b>	<b>40</b>
<b>Modules 3: Basic Computer (Introduction to Computer)</b>					
	<b>Description:</b> It deals with the knowledge and skills related to the Basic Computer works.				
	<b>Objectives:</b> · able to the use the computer for basic purposes of preparing his personnel/business letters, viewing Information on Internet (the web), sending mails, using internet banking services etc. · Able to be a part of computer users list and digitally self-literate.				
	<b>Sub-modules:</b> 1. Hardware component 2. Application Software 3. Anti-Virus 4. E-mail & Internet				
	<b>Sub-module:1: Hardware component</b>				
	<b>Description:</b> It deals with the knowledge and skills related to the Introduction, Input /Output & Processing (CPU), Memory Device, hard disk, mother board				
	<b>Objectives:</b> · To know & Draw computer block diagram				

	<ul style="list-style-type: none"> <li>· To know &amp; Draw hard disk block diagram</li> <li>· To know &amp; Draw motherboard block diagram</li> <li>· To know &amp; Draw RAM block diagram</li> <li>· To know about Clean RAM</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>3 hrs. = 3 hrs,(Th,) + 0 hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Draw computer block diagram	<ul style="list-style-type: none"> <li>• Input/output &amp; memory</li> <li>• Introduction, work, device, types etc</li> </ul>	0.2	0.3	0.5
2	Draw hard disk block diagram	<ul style="list-style-type: none"> <li>• Parts of hard disk</li> <li>• Identification &amp; process of drawing</li> </ul>	0.2	0.5	0.8
3	Draw motherboard block diagram	<ul style="list-style-type: none"> <li>• Parts of mother board</li> <li>• Identification &amp; process of drawing</li> </ul>	0.2	0.2	0.4
4	Draw RAM block diagram	<ul style="list-style-type: none"> <li>• RAM &amp; Sectional view of RAM &amp; size, types etc</li> <li>• Identification &amp; process of drawing</li> </ul>	0.2	0.5	0.7
5	Clean RAM	<ul style="list-style-type: none"> <li>•Speed</li> <li>•Accuracy</li> <li>•Diligence</li> <li>•Versatility</li> <li>•Reliability</li> <li>•Automation</li> <li>•Memory</li> </ul>	0.2	0.5	0.7
<b>Sub-total:</b>			<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
<b>Sub-module:2: Application Software</b>					
<b>Description:</b> It deals with the knowledge and skills related to the Application of Software					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>· To know about Microsoft Word</li> <li>· To know about Microsoft PowerPoint</li> <li>· To know about Microsoft Excel</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>14.5 hrs. = 2hrs,(Th,) + 12.5 hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Editing text in Microsoft word	<ul style="list-style-type: none"> <li>• Selection</li> <li>• Bulleting</li> <li>• Saving files</li> <li>• Saving files.</li> <li>• Knowledge on setting the page.</li> <li>• Using margins/gutter.</li> <li>• Selecting paper size &amp; paper orientation.</li> <li>• Selecting paper layout.</li> <li>• Using send to command from file menu.</li> <li>• Copy, cut and Paste in different locations including other commands like undo, redo, delete</li> <li>• Using edit menu and other commands.</li> </ul>	0.2	1.0	1.2

2	Formatting document in Microsoft word	<ul style="list-style-type: none"> <li>• Using bullets</li> <li>• Increasing/ decreasing the space between the lines and bullets.</li> <li>• Inserting a new line without bullet.</li> <li>• Inserting sub-level bullets.</li> <li>• Switching to outline view to create a presentation.</li> <li>• Making new slide.</li> <li>• Entering more slide titles.</li> </ul>	0.3	2.0	2.3
3	Creating table in Microsoft word	<ul style="list-style-type: none"> <li>• Define table, row, column and cell.</li> <li>• Table tag and attributes.</li> <li>• Table caption and header</li> <li>• Row span, col span</li> </ul>	0.3	2.0	2.3
4	Prepare slide in Microsoft PowerPoint	<ul style="list-style-type: none"> <li>• Define PowerPoint</li> <li>Clip art, graphs, table, slide layout, slide show &amp; animation. etc</li> </ul>	0.3	2.0	2.3
5	Editing worksheet in Microsoft Excel	<ul style="list-style-type: none"> <li>• Define table, row, column and cell.</li> <li>• Table tag and attributes.</li> <li>• Table caption and header</li> <li>• Row span, col span, formulae</li> </ul>	0.3	2.0	2.3
6	Prepare charts in Microsoft Excel	<ul style="list-style-type: none"> <li>• Define table, row, column and cell.</li> <li>• Table tag and attributes.</li> <li>• Table caption and header</li> <li>• Row span, col span, formulae</li> </ul>	0.3	2.0	2.3
7	Import/Export data in Microsoft Excel	<ul style="list-style-type: none"> <li>• Define table, row, column and cell.</li> <li>• Table tag and attributes.</li> <li>• Table caption and header</li> <li>• Row span, col span, formulae</li> </ul>	0.3	1.5	1.8
<b>Sub-total:</b>			<b>2.0</b>	<b>12.5</b>	<b>14.5</b>
<b>Sub-module:3: Anti-Virus</b>					
<b>Description:</b> It deals with the knowledge and skills related to the Virus					
<b>Objectives:</b> · To know about Virus					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>5 hrs. = 1hrs,(Th,) + 4hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Install anti-virus	<ul style="list-style-type: none"> <li>• Concept of Virus, Malware, Worms, Trojan, Spyware, Adware</li> <li>• Activation of Antivirus Software.</li> </ul>	0.5	2.0	2.5
2	Scan PC	<ul style="list-style-type: none"> <li>• Concept of Virus, Malware, Worms, Trojan, Spyware, Adware</li> </ul>	0.5	2.0	2.5
<b>Sub-total:</b>			<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Sub-module:4: E-mail &amp; Internet</b>					
<b>Description:</b> It deals with the knowledge and skills related to the E-mail & Internet					
<b>Objectives:</b> · To know about Introduction · To know about E-mail Account & Its Functions · To know about Search Engine · To know about Surfing Webpages · To know about Basics of Social Networking Site					

		<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.			
		<b>7.5 hrs. = 1.5hrs,(Th,) + 6 hrs,(Pr,)</b>		<b>Time (hours)</b>	
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Create email account	<ul style="list-style-type: none"> <li>• Introduction to Social media</li> <li>• Privacy</li> <li>• Security</li> <li>• Password</li> </ul>	1.0	2.5	3.5
2	Create Facebook account	<ul style="list-style-type: none"> <li>• Introduction to Social media</li> <li>• Privacy</li> <li>• Security</li> <li>• Password</li> </ul>	1.0	3.0	4.0
3	Create Zoom account	<ul style="list-style-type: none"> <li>• Introduction to Social media</li> <li>• Privacy</li> <li>• Security</li> <li>• Password</li> </ul>	1.0	4.0	5.0
4	Change password	<ul style="list-style-type: none"> <li>• Introduction to Social media</li> <li>• Privacy</li> <li>• Security</li> <li>• Password</li> </ul>	1.0	4.0	5.0
<b>Sub-total:</b>			<b>4.0</b>	<b>13.5</b>	<b>17.5</b>
<b>Modules 4: Construction Supervision</b>					
<b>Description:</b> It deals with the knowledge and skills related to the wall, footing, bar-binding, Beam & column, electrical, plumbing, scaffolding, shuttering, & retrofitting, ratio of mortar & Grade of Concrete.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>. Able to construct &amp; supervise different type of wall.</li> <li>. Able to construct footing of wall &amp; column.</li> <li>. Able to bind bars required in the construction according to the design.</li> <li>. Able to construct beam &amp; column.</li> <li>. Able to supervise &amp; make the connection of electric appliances.</li> <li>. Able to supervise &amp; make the connection of plumbing.</li> <li>. Able to supervise &amp; construct the scaffolding, shuttering, &amp; retrofitting.</li> <li>. Able to supervise &amp; make the concrete mix &amp; mortar according to design mix.</li> </ul>					
<b>Sub-modules:</b>					
<ol style="list-style-type: none"> <li>1.Types of wall construction</li> <li>2.Types of footing</li> <li>3.Bar binding</li> <li>4.Beam &amp; column construction</li> <li>5.Scaffolding, shuttering &amp; Retrofitting</li> <li>6.Mortar &amp; grade of concrete mix</li> <li>7.House wiring</li> <li>8.Plumbing</li> </ol>					
<b>Sub-module:1: Types of wall construction</b>					
<b>Description:</b> It deals with the knowledge and skills related to the construction works					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>. To know about types &amp; construction method of wall</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it					
		<b>5 hrs. = 1hrs,(Th,) + 4 hrs,(Pr,)</b>		<b>Time (hours)</b>	
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>

1	Construct & supervise different type of wall	• Concept and process of different types of wall construction	1.0	4.0	5.0
	<b>Sub-total:</b>		<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Sub-module:2: Types of Footing</b>					
<b>Description:</b> It deals with the knowledge and skills related to the footing of wall & column					
<b>Objectives:</b> · To know about types & construction methods of Footing					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
			<b>5 hrs. = 1hrs,(Th,) + 4 hrs,(Pr,)</b>		
			<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Construct footing of wall & column	• Concept and process of different types of wall & column footings construction	1.0	4.0	5.0
	<b>Sub-total:</b>		<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Sub-module:3: Bar binding</b>					
<b>Objectives:</b> · Able to know about measurement of bars. · Able to know about methods of bending bars. · Able to know about lying of bars.					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
			<b>5 hrs. = 1hrs,(Th,) + 4 hrs,(Pr,)</b>		
			<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Cut & measure the bars	• Concept & measurements of bars for cutting	0.2	0.5	0.7
2	Bend the bars.	• rolling, • incremental bending, • hot bending, • rotary-draw bending, and • Induction bending.	0.3	0.5	0.8
3	Lay the bars.	•Process of laying of bars as mentioned in the drawing	0.2	1.5	1.7
4	Bind bars required in the construction according to the design	• Lap Splice • Mechanical Splice • Welded Splice	0.3	1.5	1.8
	<b>Sub-total:</b>		<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Sub-module:4: Beam &amp; Column construction</b>					
<b>Description:</b> It deals with the knowledge and skills related to the beam & column.					
<b>Objectives:</b> · Able to know about design of beam & column. · Able to know about reinforcement design in beam & column. · Able to know about the construction methods of beam & column.					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
			<b>10 hrs. = 2.5hrs,(Th,) + 7.5hrs,(Pr,)</b>		
			<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Read the drawing	• Introduction & concept to beam & column construction	0.2	1.0	1.2
2	Provide the reinforcement to beam & column	• Main bars according to design & drawing	0.3	1.3	1.6

		<ul style="list-style-type: none"> <li>• Secondary bars</li> <li>• Lap design.</li> <li>• Process of lapping.</li> </ul>			
3	Layout the beam & column construction	<ul style="list-style-type: none"> <li>• Column layouts.</li> <li>• Column reinforcement work.</li> <li>• Column formwork.</li> <li>• Pouring of concrete.</li> <li>• Completion of trench excavation for the construction of grade beams between piles.</li> <li>• Grade beam excavated along with footings.</li> <li>• Placement of reinforcement on flat soling bricks.</li> <li>• Shuttering bottom and one side of grade beam and placed reinforcement</li> </ul>	0.5	1.7	2.2
<b>Sub-total:</b>			<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Sub-module:5: Scaffolding, shuttering &amp; Retrofitting</b>					
<b>Description:</b> It deals with the knowledge and skills related to the Scaffolding, shuttering & Retrofitting.					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>· Able to know about Scaffolding, shuttering &amp; Retrofitting.</li> <li>· Able to know about construction methods of Scaffolding, shuttering &amp; Retrofitting.</li> <li>· Able to know about the supports &amp; joints of Scaffolding, shuttering &amp; Retrofitting.</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>10 hrs. = 2.5hrs,(Th,) + 7.5hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Cut & measure the supports	<ul style="list-style-type: none"> <li>• Concept of Scaffolding, shuttering &amp; Retrofitting.</li> </ul>	0.2	1.0	1.2
2	Construct Scaffolding, shuttering & Retrofitting	<ul style="list-style-type: none"> <li>• Adding New Shear Wall.</li> <li>• Adding Steel Bracing.</li> <li>• Wall Thickening Technique.</li> <li>• Base Isolation Technique.</li> <li>• Mass Reduction Technique.</li> <li>• Jacketing Method.</li> <li>• Fiber Reinforced Polymer (FRP)</li> <li>• Epoxy Injection Method</li> </ul>	0.5	2.0	2.5
3	Construct supports & joints of Scaffolding, shuttering & Retrofitting	<ul style="list-style-type: none"> <li>• Types of Supports &amp; joints of Scaffolding, shuttering &amp; Retrofitting</li> <li>• Concept of Supports &amp; joints of Scaffolding, shuttering &amp; Retrofitting</li> <li>• Process Of Supports &amp; joints of Scaffolding, shuttering &amp; Retrofitting</li> </ul>	1.0	2.0	3.0
<b>Sub-total:</b>			<b>1.7</b>	<b>5.0</b>	<b>6.7</b>
<b>Sub-module:6: Ratio of mortar &amp; grade of concrete mix</b>					
<b>Description:</b> It deals with the knowledge and skills related to the Ratio of mortar & grade of concrete mix.					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>· Able to know about ratio &amp; types of mortar.</li> <li>· Able to know about grade of concrete mix.</li> <li>· Able to know about the process of mixing.</li> </ul>					

		<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.			
		<b>5 hrs. = 1 hrs,(Th,) + 4hrs,(Pr,)</b>		<b>Time (hours)</b>	
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Prepare the mortar	<ul style="list-style-type: none"> <li>• Cement Mortar</li> <li>• Lime Mortar</li> <li>• Surki Mortar</li> <li>• Gauged Mortar</li> <li>• Mud Mortar</li> </ul>	0.2	1.0	1.2
2	Prepare grade of concrete mix	M7.5 1 : 4 : 8 M10 1 : 3 : 6 M15 1 : 2 : 4 M20 1 : 1.5 : 3 20 MPa	0.3	1.0	1.3
3	Mix the mortar	<ul style="list-style-type: none"> <li>• dry blending,</li> <li>• emulsification,</li> <li>• particle size reduction and</li> <li>• paste mixing</li> </ul>	0.5	2.0	2.5
<b>Sub-total:</b>			<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Sub-module:7: House wiring</b>					
<b>Description:</b> It deals with the knowledge and skills related to the house wiring.					
<b>Objectives:</b> · Able to know about types of appliances & tools used in house wiring. · Able to know about the position of fittings. · Able to know about the process of connecting.					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>10 hrs. = 2.5hrs,(Th,) + 7.5hrs,(Pr,)</b>		<b>Time (hours)</b>	
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Use appliances & tools used in house wiring	<ul style="list-style-type: none"> <li>• Wire strippers for.</li> <li>• Insulated screwdrivers.</li> <li>• Insulated pliers.</li> <li>• Electrical tape.</li> <li>• Hacksaws.</li> <li>• Cable cutters.</li> <li>• Spanners.</li> <li>• Voltage tester</li> </ul>	0.2	1.0	1.2
2	Fit to the Position of fittings	•According to the drawing	0.3	1.0	1.3
3	Connect the wires	<ul style="list-style-type: none"> <li>• live wire,</li> <li>• neutral wire, and</li> <li>• ground wire.</li> </ul>	0.5	2.0	2.5
<b>Sub-total:</b>			<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Sub-module:8: Plumbing</b>					
<b>Description:</b> It deals with the knowledge and skills related to the plumbing work.					
<b>Objectives:</b> · Able to know about types of appliances & tools used in plumbing work. · Able to know about the position of fittings. · Able to know about the measuring & process of cutting. · Able to know about the process of connecting.					



	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>5 hrs. = 1hrs,(Th,) + 4hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Use the appliances & tools used in plumbing work	<ul style="list-style-type: none"> <li>•Tubing Cutter.</li> <li>• Hacksaw.</li> <li>• Hole saw kit.</li> <li>• Pipe and tube benders.</li> <li>• Mole grips.</li> <li>• Plumber's torch.</li> <li>• Thread sealing tape.</li> <li>• Pliers</li> </ul>	0.2	0.5	0.7
2	Fit to the Position of fittings	•According to the drawing	0.2	0.5	0.7
3	Cut the pipes & fittings	<ul style="list-style-type: none"> <li>•abrasive cutting,</li> <li>•band saw cutting,</li> <li>•cold sawing,</li> <li>•shearing, laser cutting and</li> <li>•lathe cutting.</li> </ul>	0.3	1.5	1.8
4	Connect the pipes & fittings	<ul style="list-style-type: none"> <li>•without O-ring</li> <li>•with O-ring</li> <li>•socket weld method</li> </ul>	0.3	1.5	1.8
<b>Sub-total:</b>			<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
<b>Modules 5: Field survey</b>					
<b>Description:</b> It deals with the knowledge and skills related to field survey necessary for Supervising local roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>· Able to assist to fix road alignment</li> <li>· Able to assist to fix road center line</li> <li>· Able to measure tentative alignment length (proposed road)</li> <li>· Able to assist to conduct L-section survey</li> <li>· Able to assist to conduct cross-section survey</li> <li>· Able to assist to fix reference points</li> <li>· Able to fix bench mark</li> <li>· Able to assist to investigate obligatory points</li> <li>· Able to assist to conduct traverse survey</li> <li>· Able to conduct labor availability survey</li> <li>· Able to conduct local construction materials survey</li> <li>· Able to assist to conduct household survey</li> <li>· Able to assist to perform cadastral survey</li> <li>· Able to perform traffic/vehicle count</li> <li>· Able to count trees/cross-drainage/hard rock locations</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>60 hrs. = 12hrs,(Th,) + 48hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Assist to fix Road Alignment	<u>Assisting to fix Road Alignment:</u> <ul style="list-style-type: none"> <li>• Concept and importance of fixing road alignment</li> <li>• Why and when of fixing road alignment</li> <li>• Principle and procedure for fixing road alignment</li> <li>• Assisting to fix road alignment</li> </ul>	1.0	3.0	4.0

		<ul style="list-style-type: none"> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
2	Assist to fix Road Centre	<u>Assisting to fix Road Centre line:</u> <ul style="list-style-type: none"> <li>• Concept and importance of fixing road centre line</li> <li>• Why and when of fixing road centre line</li> <li>• Principle and procedure for fixing road centre line</li> <li>• Assisting to fix road centre line</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	3.0	4.0
3	Measure tentative Road Length	<u>Measuring tentative Road Length:</u> <ul style="list-style-type: none"> <li>• Concept and importance of measuring tentative road length</li> <li>• Why and when of measuring tentative road length</li> <li>• Principle and procedure for measuring tentative road length</li> <li>• Measuring tentative road length</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	4.0	5.0
4	Assist to Conduct L-section Survey	<u>Assisting to Conduct L-section Survey:</u> <ul style="list-style-type: none"> <li>• Concept and importance of conducting L-section survey</li> <li>• Why and when of conducting Lsection survey</li> <li>• Principle and procedure for conducting L-section survey</li> <li>• Assisting to conduct L-section survey</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	8.0	9.0
5	Assist to conduct cross-section Survey	<u>Assisting to conduct cross-section Survey:</u> <ul style="list-style-type: none"> <li>• Concept and importance of conducting cross-section survey</li> <li>• Why and when of conducting crosssection survey</li> <li>• Principle and procedure for conducting cross-section survey</li> <li>• Assisting to conduct cross-section survey</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	3.0	4.0
6	Assist to fix Reference Points	<u>Assisting to fix Reference Points:</u> <ul style="list-style-type: none"> <li>• Concept and importance of fixing reference points</li> </ul>	1.0	3.0	4.0

		<ul style="list-style-type: none"> <li>• Why and when of fixing reference points</li> <li>• Principle and procedure for fixing reference points</li> <li>• Assisting to fix reference points</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
7	Fix Bench mark	<p><b><u>Fixing Bench mark:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of fixing bench mark</li> <li>• Why and when of fixing bench mark</li> <li>• Principle and procedure for fixing bench mark</li> <li>• Fixing bench mark</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	3.0	3.5
8	Assist to investigate obligatory points	<p><b><u>Assisting to investigate obligatory points:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of obligatory points</li> <li>• Why and when of investigating obligatory points</li> <li>• Principle and procedure for investigating obligatory points</li> <li>• Assisting to investigate obligatory points</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	3.0	3.5
9	Assist to conduct Traverse Survey	<p><b><u>Assisting to conduct Traverse Survey:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of conducting traverse survey</li> <li>• Why and when of conducting traverse survey</li> <li>• Principle and procedure for conducting traverse survey</li> <li>• Assisting to conduct traverse survey</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	3.0	3.5
10	Conduct Labor Availability Survey	<p><b><u>Conducting Labor Availability Survey:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of conducting labor availability survey</li> <li>• Why and when of conducting labor availability survey</li> <li>• Principle and procedure for conducting labor availability survey</li> <li>• Conducting labor availability survey</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	4.0	5.0

11	Conduct Local Construction Materials Survey	<p><b><u>Conducting Local Construction Materials Survey:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of conducting local construction materials survey</li> <li>• Why and when of conducting local construction materials survey</li> <li>• Principle and procedure for conducting local construction materials survey</li> <li>• Conducting local construction materials survey</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	3.0	3.5
12	Assist to conduct Household Survey	<p><b><u>Assisting to conduct Household Survey:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of conducting household survey</li> <li>• Why and when of conducting household survey</li> <li>• Principle and procedure for conducting household survey</li> <li>• Assisting to conduct household survey</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
13	Assist to perform cadastral Survey	<p><b><u>Assisting to perform cadastral Survey:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of cadastral survey</li> <li>• Why and when of performing cadastral survey</li> <li>• Principle and procedure for performing cadastral survey</li> <li>• Assisting to perform cadastral survey</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
14	Perform Traffic/vehicle count	<p><b><u>Performing Traffic/vehicle count:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of traffic/vehicle count</li> <li>• Why and when of performing traffic/vehicle count</li> <li>• Principle and procedure for performing traffic/vehicle count</li> <li>• Performing traffic/vehicle count</li> <li>• Format for traffic count</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	2.0	3.0
15	Count trees/cross-drainage hard rock	<p><b><u>Counting trees/cross-drainage/hard rock area:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of counting trees/cross-drainage/hard rock</li> <li>• Why and when of counting trees/cross-drainage/hard rock area</li> </ul>	1.0	2.0	3.0

		<ul style="list-style-type: none"> <li>• Principle and procedure for counting trees/cross-drainage/hard rock</li> <li>• Counting trees/cross-drainage/hard rock</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
	<b>Sub-total:</b>		<b>12.0</b>	<b>48.0</b>	<b>60.0</b>
<b>Modules 6: Estimating &amp; Costing</b>					
<b>Description:</b> It deals with the knowledge and skills related to simple calculations/estimations and reading/interpreting/ preparing drawings /sketches necessary for supervising local roads.					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To perform simple calculations/estimations</li> <li>· To read/Interpret/ prepare drawings /sketches</li> </ul>					
<b>Sub-modules:</b> 1. Calculations/estimations 2. Drawings /sketches 3. E-bidding					
<b>Sub-module:1: Calculations/estimations</b>					
<b>Description:</b> It deals with the knowledge and skills related to simple calculations/estimations necessary for supervising local roads.					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To calculate area/volume of various geometrical figures</li> <li>· To use government norms/rates</li> <li>· To read/interpret specifications</li> <li>· To estimate/cost materials</li> <li>· To estimate/cost equipment/tools</li> <li>· To estimate human resources</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>30hrs. = 6hrs,(Th,) + 24hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Calculate area of various geometrical figures	<u>Calculating area of various geometrical figures:</u> <ul style="list-style-type: none"> <li>• Concept and importance of calculating area of various geometrical figures</li> <li>• Why and when of calculating area of various geometrical figures</li> <li>• Principle and procedure for calculating area of various geometrical figures</li> <li>• Calculating area of various geometrical figures</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	1.5	1.7
2	Calculate volume of various geometrical figures	<u>Calculating volume of various geometrical figures:</u> <ul style="list-style-type: none"> <li>• Concept and importance of calculating volume of various geometrical figures</li> <li>• Why and when of calculating volume of various geometrical figures</li> </ul>	0.3	1.5	1.8

		<ul style="list-style-type: none"> <li>• Principle and procedure for calculating volume of various geometrical figures</li> <li>• Calculating volume of various geometrical figures</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
3	Use government norms/rates	<p><b><u>Using government norms/rates:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of using government norms/rates</li> <li>• Why and when of using government norms/rates</li> <li>• Principle and procedure for using government norms/rates</li> <li>• Using government norms/rates</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	3.0	3.5
4	Read/interpret specifications	<p><b><u>Reading/interpreting specifications:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of reading/interpreting specifications</li> <li>• Why and when of reading/interpreting specifications</li> <li>• Principle and procedure for reading/interpreting specifications</li> <li>• Reading/interpreting specifications</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	5.0	6.0
5	Estimate/cost materials	<p><b><u>Estimating/costing materials:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of estimating/costing materials</li> <li>• Why and when of estimating/costing materials</li> <li>• Principle and procedure for estimating/costing materials</li> <li>• Estimating/costing materials</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	2.0	5.0	7.0
6	Estimate/cost equipment/tools	<p><b><u>Estimating/costing equipment/tools:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of estimating/costing equipment/tools</li> <li>• Why and when of estimating/costing equipment/tools</li> <li>• Principle and procedure for estimating/costing equipment/tools</li> <li>• Estimating/costing equipment/tools</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	4.0	5.0
7	Estimate human resources	<p><b><u>Estimating human resources:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of estimating human resources</li> </ul>	1.0	4.0	5.0

		<ul style="list-style-type: none"> <li>• Why and when of estimating human resources</li> <li>• Principle and procedure for estimating human resources</li> <li>• Estimating human resources</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
	<b>Sub-total:</b>		<b>6</b>	<b>24</b>	<b>30</b>
<b>Sub-module:2: Drawings /sketches</b>					
	<b>Description:</b> It deals with the knowledge and skills related to drawings and sketches necessary for Supervising local roads.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To prepare drawing/sketch of rectangular section</li> <li>· To prepare sketch/drawing of trapezoidal section</li> <li>· To prepare sketch/drawings of triangular section</li> <li>· To prepare sketches/drawings of circular section</li> <li>· To read/interpret plan of road alignment</li> <li>· To read/interpret section of road alignment</li> <li>· To read/interpret deviation of geometrical figures</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>10hrs. = 2hrs,(Th,) + 8hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Prepare drawing/sketch of Rectangular section	<u><b>Preparing drawing/sketch of Rectangular section:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of preparing drawing/sketch of rectangular section</li> <li>• Why and when of preparing drawing/sketch of rectangular section</li> <li>• Principle and procedure for preparing drawing/sketch of rectangular section</li> <li>• Preparing drawing/sketch of rectangular section</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.0	1.3
2	Prepare sketch/drawing of Trapezoidal section	<u><b>Preparing sketch/drawing of Trapezoidal section:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of preparing sketch/drawing of trapezoidal section</li> <li>• Why and when of preparing sketch/drawing of trapezoidal section</li> <li>• Principle and procedure for preparing sketch/drawing of trapezoidal section</li> <li>• Preparing sketch/drawing of trapezoidal section</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.0	1.3
3	Read/Interpret plan of road alignment	<u><b>Reading/Interpreting plan of road alignment:</b></u>	0.3	1.0	1.3

		<ul style="list-style-type: none"> <li>• Concept and importance of reading/interpreting plan of road alignment</li> <li>• Why and when of reading/interpreting plan of road alignment</li> <li>• Principle and procedure for reading/interpreting plan of road alignment</li> <li>• Reading/interpreting plan of road alignment</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
4	Read/Interpret section of road alignment	<p><b><u>Reading/Interpreting section of road alignment:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of</li> <li>• Why and when of reading/interpreting section of road alignment</li> <li>• Principle and procedure for reading/interpreting section of road alignment</li> <li>• Reading/interpreting section of road alignment</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	1.0	1.2
5	Read/Interpret deviation of geometrical figures	<p><b><u>Reading/Interpreting deviation of geometrical figures:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of reading/interpreting deviation of geometrical figures</li> <li>• Why and when of reading/interpreting deviation of geometrical figures</li> <li>• Principle and procedure for reading/interpreting deviation of geometrical figures</li> <li>• Reading/interpreting deviation of geometrical figures</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.0	1.3
6	Prepare sketch/drawings of triangular section	<p><b><u>Preparing sketch/drawings of triangular section:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of preparing sketch/drawings of triangular section</li> <li>• Why and when of preparing sketch/drawings of triangular section</li> <li>• Principle and procedure for preparing sketch/drawings of triangular section</li> <li>• Preparing sketch/drawings of triangular section</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.3	1.2	1.5



		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
7	Prepare sketches/drawings of circular section	<p><b>Preparing sketches/drawings of circular section:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of preparing sketches/drawings of circular section</li> <li>• Why and when of preparing sketches/drawings of circular section</li> <li>• Principle and procedure for preparing sketches/drawings of circular section</li> <li>• Preparing sketches/drawings of circular section</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.8	2.1
<b>Sub-total:</b>			<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
<b>Sub-module:3: E-bidding</b>					
<b>Description:</b> It deals with the knowledge and skills related to bidding of Tender					
<b>Objectives:</b> · E-bidding					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>10hrs. = 2hrs,(Th,) + 8hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	E-bidding	<ul style="list-style-type: none"> <li>• Concept &amp; process of E-bidding</li> </ul>	2.0	8.0	10.0
<b>Sub-total:</b>			<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
<b>Modules 7: Setting out/layout</b>					
Description: It deals with the knowledge and skills related to setting out/layout Necessary for Supervising local roads.					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To task statements</li> <li>· To prepare check list</li> <li>· To collect/identify tools/equipment/materials</li> <li>· To perform measurements</li> <li>· To apply 3-4-5 method of layout</li> <li>· To perform setting out of centerline (road alignment)</li> <li>· To perform setting out of formation width</li> <li>· To perform setting out of retaining/breast walls</li> <li>· To perform setting out of cross drainage structures</li> <li>· To perform setting out of bio engineering works</li> <li>· To locate road centerline</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>25hrs. = 5hrs,(Th,) + 20hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Prepare check list	<p><b>Preparing check list:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of check list</li> <li>• Why and when of preparing check list</li> <li>• Principle and procedure for preparing check list</li> <li>• Preparing check list</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.5	2.0	2.5

		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
2	Collect/Identify tools/equipment/materials	<p><b><u>Collecting/Identifying tools/equipment/materials:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of tools/equipment/materials</li> <li>• Why and when of collecting/identifying tools/equipment/materials</li> <li>• Principle and procedure for Collecting/identifying tools/equipment/materials</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
3	Perform Measurements	<p><b><u>Performing Measurements:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of measurements</li> <li>• Why and when of taking measurements</li> <li>• Principle and procedure for taking measurements</li> <li>• Performing measurements</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
4	Apply 3-4-5 method of layout	<p><b><u>Applying 3-4-5 method of layout:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of 3-4-5 method of layout</li> <li>• Why and when of applying 3-4-5 method of layout</li> <li>• Principle and procedure for applying 3-4-5 method of layout</li> <li>• Applying 3-4-5 method of layout</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
5	Perform setting out of centerline (road alignment)	<p><b><u>Performing setting out of centerline (road alignment):</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of setting out of centerline (road alignment)</li> <li>• Why and when of setting out of centerline (road alignment)</li> <li>• Principle and procedure for setting out of centerline (road alignment)</li> <li>• Performing setting out of centerline (road alignment)</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5

6	Perform setting out of formation width	<p><b><u>Performing setting out of formation width:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of setting out (cross section) of formation width</li> <li>• Why and when of setting out of formation width</li> <li>• Principle and procedure for setting out of formation width</li> <li>• Performing setting out of formation width</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
7	Perform setting out of retaining/breast walls	<p><b><u>Performing setting out of retaining/breast walls:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of setting out of retaining/breast walls</li> <li>• Why and when of setting out of retaining/breast walls</li> <li>• Principle and procedure for setting out of retaining/breast walls</li> <li>• Performing setting out of retaining/breast walls</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
8	Perform setting out of cross drainage structures	<p><b><u>Performing setting out of cross drainage structures:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of setting out of cross drainage structures</li> <li>• Why and when of setting out of cross drainage structures</li> <li>• Principle and procedure for setting out of cross drainage structures</li> <li>• Performing setting out of cross drainage structures</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
9	Perform setting out of bio engineering works	<p><b><u>Performing setting out of bio engineering works:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of setting out of bio engineering works</li> <li>• Why and when of setting out of bio engineering works</li> <li>• Principle and procedure for setting out of bio engineering works</li> <li>• Performing setting out of bio engineering works</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
10	Locate road centerline	<p><b><u>Locating road centerline:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of locating road centerline</li> </ul>	0.5	2.0	2.5

		<ul style="list-style-type: none"> <li>• Why and when of locating road centerline</li> <li>• Principle and procedure for locating road centerline</li> <li>• Locating road centerline</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
	<b>Sub-total:</b>		<b>5.0</b>	<b>20.0</b>	<b>25.0</b>
<b>Modules 8: Supervising road Construction</b>					
	<b>Description:</b> It deals with the knowledge and skills related to supervising earth, gravel, and metaled roads construction necessary for supervising local roads.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To supervise earth road construction</li> <li>· To supervise gravel road construction</li> <li>· To supervise metaled road construction</li> </ul>				
	<b>Sub-modules:</b> 1. Supervising earth road construction 2. Supervising gravel road construction 3. Supervising metaled road construction				
<b>Sub-module:1: Supervising earth road construction</b>					
	<b>Description:</b> It deals with the knowledge and skills related to the supervision of earth road construction.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To Perform site clearance</li> <li>· To Perform Supervise top soil removal work</li> <li>· To Perform benching</li> <li>· To Maintain borrow pit</li> <li>· To Maintain fill/cut slopes</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>15hrs. = 3hrs,(Th,) + 12hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Perform site clearance	<u><b>Performing site clearance:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of performing site clearance</li> <li>• Why and when of performing site clearance</li> <li>• Principle and procedure for performing site clearance</li> <li>• Performing site clearance</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	0.6	0.85
2	Supervise top soil removal work	<u><b>Supervising top soil removal work:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of supervising top soil removal work</li> <li>• Why and when of supervising top soil removal work</li> <li>• Principle and procedure for supervising top soil removal work</li> <li>• Supervising top soil removal work</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.25	0.6	0.85

		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
3	Perform benching	<p><b><u>Performing benching:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of performing benching</li> <li>• Why and when of performing benching</li> <li>• Principle and procedure for performing benching</li> <li>• Performing benching</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	0.6	0.85
4	Maintain borrow pit	<p><b><u>Maintaining borrow pit:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining borrow pit</li> <li>• Why and when of maintaining borrow pit</li> <li>• Principle and procedure for maintaining borrow pit</li> <li>• Maintaining borrow pit</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	0.6	0.85
5	Maintain fill/cut slopes	<p><b><u>Maintaining fill/cut slopes:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining fill/cut slopes</li> <li>• Why and when of maintaining fill/cut slopes</li> <li>• Principle and procedure for maintaining fill/cut slopes</li> <li>• Maintaining fill/cut slopes</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	0.6	0.85
6	Manage safe disposal of surplus materials	<p><b><u>materials Managing safe disposal of surplus materials:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of managing safe disposal of surplus materials</li> <li>• Why and when of managing safe disposal of surplus materials</li> <li>• Principle and procedure for managing safe disposal of surplus materials</li> <li>• Managing safe disposal of surplus materials</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	0.6	0.85
7	Maintain Formation width	<p><b><u>Maintaining Formation width:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining formation width</li> <li>• Why and when of maintaining formation width</li> </ul>	0.25	1.0	1.25

		<ul style="list-style-type: none"> <li>• Principle and procedure for maintaining formation width</li> <li>• Maintaining formation width</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
8	Maintain camber/upper elevation (S.E.)	<p><b><u>Maintaining camber/upper elevation (S.E.):</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining camber/upper elevation (S.E.)</li> <li>• Why and when of maintaining camber/upper elevation (S.E.)</li> <li>• Principle and procedure for maintaining camber/upper elevation (S.E.)</li> <li>• Maintaining camber/upper elevation (S.E.)</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	1.2	1.45
9	Maintain longitudinal slope/grade	<p><b><u>Maintaining longitudinal slope/grade:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining longitudinal slope/grade</li> <li>• Why and when of maintaining longitudinal slope/grade</li> <li>• Principle and procedure for maintaining longitudinal slope/grade</li> <li>• Maintaining longitudinal slope/grade</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	1.2	1.45
10	Maintain vertical curves	<p><b><u>Maintaining vertical curves:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining vertical curves</li> <li>• Why and when of maintaining vertical curves</li> <li>• Principle and procedure for maintaining vertical curves</li> <li>• Maintaining vertical curves</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	1.5	1.75
11	Maintain horizontal curves	<p><b><u>Maintaining horizontal curves:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining horizontal curves</li> <li>• Why and when of maintaining horizontal curves</li> <li>• Principle and procedure for maintaining horizontal curves</li> <li>• Maintaining horizontal curves</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.25	1.5	1.75

		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
12	Maintain compaction density	<p><b>Maintaining compaction density:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining compaction density</li> <li>• Why and when of maintaining compaction density</li> <li>• Principle and procedure for maintaining compaction density</li> <li>• Maintaining compaction density</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.25	2.0	2.25
<b>Sub-total:</b>			<b>3.0</b>	<b>12.0</b>	<b>15.0</b>
<b>Sub-module:2: Supervising gravel road construction</b>					
<b>Description:</b> It deals with the knowledge and skills related to the supervision of gravel road construction.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>· To control traffic</li> <li>· To maintain gravel sizing</li> <li>· To maintain compaction</li> <li>· To maintain thickness</li> <li>· To maintain edging</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>10hrs. = 2hrs,(Th,) + 8hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Control Traffic	<p><b>Controlling Traffic:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of controlling traffic</li> <li>• Why and when of controlling traffic</li> <li>• Principle and procedure for controlling traffic</li> <li>• Controlling traffic</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
2	Maintain gravel sizing	<p><b>Maintaining gravel sizing:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining gravel sizing</li> <li>• Why and when of maintaining gravel sizing</li> <li>• Principle and procedure for maintaining gravel sizing</li> <li>• Maintaining gravel sizing</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	1.5	2.7
3	Maintain compaction	<p><b>Maintaining compaction:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining compaction</li> </ul>	0.5	1.5	2.7

		<ul style="list-style-type: none"> <li>• Why and when of maintaining compaction</li> <li>• Principle and procedure for maintaining compaction</li> <li>• Maintaining compaction</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
4	Maintain thickness	<p><b>Maintaining thickness:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining thickness</li> <li>• Why and when of maintaining thickness</li> <li>• Principle and procedure for maintaining thickness</li> <li>• Maintaining thickness</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.5	2.6
5	Maintain edging	<p><b>Maintaining edging:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining edging</li> <li>• Why and when of maintaining edging</li> <li>• Principle and procedure for maintaining edging</li> <li>• Maintaining edging</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	1.5	2.5
<b>Sub-total:</b>			<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
<b>Sub-module:3: Supervising metaled road construction</b>					
<b>Description:</b> It deals with the knowledge and skills related to the supervision of metaled road construction.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>· To task statements</li> <li>· To maintain penetration macadam work.</li> <li>· To maintain ottaseal</li> <li>· To maintain asphalt concrete work</li> <li>· To maintain single surface treatment work</li> <li>· To maintain double surface treatment work</li> <li>· To maintain concrete pavement</li> <li>· To maintain sand seal</li> <li>· To maintain stone soling pavement</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>25hrs. = 5hrs,(Th,) + 20hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Maintain penetration macadam work.	Maintaining penetration macadam work: <ul style="list-style-type: none"> <li>• Concept and importance of maintaining penetration macadam work</li> <li>• Why and when of maintaining penetration macadam work</li> </ul>	0.5	2.5	3.0



		<ul style="list-style-type: none"> <li>• Principle and procedure for maintaining penetration macadam work</li> <li>• Maintaining penetration macadam work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
2	Maintain ottaseal	<p><b><u>Maintaining ottaseal:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining ottaseal</li> <li>• Why and when of maintaining ottaseal</li> <li>• Principle and procedure for maintaining ottaseal</li> <li>• Maintaining ottaseal</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.5	3.0
3	Maintain asphalt concrete work	<p><b><u>Maintaining asphalt concrete work:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining asphalt concrete work</li> <li>• Why and when of maintaining asphalt concrete work</li> <li>• Principle and procedure for maintaining asphalt concrete work</li> <li>• Maintaining asphalt concrete work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	3.0	3.5
4	Maintain single surface treatment work	<p><b><u>Maintaining single surface treatment work:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining single surface treatment work</li> <li>• Why and when of maintaining single surface treatment work</li> <li>• Principle and procedure for maintaining single surface treatment work</li> <li>• Maintaining single surface treatment work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	3.0	3.5
5	Maintain double surface treatment work	<p><b><u>Maintaining double surface treatment work:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining double surface treatment work</li> <li>• Why and when of maintaining double surface treatment work</li> <li>• Principle and procedure for maintaining double surface treatment work</li> </ul>	1.0	3.0	4.0

		<ul style="list-style-type: none"> <li>• Maintaining double surface treatment work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
6	Maintain concrete pavement	<p><b><u>Maintaining concrete pavement:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining concrete pavement</li> <li>• Why and when of maintaining concrete pavement</li> <li>• Principle and procedure for maintaining concrete pavement</li> <li>• Maintaining concrete pavement</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	1.0	2.0	3.0
7	Maintain sand seal	<p>Maintaining sand seal:</p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining sand seal</li> <li>• Why and when of maintaining sand seal</li> <li>• Principle and procedure for maintaining sand seal</li> <li>• Maintaining sand seal</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
8	Maintain stone soling pavement	<p><b><u>Maintaining sand seal:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining sand seal</li> <li>• Why and when of maintaining sand seal</li> <li>• Principle and procedure for maintaining sand seal</li> <li>• Maintaining sand seal</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	2.0	2.5
	<b>Sub-total:</b>		<b>5.0</b>	<b>20.0</b>	<b>25.0</b>
<b>Modules 9: Supervising wall, drainage and drain</b>					
<b>Description:</b> It deals with the knowledge and skills related to the supervision of wall, drainage and drain construction necessary for supervising local Roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To supervise wall construction</li> <li>• To supervise cross drainage construction</li> <li>• To supervise roadside drain construction</li> </ul>					
<b>Sub-modules:</b>					
<ol style="list-style-type: none"> <li>1. Supervising wall construction</li> <li>2. Supervising cross drainage construction</li> <li>3. Supervising roadside drain construction</li> </ol>					

<b>Sub-module:1: Supervising wall construction</b>					
<b>Description:</b> It deals with the knowledge and skills related to the supervision of walls construction.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To layout walls</li> <li>• To maintain foundation excavation</li> <li>• To maintain soling work</li> <li>• To maintain foundation PCC/RCC work</li> <li>• To maintain construction joints</li> <li>• To maintain weep hole</li> <li>• To maintain filter materials</li> <li>• To maintain wall dimension</li> <li>• To maintain retaining walls</li> <li>• To maintain breast wall</li> <li>• To maintain toe wall</li> <li>• To maintain revetment wall</li> <li>• To maintain dry/masonry /composite walls</li> <li>• To maintain gabion wall/construction</li> <li>• To maintain gabion crate/box weaving</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
			<b>13hrs. = 3hrs,(Th,) + 10hrs,(Pr,)</b>		<b>Time (hours)</b>
S. N.	Task statements	Related technical knowledge	Th.	Pr.	Total
1	Layout walls	<u><b>Laying out walls:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of laying out walls</li> <li>• Why and when of laying out walls</li> <li>• Principle and procedure for laying out walls</li> <li>• Laying out walls</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
2	Maintain foundation excavation	<u><b>Maintaining foundation excavation:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining foundation excavation</li> <li>• Why and when of maintaining foundation excavation</li> <li>• Principle and procedure for maintaining foundation excavation</li> <li>• Maintaining foundation excavation</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
3	Maintain soling work	<u><b>Maintaining soling work:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining soling work</li> <li>• Why and when of maintaining soling work</li> <li>• Principle and procedure for maintaining soling work</li> <li>• Maintaining soling work</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.2	0.6	0.8

		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
4	Maintain foundation PCC/RCC work	<p><b><u>Maintaining foundation PCC/RCC work:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining foundation PCC/RCC work</li> <li>• Why and when of maintaining foundation PCC/RCC work</li> <li>• Principle and procedure for maintaining foundation PCC/RCC work</li> <li>• Maintaining foundation PCC/RCC work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
5	Maintain Construction joints	<p><b><u>Maintaining Construction joints:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining construction joints</li> <li>• Why and when of maintaining construction joints</li> <li>• Principle and procedure for maintaining construction joints</li> <li>• Maintaining Construction joints</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
6	Maintain weep hole	<p><b><u>Maintaining weep hole :</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining weep hole</li> <li>• Why and when of maintaining weep hole</li> <li>• Principle and procedure for maintaining weep hole</li> <li>• Maintaining weep hole</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
7	Maintain filter materials	<p><b><u>Maintaining filter materials:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining filter materials</li> <li>• Why and when of maintaining filter materials</li> <li>• Principle and procedure for maintaining filter materials</li> <li>• Maintaining filter materials</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
8	Maintain wall dimension	<p><b><u>Maintaining wall dimension :</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining wall dimension</li> <li>• Why and when of maintaining wall dimension</li> <li>• Principle and procedure for maintaining wall dimension</li> <li>• Maintaining wall dimension</li> </ul>	0.2	0.6	0.8

		<ul style="list-style-type: none"> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
9	Maintain retaining walls	<p><b><u>Maintaining retaining walls:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining retaining walls</li> <li>• Why and when of maintaining retaining walls</li> <li>• Principle and procedure for maintaining retaining walls</li> <li>• Maintaining retaining walls</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
10	Maintain breast wall	<p><b><u>Maintaining breast wall:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining breast wall</li> <li>• Why and when of maintaining breast wall</li> <li>• Principle and procedure for maintaining breast wall</li> <li>• Maintaining breast wall</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.6	0.8
11	Maintain toe wall	<p><b><u>Maintaining toe wall:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining toe wall</li> <li>• Why and when of maintaining toe wall</li> <li>• Principle and procedure for maintaining toe wall</li> <li>• Maintaining toe wall</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
12	Maintain revetment wall	<p><b><u>Maintaining revetment wall:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining revetment wall</li> <li>• Why and when of maintaining revetment wall</li> <li>• Principle and procedure for maintaining revetment wall</li> <li>• Maintaining revetment wall</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
13	Maintain dry/masonry /composite walls	<p><b><u>Maintaining dry/masonry /composite walls:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining dry/masonry /composite walls</li> <li>• Why and when of maintaining dry/masonry /composite walls</li> </ul>	0.2	0.8	1.0

		<ul style="list-style-type: none"> <li>• Principle and procedure for maintaining dry/masonry /composite walls</li> <li>• Maintaining dry/masonry /composite walls</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
14	Maintain gabion wall/construction	<p><b><u>Maintaining gabion wall/construction:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining gabion wall/construction</li> <li>• Why and when of maintaining gabion wall/construction</li> <li>• Principle and procedure for maintaining gabion wall/construction</li> <li>• Maintaining gabion wall/construction</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
15	Maintain gabion crate/box weaving	<p><b><u>Maintaining gabion crate/box weaving:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining gabion crate/box weaving</li> <li>• Why and when of maintaining gabion crate/box weaving</li> <li>• Principle and procedure for maintaining gabion crate/box weaving</li> <li>• Maintaining gabion crate/box weaving</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.8	1.0
<b>Sub-total:</b>			<b>3.0</b>	<b>10.0</b>	<b>13.0</b>
<b>Sub-module:2: Supervising cross drainage construction</b>					
<b>Description:</b> It deals with the knowledge and skills related to the supervision of Cross drainage construction necessary for supervising local roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To assist for layout</li> <li>• To maintain foundation excavation</li> <li>• To manage dewatering /diversion of water</li> <li>• To maintain line/level of formwork</li> <li>• To inspect staging</li> <li>• To maintain line level of sub-structure</li> <li>• To maintain line level of super-structure</li> <li>• To maintain line/level of formwork</li> <li>• To maintain protection works</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>7hrs. = 2hrs,(Th,) + 5hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Assist for layout	<p><b><u>Assisting for layout:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of layout</li> <li>• Why and when of layout</li> <li>• Principle and procedure for layout</li> <li>• Assisting for layout</li> </ul>	0.2	0.5	0.7

		<ul style="list-style-type: none"> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
2	Maintain foundation excavation	<p><b><u>Maintaining foundation excavation:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining foundation excavation</li> <li>• Why and when of maintaining foundation excavation</li> <li>• Principle and procedure for maintaining foundation excavation</li> <li>• Maintaining foundation excavation</li> </ul> <p>Precautions to be taken while carrying out this task</p> <ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
3	Manage dewatering /diversion of water	<p><b><u>Managing dewatering diversion of water:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of managing dewatering and diversion of water</li> <li>• Why and when of managing dewatering and diversion of water</li> <li>• Principle and procedure for managing dewatering and diversion of water</li> <li>• Managing dewatering and diversion of water</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
4	Maintain line/level of formwork	<p><b><u>Maintaining line/level of formwork:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining line/level of formwork</li> <li>• Why and when of maintaining line/level of formwork</li> <li>• Principle and procedure for maintaining line/level of formwork</li> <li>• Maintaining line/level of formwork</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
5	Inspect staging	<p><b><u>Inspecting staging :</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of inspecting staging</li> <li>• Why and when of inspecting staging</li> <li>• Principle and procedure for inspecting staging</li> <li>• Inspecting staging</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
6	Maintain line level of sub-structure	<p><b><u>Maintaining line level of sub-structure:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining line level of substructure</li> <li>• Why and when of maintaining line level of sub-structure</li> </ul>	0.2	0.5	0.7

		<ul style="list-style-type: none"> <li>• Principle and procedure for maintaining line level of substructure</li> <li>• Maintaining line level of substructure</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
7	Maintain line level of superstructure	<p><b><u>Maintaining line level of superstructure:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining line level of superstructure</li> <li>• Why and when of maintaining line level of super-structure</li> <li>• Principle and procedure for maintaining line level of superstructure</li> <li>• Maintaining line level of superstructure</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
8	Maintain line/level of formwork	<p><b><u>Maintaining line/level of formwork:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining line/level of formwork</li> <li>• Why and when of maintaining line/level of formwork</li> <li>• Principle and procedure for maintaining line/level of formwork</li> <li>• Maintaining line/level of formwork</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	0.5	0.8
9	Maintain protection works	<p><b><u>Maintaining protection works:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining protection works</li> <li>• Why and when of maintaining protection works</li> <li>• Principle and procedure for maintaining protection works</li> <li>• Maintaining protection works</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.0	1.3
	<b>Sub-total:</b>		<b>2.0</b>	<b>5.0</b>	<b>7.0</b>
<b>Sub-module:3: Supervising roadside drain construction</b>					
	<b>Description:</b> It deals with the knowledge and skills related to the supervision of roadside drain construction necessary for supervising local roads.				
	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• To layout for roadside drain</li> <li>• To assure/monitor quality of concrete work</li> <li>• To maintain dimension of masonry work</li> <li>• To maintain dimensions/slopes</li> <li>• To supervise plastering</li> <li>• To supervise curving</li> <li>• To maintain surface/sub-surface drainage</li> </ul>				



		<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.			
		<b>5hrs. = 1.5hrs,(Th,) + 3.5hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Layout for roadside drain	<b><u>Laying out for roadside drain:</u></b>	0.2	0.5	0.7
2	Assure/monitor quality of concrete work	<b><u>Assuring/monitoring quality of concrete work:</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of assuring/monitoring quality of concrete work</li> <li>• Why and when of assuring/monitoring quality of concrete work</li> <li>• Principle and procedure for assuring/monitoring quality of concrete work</li> <li>• Assuring/monitoring quality of concrete work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
3	Maintain dimension of masonry work	<b><u>Maintaining dimension of masonry work:</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining dimension of masonry work</li> <li>• Why and when of maintaining dimension of masonry work</li> <li>• Principle and procedure for maintaining dimension of masonry work</li> <li>• Maintaining dimension of masonry work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
4	Maintain dimensions/slopes	<b><u>Maintaining dimensions/slopes:</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining dimensions/slopes</li> <li>• Why and when of maintaining dimensions/slopes</li> <li>• Principle and procedure for maintaining dimensions/slopes</li> <li>• Maintaining dimensions/slopes</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
5	Supervise plastering	<b><u>Supervising plastering:</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of supervising plastering</li> <li>• Why and when of supervising plastering</li> <li>• Principle and procedure for supervising plastering</li> <li>• Supervising plastering</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7

6	Supervise curving	<b>Supervising curving:</b> <ul style="list-style-type: none"> <li>• Concept and importance of supervising curving</li> <li>• Why and when of supervising curving</li> <li>• Principle and procedure for supervising curving</li> <li>• Supervising curving</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
7	Maintain surface/sub-surface drainage	<b>Maintaining surface/sub-surface drainage:</b> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining surface/sub-surface drainage</li> <li>• Why and when of maintaining surface/sub-surface drainage</li> <li>• Principle and procedure for maintaining surface/sub-surface drainage</li> <li>• Maintaining surface/sub-surface drainage</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	0.5	2.0
<b>Sub-total:</b>			<b>1.5</b>	<b>3.5</b>	<b>5.0</b>
<b>Module: 10: Supervising bio-engineering works</b>					
<b>Description:</b> It deals with the knowledge and skills related to the supervision of bioengineering works.					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To supervise preparation of live stakes grass slips</li> <li>· To perform layout</li> <li>· To supervise plantation work</li> <li>· To supervise caring of plants</li> <li>· To protect plants</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>10hrs. = 2hrs,(Th,) + 8hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Supervise preparation of live stakes grass slips	<b>Supervising preparation of live stakes grass slips:</b> <ul style="list-style-type: none"> <li>• Concept and importance of supervising preparation of live stakes grass slips</li> <li>• Why and when of supervising preparation of live stakes grass slips</li> <li>• Principle and procedure for supervising preparation of live stakes grass slips</li> <li>• Supervising preparation of live stakes grass slips</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.4	1.0	1.4

2	Perform layout	<p><b>Performing layout:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of layout</li> <li>• Why and when of layout</li> <li>• Principle and procedure for layout</li> <li>• Performing layout</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.4	1.6	2.0
3	Supervise plantation work	<p><b>Supervising plantation work:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of supervising plantation work</li> <li>• Why and when of supervising plantation work</li> <li>• Principle and procedure for supervising plantation work</li> <li>• Supervising plantation work</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.4	1.6	2.0
4	Supervise caring of plants	<p>Supervising caring of plants:</p> <ul style="list-style-type: none"> <li>• Concept and importance of caring of plants</li> <li>• Why and when of caring of plants</li> <li>• Principle and procedure for caring of plants</li> <li>• Supervising caring of plants</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.4	1.6	2.0
5	Protect plants	<p><b>Protecting plants:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of protecting plants</li> <li>• Why and when of protecting plants</li> <li>• Principle and procedure for protecting plants</li> <li>• Protecting plants</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.4	2.2	2.6
<b>Sub-total:</b>			<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
<b>Module: 11: Road maintenance works</b>					
<b>Description:</b> It deals with the knowledge and skills related to road maintenance works necessary for supervising local roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>· To supervise routine maintenance</li> <li>· To supervise recurrent maintenance</li> <li>· To supervise periodic maintenance</li> <li>· To supervise emergency maintenance</li> <li>· To supervise rehabilitation maintenance</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
			<b>15hrs. = 3hrs,(Th,) + 12hrs,(Pr,)</b>		
			<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>

1	Supervise routine maintenance	<p><b><u>Supervising routine maintenance:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of routine maintenance</li> <li>• Why and when of routine maintenance</li> <li>• Principle and procedure for routine maintenance</li> <li>• Supervising routine maintenance</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.6	2.4	3.0
2	Supervise recurrent maintenance	<p><b><u>Supervising recurrent maintenance:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of recurrent maintenance</li> <li>• Why and when of recurrent maintenance</li> <li>• Principle and procedure for recurrent maintenance</li> <li>• Supervising recurrent maintenance</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.6	2.4	3.0
3	Supervise periodic maintenance	<p><b><u>Supervising periodic maintenance:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of periodic maintenance</li> <li>• Why and when of periodic maintenance</li> <li>• Principle and procedure for periodic maintenance</li> <li>• Supervising periodic maintenance</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.6	2.4	3.0
4	Supervise emergency maintenance	<p><b><u>Supervising emergency maintenance:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of emergency maintenance</li> <li>• Why and when of emergency maintenance</li> <li>• Principle and procedure for emergency maintenance</li> <li>• Supervising emergency maintenance</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.6	2.4	3.0
5	Supervise rehabilitation maintenance	<p><b><u>Supervising rehabilitation maintenance:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of rehabilitation maintenance</li> <li>• Why and when of rehabilitation maintenance</li> <li>• Principle and procedure for rehabilitation maintenance</li> <li>• Supervising rehabilitation maintenance</li> </ul>	0.6	2.4	3.0

		<ul style="list-style-type: none"> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
	<b>Sub-total:</b>		<b>3.0</b>	<b>12</b>	<b>15</b>
<b>Modules 12: Construction Management</b>					
	<b>Description:</b> It deals with the knowledge and skills related to managing construction works, managing health/environment, communicating with others, maintaining records, growing Professionally, and Developing entrepreneurial skills necessary for supervising local roads.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>· To manage construction works</li> <li>· To manage health/environment</li> <li>· To communicate with others</li> <li>· To maintain records</li> <li>· To grow professionally</li> <li>· To develop entrepreneurial skills</li> </ul>				
	<b>Sub-modules:</b> <ol style="list-style-type: none"> <li>1. Managing construction works</li> <li>2. Managing health/environment</li> <li>3. Communicating with others</li> <li>4. Maintaining records</li> <li>5. Growing professionally</li> <li>6. Developing entrepreneurial skills</li> </ol>				
<b>Sub-module:1: Managing construction works</b>					
	<b>Description:</b> It deals with the knowledge and skills related to managing construction works necessary for supervising local roads.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>• To prepare/follow schedule</li> <li>• To manage labor force/road building groups</li> <li>• To manage materials • To manage machine</li> <li>• To manage money</li> <li>• To manage minute/document</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>3hrs. = 1hrs,(Th,) + 2hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Prepare/follow schedule	<u><b>Preparing/following schedule:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of preparing/following schedule</li> <li>• Why and when of preparing/following schedule</li> <li>• Principle and procedure for preparing/following schedule</li> <li>• Preparing/following schedule</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.3	0.4
2	Manage labor force/road building groups	<u><b>Managing labor force/road building groups:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of managing labor force/road building groups</li> <li>• Why and when of managing labor force/road building groups</li> <li>• Principle and procedure for managing labor force/road building groups</li> </ul>	0.1	0.3	0.4

		<ul style="list-style-type: none"> <li>• Managing labor force/road building groups</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
3	Manage materials	<p><b><u>Managing materials :</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of managing materials</li> <li>• Why and when of managing materials</li> <li>• Principle and procedure for managing materials</li> <li>• Managing materials</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.3	0.5
4	Manage machine	<p><b><u>Managing machine:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of managing machine</li> <li>• Why and when of managing machine</li> <li>• Principle and procedure for managing machine</li> <li>• Managing machine</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.3	0.5
5	Manage money	<p><b><u>Managing money:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of managing money</li> <li>• Why and when of managing money</li> <li>• Principle and procedure for managing money</li> <li>• Managing money</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.3	0.5
6	Manage minute/document	<p><b><u>Managing minute/document:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of managing minute/document</li> <li>• Why and when of managing minute/document</li> <li>• Principle and procedure for managing minute/document</li> <li>• Managing minute/document</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
	<b>Sub-total:</b>		<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
	<b>Sub-module:2: Managing health/environment</b>				
	<b>Description:</b> It deals with the knowledge and skills related to managing health /environment necessary for supervising local roads.				
	<b>Objectives:</b>				
	<ul style="list-style-type: none"> <li>• To maintain waste disposal system</li> <li>• To manage safe/healthy drinking water</li> </ul>				

	<ul style="list-style-type: none"> <li>• To be familiar with communicable diseases</li> <li>• To create safe working environment</li> <li>• To be familiar with the management of hiv/std</li> <li>• To minimize noise/dust pollution</li> <li>• To enforce to manage quarry site</li> <li>• To facilitate to dispose unwanted oil</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
	<b>3hrs. = 1hrs,(Th,) + 2hrs,(Pr,)</b>	<b>Time (hours)</b>			
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Maintain waste disposal system	<b><u>Maintaining waste disposal system :</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining waste disposal system</li> <li>• Why and when of maintaining waste disposal system</li> <li>• Principle and procedure for maintaining waste disposal system</li> <li>• Maintaining waste disposal system</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
2	Manage safe/healthy drinking water	<b><u>Managing safe/healthy drinking water:</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of managing safe/healthy drinking water</li> <li>• Why and when of managing safe/healthy drinking water</li> <li>• Principle and procedure for managing safe/healthy drinking water</li> <li>• Managing safe/healthy drinking water</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
3	Be familiar with communicable diseases	<b><u>Being familiar with communicable diseases:</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of being familiar with communicable diseases</li> <li>• Why and when of being familiar with communicable diseases</li> <li>• Principle and procedure for being familiar with communicable diseases</li> <li>• Being familiar with communicable</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
4	Create safe working environment	<b><u>Creating safe working environment:</u></b> <ul style="list-style-type: none"> <li>• Concept and importance of creating safe working environment</li> <li>• Why and when of creating safe working environment</li> <li>• Principle and procedure for creating safe working environment</li> <li>• Creating safe working environment</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3

5	Be familiar with the management of HIV/STD	<p><b><u>Being familiar with the management of HIV/STD:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of being familiar with the management of HIV/STD</li> <li>• Why and when of being familiar with the management of HIV/STD</li> <li>• Principle and procedure for being familiar with the management of HIV/STD</li> <li>• Being familiar with the management of HIV/STD</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
6	Minimize noise/dust pollution	<p><b><u>Minimizing noise/dust pollution:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of minimizing noise/dust pollution</li> <li>• Why and when of minimizing noise/dust pollution</li> <li>• Principle and procedure for minimizing noise/dust pollution</li> <li>• Minimizing noise/dust pollution</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
7	Enforce to manage quarry site	<p><b><u>Enforcing to manage quarry site:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of enforcing to manage quarry site</li> <li>• Why and when of enforcing to manage quarry site</li> <li>• Principle and procedure for enforcing to manage quarry site</li> <li>• Enforcing to manage quarry site</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.3	0.5
8	Facilitate to dispose unwanted oil	<p><b><u>Facilitating to dispose unwanted oil :</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of facilitating to dispose unwanted oil</li> <li>• Why and when of facilitating to dispose unwanted oil</li> <li>• Principle and procedure for facilitating to dispose unwanted oil</li> <li>• Facilitating to dispose unwanted oil</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
<b>Sub-total:</b>			<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
<b>Sub-module:3: Communicating with others</b>					
<b>Description:</b> It deals with the knowledge and skills related to communicating with others necessary for supervising local roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To make telephone calls</li> </ul>					



	<ul style="list-style-type: none"> <li>• To receive telephone calls</li> <li>• To write letters</li> <li>• To write simple reports</li> <li>• To communicate with seniors</li> <li>• To communicate with juniors/labors</li> <li>• To communicate with peers</li> <li>• To communicate with contractors</li> <li>• To communicate with users' committee</li> <li>• To communicate with user's group</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>3hrs. = 1hrs,(Th,) + 2hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Make telephone calls	<u><b>Making telephone calls:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of making telephone calls</li> <li>• Why and when of making telephone calls</li> <li>• Principle and procedure for making telephone calls</li> <li>• Making telephone calls</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
2	Receive telephone calls	<u><b>Receiving telephone calls:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of receiving telephone calls</li> <li>• Why and when of receiving telephone calls</li> <li>• Principle and procedure for receiving telephone calls</li> <li>• Receiving telephone calls</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
3	Write letters	<u><b>Writing letters:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of writing letters</li> <li>• Why and when of writing letters</li> <li>• Principle and procedure for writing letters</li> <li>• Writing letters</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
4	Write simple reports	<u><b>Writing simple reports:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of writing simple reports</li> <li>• Why and when of writing simple reports</li> <li>• Principle and procedure for writing simple reports</li> <li>• Writing simple reports</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.1	0.2	0.3

		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
5	Communicate with seniors	<p><b><u>Communicating with seniors:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of communicating with seniors</li> <li>• Why and when of communicating with seniors</li> <li>• Principle and procedure for communicating with seniors</li> <li>• Communicating with seniors</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
6	Communicate with juniors/labors	<p><b><u>Communicating with juniors/labors:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of communicating with juniors/labors</li> <li>• Why and when of communicating with juniors/labors</li> <li>• Principle and procedure for communicating with juniors/labors</li> <li>• Communicating with juniors/labors</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
7	Communicate with peers	<p><b><u>Communicating with peers:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of communicating with peers</li> <li>• Why and when of communicating with peers</li> <li>• Principle and procedure for communicating with peers</li> <li>• Communicating with peers</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
8	Communicate with contractors	<p><b><u>Communicating with contractors:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of communicating with contractors</li> <li>• Why and when of communicating with contractors</li> <li>• Principle and procedure for communicating with contractors</li> <li>• Communicating with contractors</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
9	Communicate with users' committee	<p><b><u>Communicating with users' committee:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of communicating with users' committee</li> <li>• Why and when of communicating with users' committee</li> <li>• Principle and procedure for communicating with users' committee</li> <li>• Communicating with users' committee</li> </ul>	0.1	0.2	0.3

		<ul style="list-style-type: none"> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
10	Communicate with user's group	<p><b>Communicating with user's group:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of communicating with user's group</li> <li>• Why and when of communicating with user's group</li> <li>• Principle and procedure for communicating with user's group</li> <li>• Communicating with user's group</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
	<b>Sub-total:</b>		<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
<b>Sub-module:4: Maintaining records</b>					
<b>Description:</b> It deals with the knowledge and skills related to maintaining necessary for supervising local roads					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To keep records of attendance</li> <li>• To maintain muster roll</li> <li>• To keep records of tools/equipment/materials used</li> <li>• To maintain log book</li> <li>• To maintain simple a/c books</li> <li>• To identify/facilitate to apply various formats of records</li> <li>• To maintain records of applied fire safety measures</li> <li>• To maintain daily diary</li> <li>• To keep records of work progress</li> <li>• To prepare work progress records</li> <li>• To submit records/reports to the concerned</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>3hrs. = 1hrs,(Th,) + 2hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Keep records of attendance	<p><b>Keeping records of attendance:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of keeping records of attendance</li> <li>• Why and when of keeping records of attendance</li> <li>• Principle and procedure for keeping records of attendance</li> <li>• Keeping records of attendance</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.05	0.1	0.15
2	Maintain muster roll	<p><b>Maintaining muster roll:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining muster roll</li> <li>• Why and when of maintaining muster roll</li> <li>• Principle and procedure for maintaining muster roll</li> <li>• Maintaining muster roll</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.05	0.1	0.15

		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
3	Keep records of tools/equipment/materials used	<p><b><u>Keeping records of tools/equipment/materials used:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of keeping records of tools/equipment/materials used</li> <li>• Why and when of keeping records of tools/equipment/materials used</li> <li>• Principle and procedure for keeping records of tools/equipment/materials used</li> <li>• Keeping records of tools/equipment/materials used</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
4	Maintain log book	<p><b><u>Maintaining log book:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining log book</li> <li>• Why and when of maintaining log book</li> <li>• Principle and procedure for maintaining log book</li> <li>• Maintaining log book</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
5	Maintain simple A/C books	<p><b><u>Maintaining simple A/C books:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining simple A/C books</li> <li>• Why and when of maintaining simple A/C books</li> <li>• Principle and procedure for maintaining simple A/C books</li> <li>• Maintaining simple A/C books</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
6	Identify/facilitate to apply various formats of records	<p><b><u>Identifying/facilitating to apply various formats of records:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of identifying/facilitating to apply various formats of records</li> <li>• Why and when of identifying/facilitating to apply various formats of records</li> <li>• Principle and procedure for identifying/facilitating to apply various formats of records</li> <li>• Identifying/facilitating to apply various formats of records</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3

7	Maintain records of applied fire safety measures	<p><b><u>Maintaining records of applied fire safety measures:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining records of applied fire safety measures</li> <li>• Why and when of maintaining records of applied fire safety measures</li> <li>• Principle and procedure for maintaining records of applied fire safety measures</li> <li>• Maintaining records of applied fire safety measures</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
8	Maintain daily diary	<p><b><u>Maintaining daily diary:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of maintaining daily diary</li> <li>• Why and when of maintaining daily diary</li> <li>• Principle and procedure for maintaining daily diary</li> <li>• Maintaining daily diary</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
9	Keep records of work progress	<p><b><u>Keeping records of work progress:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of keeping records of work progress</li> <li>• Why and when of keeping records of work progress</li> <li>• Principle and procedure for keeping records of work progress</li> <li>• Keeping records of work progress</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
10	Prepare work progress records	<p><b><u>Preparing work progress records:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of preparing work progress records</li> <li>• Why and when of preparing work progress records</li> <li>• Principle and procedure for preparing work progress records</li> <li>• Preparing work progress records</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
11	Submit records/reports to the concerned	<p><b><u>Submitting records/reports to the concerned:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of submitting records/reports to the concerned</li> <li>• Why and when of submitting records/reports to the concerned</li> </ul>	0.1	0.2	0.3

		<ul style="list-style-type: none"> <li>• Principle and procedure for submitting records/reports to the concerned</li> <li>• Submitting records/reports to the concerned</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
	<b>Sub-total:</b>		<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
<b>Sub-module:5: Growing professionally</b>					
	<b>Description:</b> It deals with the knowledge and skills related to growing professionally necessary for supervising local roads				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>• To attend meetings/ seminars/workshops</li> <li>• To consult experts</li> <li>• To consult professional books/manuals/literature</li> <li>• To participate in professional organizations</li> <li>• To follow professional rules/regulations/ethics</li> <li>• To consult professional journals/magazine</li> <li>• To discuss with peers</li> <li>• To attend professional trainings</li> <li>• To seek/attend for higher education</li> <li>• To browse www</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>3hrs. = 1hrs,(Th,) + 2hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Attend meetings/ seminars/work shops	<u><b>Attending meetings/ seminars/workshops:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of attending meetings/ seminars/workshops</li> <li>• Why and when of attending meetings/ seminars/workshops</li> <li>• Principle and procedure for attending meetings/ seminars/workshops</li> <li>• Attending meetings/ seminars/workshops</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
2	Consult experts	<u><b>Consulting with experts:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of consulting with experts</li> <li>• Why and when of consulting with experts</li> <li>• Principle and procedure for consulting with experts</li> <li>• Consulting with experts</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
3	Consult professional books/manuals	<u><b>Consulting professional books/manuals/literature:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of consulting professional books/manuals/literature</li> <li>• Why and when of consulting professional books/manuals/literature</li> <li>• Principle and procedure for consulting professional books/manuals/literature</li> </ul>	0.1	0.2	0.3

		<ul style="list-style-type: none"> <li>• Consulting professional books/manuals/literature</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
4	Participate in professional organizations	<p><b><u>Participating in professional organizations:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of participating in professional organizations</li> <li>• Why and when of participating in professional organizations</li> <li>• Principle and procedure for participating in professional organizations</li> <li>• Participating in professional organizations</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
5	Follow professional rules/regulations/ethics	<p><b><u>Following professional rules/regulations/ethics:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of following professional rules/regulations/ethics</li> <li>• Why and when of following professional rules/regulations/ethics</li> <li>• Principle and procedure for following professional rules/regulations/ethics</li> <li>• Following professional rules/regulations/ethics</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
6	Consult professional journals/magazine	<p><b><u>Consulting professional journals/magazine:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of consulting professional journals/magazine</li> <li>• Why and when of consulting professional journals/magazine</li> <li>• Principle and procedure for consulting professional journals/magazine</li> <li>• Consulting professional journals/magazine</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
7	Discuss with peers	<p><b><u>Discussing with peers:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of discussing with peers</li> <li>• Why and when of discussing with peers</li> <li>• Principle and procedure for discussing with peers</li> <li>• Discussing with peers</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
8	Attend professional trainings	<p><b><u>Attending professional trainings:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of attending professional trainings</li> <li>• Why and when of attending professional trainings</li> </ul>	0.1	0.2	0.3

		<ul style="list-style-type: none"> <li>• Principle and procedure for attending professional trainings</li> <li>• Attending professional trainings</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
9	Seek/attend for higher education	<p><b>Seeking/attending for higher education:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of seeking/attending for higher education</li> <li>• Why and when of seeking/attending for higher education</li> <li>• Principle and procedure for seeking/attending for higher education</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
10	Browse www	<p><b>Browsing www:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of browsing www</li> <li>• Why and when of</li> <li>• Principle and procedure for</li> <li>• Browsing www</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.2	0.3
<b>Sub-total:</b>			<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
<b>Sub-module:6: Developing entrepreneurial skills</b>					
<b>Description:</b> It deals with the knowledge and skills related to developing entrepreneurial skills necessary for supervising local roads.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To develop small business planning skills</li> <li>• To develop small business organizing skills</li> <li>• To develop small business direction skills</li> <li>• To develop small business controlling skills</li> <li>• To prepare a small business plan</li> <li>• To prepare a budget for a small business</li> </ul>					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>3hrs. = 1hrs,(Th,) + 2hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Develop small business planning skills	<p><b>Developing small business planning skills:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of developing small business planning skills</li> <li>• Why and when of developing small business planning skills</li> <li>• Principle and procedure for developing small business planning skills</li> <li>• Developing small business planning skills</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.3	0.4



2	Develop small business organizing skills	<p><b><u>Developing small business organizing skills:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of developing small business organizing skills</li> <li>• Why and when of developing small business organizing skills</li> <li>• Principle and procedure for developing small business organizing skills</li> <li>• Developing small business organizing skills</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.1	0.3	0.4
3	Develop small business direction skills	<p><b><u>Developing small business direction skills:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of developing small business direction skills</li> <li>• Why and when of developing small business direction skills</li> <li>• Principle and procedure for developing small business direction skills</li> <li>• Developing small business direction skills</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.3	0.4
4	Develop small business controlling skills	<p><b><u>Developing small business controlling skills:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of developing small business controlling skills</li> <li>• Why and when of developing small business controlling skills</li> <li>• Principle and procedure for developing small business controlling skills</li> <li>• Developing small business controlling skills</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.3	0.4
5	Prepare a small business plan	<p><b><u>Preparing a small business plan:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of preparing a small business plan</li> <li>• Why and when of preparing a small business plan</li> <li>• Principle and procedure for preparing a small business plan</li> <li>• Preparing a small business plan</li> <li>• Precautions to be taken while carrying out this task</li> </ul>	0.2	0.4	0.6

		<ul style="list-style-type: none"> <li>• Keeping records of the activities related to this task</li> </ul>			
6	Prepare a budget for a small business	<p><b>Preparing a budget for a small business:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of preparing a budget for a small business</li> <li>• Why and when of preparing a budget for a small business</li> <li>• Principle and procedure for preparing a budget for a small business</li> <li>• Preparing a budget for a small business</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.4	0.6
	<b>Sub-total:</b>		<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
<b>Modules 13: Basic Civil Lab</b>					
	<b>Description:</b> It deals with the knowledge and skills related to testing and Quality insurance of Engineering materials.				
	<b>Objectives:</b>				
	<ul style="list-style-type: none"> <li>· To know about Test of material for engineering works</li> <li>· To know about Hydraulics Practical (Laboratory)</li> <li>· To know about Soil Mechanics (Practical/ Laboratory)</li> <li>· To know about Water supply (Practical)</li> </ul>				
	<b>Sub-modules:</b>				
	<ul style="list-style-type: none"> <li>I. Test of material for engineering works</li> <li>II. Hydraulics Practical (Laboratory)</li> <li>III. Soil Mechanics (Practical/ Laboratory)</li> <li>IV. Water supply (Practical)</li> </ul>				
	<b>Sub-module:1: Test of material for engineering works</b>				
	<b>Description:</b> It deals with the knowledge and skills related to materials used in construction work				
	<b>Objectives:</b>				
	<ul style="list-style-type: none"> <li>· To know about the Quality, Durability, Life-span and strength of the materials used in construction works</li> </ul>				
	<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.				
		<b>22hrs. = 4hrs,(Th,) + 18hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Perform fineness test of cement	<ul style="list-style-type: none"> <li>• Concept &amp; process of test procedure</li> </ul>	0.2	1.0	1.2
2	Perform Consistency test of cement	<ul style="list-style-type: none"> <li>• Concept &amp; process of test procedure</li> </ul>	0.2	1.0	1.2
3	Determine initial and final setting time cement	<ul style="list-style-type: none"> <li>• Concept &amp; process of test procedure</li> </ul>	0.3	1.0	1.3
4	Perform Compressive test of cement	<ul style="list-style-type: none"> <li>• Concept &amp; process of test procedure</li> </ul>	0.3	1.0	1.3
5	Perform Tensile test of cement	<ul style="list-style-type: none"> <li>• Concept &amp; process of test procedure</li> </ul>	0.3	1.0	1.3
6	Perform Bulking Test of sand	<ul style="list-style-type: none"> <li>• Concept &amp; process of test procedure</li> </ul>	0.3	1.0	1.3
7	Perform Slump test	<ul style="list-style-type: none"> <li>• Concept &amp; process of test procedure</li> </ul>	0.3	1.0	1.3

8	Perform Compressive strength test of local and machine made bricks	• Concept & process of test procedure	0.3	1.0	1.3
9	Perform Compressive strength test of Concrete/ hollow bricks	• Concept & process of test procedure	0.3	1.0	1.3
10	Observe effect of water cement ratio on concrete	• Concept & process of test procedure	0.3	1.0	1.3
11	Perform Loss angles Abrasion Test of Aggregate	• Concept & process of test procedure	0.3	1.5	1.8
12	Perform Aggregate impact test of Aggregate	• Concept & process of test procedure	0.3	1.5	1.8
13	Perform California bearing test of soil	• Concept & process of test procedure	0.3	2.5	2.8
14	Perform penetration, softening point, ductility and viscosity test of bitumen	• Concept & process of test procedure	0.3	2.5	2.8
<b>Sub-total:</b>			<b>4.0</b>	<b>18.0</b>	<b>22.0</b>
<b>Sub-module:2: Hydraulics Practical (Laboratory)</b>					
<b>Description:</b> It deals with the knowledge and skills related to Hydraulics					
<b>Objectives:</b> · To know about the Quality, and properties of Hydraulics					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>22hrs. = 4hrs,(Th,) + 18hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Measure pressure by y Piezometer and U-tube manometer	• Concept & process of test procedure	0.5	1.3	1.8
2	Verify Bernoulli's theorem using Venturimeter	• Concept & process of test procedure	0.5	1.7	2.2
3	Measure flow through Orifice	• Concept & process of test procedure	0.5	2.5	3.0
4	Measure river discharge by float method	• Concept & process of test procedure	0.5	2.5	3.0
<b>Sub-total:</b>			<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
<b>Sub-module:3: Soil Mechanics (Practical/ Laboratory)</b>					
<b>Description:</b> It deals with the knowledge and skills related to Soil and Soil properties					
<b>Objectives:</b> · To know about the Quality, and properties of soil for construction works					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>8hrs. = 1hrs,(Th,) + 7hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Perform Sieve analysis of Coarse grained soil	• Concept & process of test procedure	0.1	1.1	1.2

2	Determine specific gravity by Pycnometer method	• Concept & process of test procedure	0.1	1.1	1.2
3	Determine liquid limit and plastic limit	• Concept & process of test procedure	0.1	1.1	1.2
4	Determine field density by sand replacement method and core cutter method	• Concept & process of test procedure	0.1	1.1	1.2
5	Perform Compaction and Standard Proctor test	• Concept & process of test procedure	0.2	1.1	1.3
6	Perform direct shear test	• Concept & process of test procedure	0.2	1.0	1.2
7	Perform Unconfined Compression test	• Concept & process of test procedure	0.2	1.1	1.3
<b>Sub-total:</b>			<b>1.0</b>	<b>7.0</b>	<b>8.0</b>
<b>Sub-module:4: Water supply (Practical)</b>					
<b>Description:</b> It deals with the knowledge and skills related to Water and Water properties					
<b>Objectives:</b> · To know about the Quality, and properties of water					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>4hrs. = 1hrs,(Th,) + 3hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>
1	Determine physical parameter (Color, Odor, Turbidity, Temperature)	• Concept & process of test procedure	0.2	0.6	0.8
2	Determine PH value of water	• Concept & process of test procedure	0.2	0.6	0.8
3	Perform total solid	• Concept & process of test procedure	0.2	0.6	0.8
4	Determine dissolved Oxygen	• Concept & process of test procedure	0.2	0.6	0.8
5	Measure flow by velocity area method	• Concept & process of test procedure	0.2	0.6	0.8
<b>Sub-total:</b>			<b>1.0</b>	<b>3.0</b>	<b>4.0</b>
<b>Modules 14: Social Mobilization</b>					
<b>Description:</b> It deals with the knowledge and skills related to social mobilization necessary for supervising local Roads.					
<b>Objectives:</b> · To facilitate to form users committee · To prepare participation schedule · To facilitate to form users' group · To facilitate to minute decisions · To facilitate users' committee meetings · To motivate users for participation · To facilitate to carry out public audit · To facilitate to minimize conflict					
<b>Tasks:</b> Each task consists of related technical knowledge and time allocation for both the theoretical and practical aspects of it.					
		<b>10hrs. = 3hrs,(Th,) + 7hrs,(Pr,)</b>	<b>Time (hours)</b>		
<b>S. N.</b>	<b>Task statements</b>	<b>Related technical knowledge</b>	<b>Th.</b>	<b>Pr.</b>	<b>Total</b>

1	Facilitate to form users committee	<p><b><u>Facilitating to form users committee:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of facilitating to form users committee</li> <li>• Why and when of facilitating to form users committee</li> <li>• Principle and procedure for facilitating to form users committee</li> <li>• Facilitating to form users committee</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
2	Prepare participation schedule	<p><b><u>Preparing participation schedule:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of preparing participation schedule</li> <li>• Why and when of preparing participation schedule</li> <li>• Principle and procedure for preparing participation schedule</li> <li>• Preparing participation schedule</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.2	0.5	0.7
3	Facilitate to form users' group	<p><b><u>Facilitating to form users' group:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of facilitating to form users' group</li> <li>• Why and when of facilitating to form users' group</li> <li>• Principle and procedure for facilitating to form users' group</li> <li>• Facilitating to form users' group</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.0	1.3
4	Facilitate to minute decisions	<p><b><u>Facilitating to minute decisions:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of facilitating to minute decisions</li> <li>• Why and when of facilitating to minute decisions</li> <li>• Principle and procedure for facilitating to minute decisions</li> <li>• Facilitating to minute decisions</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.3	1.0	1.3
5	Facilitate users' committee meetings	<p><b><u>Facilitating users' committee meetings:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of facilitating users' committee meetings</li> <li>• Why and when of facilitating users' committee meetings</li> <li>• Principle and procedure for facilitating users' committee meetings</li> </ul>	0.5	1.0	1.5

		<ul style="list-style-type: none"> <li>• Facilitating users' committee meetings</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>			
6	Motivate users for participation	<p><b>Motivating users for participation:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of motivating users for participation</li> <li>• Why and when of motivating users for participation</li> <li>• Principle and procedure for motivating users for participation</li> <li>• Motivating users for participation</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	1.0	1.5
7	Facilitate to carry out public audit	<p><b>Facilitating to carry out public audit:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of facilitating to carry out public audit</li> <li>• Why and when of facilitating to carry out public audit</li> <li>• Principle and procedure for facilitating to carry out public audit</li> <li>• Facilitating to carry out public audit</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	1.0	1.5
8	Facilitate to minimize conflict	<p><b>Facilitating to minimize conflict:</b></p> <ul style="list-style-type: none"> <li>• Concept and importance of facilitating to minimize conflict</li> <li>• Why and when of facilitating to minimize conflict</li> <li>• Principle and procedure for facilitating to minimize conflict</li> <li>• Facilitating to minimize conflict</li> <li>• Precautions to be taken while carrying out this task</li> <li>• Keeping records of the activities related to this task</li> </ul>	0.5	1.0	1.5
	<b>Sub-total:</b>		<b>3</b>	<b>7</b>	<b>10</b>
	<b>OJT</b>			<b>75</b>	
	<b>All total:</b>		<b>100</b>	<b>450</b>	<b>550</b>

**Appendices**  
**Modules, sub-modules, tasks and time allocation**

		Tasks		Time (hours)			
		S.N.					
Modules	Sub-modules	1.	Handle measuring tape	0.1	0.4	0.5	
<b>1. Tools, materials, equipment, and safety</b>	1. Tools, materials and equipment	2.	Handle pedometer	0.2	0.8	1.0	
		3.	Handle altimeter	0.2	0.8	1.0	
		4.	Level pipe/sprit level	0.2	0.8	1.0	
			5.	Handle surveyor compass	0.2	0.8	1.0
			6.	Handle Abney level	0.2	0.8	1.0
			7.	Handle auto level	0.2	0.8	1.0
			8.	Handle calculator	0.1	0.4	0.5
			9.	Operate computer	0.3	1.2	1.5
			10.	Apply global positioning system	0.2	0.8	1.0
			11.	Handle wheel barrow	0.1	0.4	0.5
				Sub-total:	<b>2.0</b>	<b>8.0</b>	<b>10</b>
	2. Enforcing safety rules	1.	Maintain first aid kit box	0.1	0.4	0.5	
		2.	Perform simple/common first aids	0.1	0.4	0.5	
		3.	Enforce safety wares	0.1	0.4	0.5	
		4.	Maintain accidental records	0.2	0.8	1.0	
		5.	Orient/inform about possible risks/hazards	0.1	0.4	0.5	
		6.	Enforce to follow traffic signals	0.2	0.8	1.0	
		7.	Apply fire safety measures	0.2	0.8	1.0	
			Sub-total:	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>	
<b>2. Basic Drawing with Auto-cad</b>	1. Basic Engineering Drawing	1.	handle drawing tools	1.0	4.0	5.0	
		2.	handle drawing scale	1.0	5.0	6.0	
		3.	Construct geometric figures	1.0	9.0	10.0	

		4.	Draw engineering structures	2.0	9.0	11.0
			<b>Sub-total:</b>	<b>5.0</b>	<b>27.0</b>	<b>32.0</b>
	2. Auto-cad	1.	Handle commands and tools of auto-cad	1.0	6.0	7.0
		2.	Handle dimensioning tools	1.0	7.0	8.0
		3.	Construct geometric figures	2.0	9.0	11.0
		4.	Draw engineering structures	3.0	11.0	14.0
			<b>Sub-total:</b>	<b>7.0</b>	<b>33.0</b>	<b>40</b>
3. Basic Computer	1. Hardware component	1.	Draw computer block diagram	0.2	0.3	0.5
		2.	Draw hard disk block diagram	0.2	0.5	0.8
		3.	Draw motherboard block diagram	0.2	0.2	0.4
		4.	Draw RAM block diagram	0.2	0.5	0.7
		5.	Clean RAM	0.2	0.5	0.7
			<b>Sub-total:</b>	<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
	2. Application Software	1.	Editing text in Microsoft word	0.2	1.0	1.2
		2.	Formatting document in Microsoft word	0.3	2.0	2.3
		3.	Creating table in Microsoft word	0.3	2.0	2.3
		4.	Prepare slide in Microsoft PowerPoint	0.3	2.0	2.3
		5.	Editing worksheet in Microsoft Excel	0.3	2.0	2.3
		6.	Prepare charts in Microsoft Excel	0.3	2.0	2.3
		7.	Import/Export data in Microsoft Excel	0.3	1.5	1.8
			<b>Sub-total:</b>	<b>2.0</b>	<b>12.5</b>	<b>14.5</b>
	3. Anti-Virus	1.	General Introduction & Antivirus Utilities	0.5	2.0	2.5
		2.	Scan PC	0.5	2.0	2.5
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
	4. E-mail & Internet	1.	Create email account	1.0	2.5	3.5



		2.	Create Facebook account	1.0	3.0	4.0
		3.	Create Zoom account	1.0	4.0	5.0
		4.	Change password	1.0	4.0	5.0
			<b>Sub-total:</b>	<b>4.0</b>	<b>13.5</b>	<b>17.5</b>
<b>4. Construction Supervision</b>	<b>1. Types of wall construction</b>	1.	Construct & supervise different type of wall	1.0	4.0	5.0
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
	<b>2. Types of Footing</b>	1.	Construct footing of wall & column	1.0	4.0	5.0
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
	<b>3. Bar binding</b>	1.	Cut & measure the bars	0.2	0.5	0.7
		2.	Bend the bars.	0.3	0.5	0.8
		3.	Lay the bars.	0.2	1.5	1.7
		4.	Bind bars required in the construction according to the design	0.3	1.5	1.8
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
	<b>4. Beam &amp; Column construction</b>	1.	Read the drawing	0.2	1.0	1.2
		2.	Provide the reinforcement to beam & column	0.3	1.3	1.6
		3.	Layout the beam & column construction	0.5	1.7	2.2
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
	<b>5. Scaffolding, shuttering &amp; Retrofitting</b>	1.	Cut & measure the supports	0.2	1.0	1.2
		2.	Construct Scaffolding, shuttering & Retrofitting	0.5	2.0	2.5
		3.	Construct supports & joints of Scaffolding, shuttering & Retrofitting	1.0	2.0	3.0
			<b>Sub-total:</b>	<b>1.7</b>	<b>5.0</b>	<b>6.7</b>
	<b>6. Ratio of mortar &amp; grade of concrete mix</b>	1.	Prepare the mortar	0.2	1.0	1.2
		2.	Prepare grade of	0.3	1.0	1.3

			concrete mix			
		3.	Mix the mortar	0.5	2.0	2.5
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
	7. House wiring	1.	Use appliances & tools used in house wiring	0.2	1.0	1.2
		2.	Fit to the Position of fittings	0.3	1.0	1.3
		3.	Connect the wires	0.5	2.0	2.5
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
	8. Plumbing	1.	Use the appliances & tools used in plumbing work	0.2	0.5	0.7
		2.	Fit to the Position of fittings	0.2	0.5	0.7
		3.	Cut the pipes & fittings	0.3	1.5	1.8
		4.	Connect the pipes & fittings	0.3	1.5	1.8
			<b>Sub-total:</b>	<b>1.0</b>	<b>4.0</b>	<b>5.0</b>
5. Field survey		1.	Assist to fix Road Alignment	1.0	3.0	4.0
		2.	Assist to fix Road Centre	1.0	3.0	4.0
		3.	Measure tentative Road Length	1.0	4.0	5.0
		4.	Assist to Conduct L-section Survey	1.0	8.0	9.0
		5.	Assist to conduct cross-section Survey	1.0	3.0	4.0
		6.	Assist to fix Reference Points	1.0	3.0	4.0
		7.	Fix Bench mark	0.5	3.0	3.5
		8.	Assist to investigate obligatory points	0.5	3.0	3.5
		9.	Assist to conduct Traverse Survey	0.5	3.0	3.5
		10.	Conduct Labor Availability Survey	1.0	4.0	5.0

		11.	Conduct Local Construction Materials Survey	0.5	3.0	3.5	
		12.	Assist to conduct Household Survey	0.5	2.0	2.5	
		13.	Assist to perform cadastral Survey	0.5	2.0	2.5	
		14.	Perform Traffic/vehicle count	1.0	2.0	3.0	
		15.	Count trees/cross-drainage hard rock	1.0	2.0	3.0	
			<b>Sub-total:</b>	<b>12.0</b>	<b>48.0</b>	<b>60.0</b>	
<b>6. Estimating &amp; Costing</b>	1. Calculations/estimations	1.	Calculate area of various geometrical figures	0.2	1.5	1.7	
		2.	Calculate volume of various geometrical figures	0.3	1.5	1.8	
			3.	Use government norms/rates	0.5	3.0	3.5
			4.	Read/interpret specifications	1.0	5.0	6.0
			5.	Estimate/cost materials	2.0	5.0	7.0
			6.	Estimate/cost equipment/tools	1.0	4.0	5.0
			7.	Estimate human resources	1.0	4.0	5.0
				<b>Sub-total:</b>	<b>6</b>	<b>24</b>	<b>30</b>
		2. Drawings /sketches	1.	Prepare drawing/sketch of Rectangular section	0.3	1.0	1.3
	2.		Prepare sketch/drawing of Trapezoidal section	0.3	1.0	1.3	
	3.		Read/Interpret plan of road alignment	0.3	1.0	1.3	
	4.		Read/Interpret section of road alignment	0.2	1.0	1.2	
	5.		Read/Interpret deviation of geometrical figures	0.3	1.0	1.3	
	6.		Prepare sketch/drawings of triangular section	0.3	1.2	1.5	

		7.	Prepare sketches/drawings of circular section	0.3	1.8	2.1
			<b>Sub-total:</b>	<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
	3. E-bidding	1.	Prepare E-bidding	2.0	8.0	10.0
			<b>Sub-total:</b>	<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
7. Setting out/layout		1.	Prepare check list	0.5	2.0	2.5
		2.	Collect/Identify tools/equipment/materials	0.5	2.0	2.5
		3.	Perform Measurements	0.5	2.0	2.5
		4.	Apply 3-4-5 method of layout	0.5	2.0	2.5
		5.	Perform setting out of centerline (road alignment)	0.5	2.0	2.5
		6.	Perform setting out of formation width	0.5	2.0	2.5
		7.	Perform setting out of retaining/breast walls	0.5	2.0	2.5
		8.	Perform setting out of cross drainage structures	0.5	2.0	2.5
		9.	Perform setting out of bio engineering works	0.5	2.0	2.5
		10.	Locate road centerline	0.5	2.0	2.5
			<b>Sub-total:</b>	<b>5.0</b>	<b>20.0</b>	<b>25.0</b>
8. Supervising road Construction	1. Supervising earth road construction	1.	Perform site clearance	0.25	0.6	0.85
		2.	Supervise top soil removal work	0.25	0.6	0.85
		3.	Perform benching	0.25	0.6	0.85
		4.	Maintain borrow pit	0.25	0.6	0.85
		5.	Maintain fill/cut slopes	0.25	0.6	0.85
		6.	Manage safe disposal of surplus materials	0.25	0.6	0.85
		7.	Maintain Formation width	0.25	1.0	1.25
		8.	Maintain camber/upper elevation (S.E.)	0.25	1.2	1.45
		9.	Maintain longitudinal slope/grade	0.25	1.2	1.45

		10.	Maintain vertical curves	0.25	1.5	1.75
		11.	Maintain horizontal curves	0.25	1.5	1.75
		12.	Maintain compaction density	0.25	2.0	2.25
			<b>Sub-total:</b>	<b>3.0</b>	<b>12.0</b>	<b>15.0</b>
	2. Supervising gravel road construction	1.	Control Traffic	0.5	2.0	2.5
		2.	Maintain gravel sizing	0.5	1.5	2.7
		3.	Maintain compaction	0.5	1.5	2.7
		4.	Maintain thickness	0.3	1.5	2.6
		5.	Maintain edging	0.2	1.5	2.5
				<b>Sub-total:</b>	<b>2.0</b>	<b>8.0</b>
	3. Supervising metaled road construction	1.	Maintain penetration macadam work.	0.5	2.5	3.0
		2.	Maintain ottaseal	0.5	2.5	3.0
		3.	Maintain asphalt concrete work	0.5	3.0	3.5
		4.	Maintain single surface treatment work	0.5	3.0	3.5
		5.	Maintain double surface treatment work	1.0	3.0	4.0
		6.	Maintain concrete pavement	1.0	2.0	3.0
		7.	Maintain sand seal	0.5	2.0	2.5
		8.	Maintain stone soling pavement	0.5	2.0	2.5
			<b>Sub-total:</b>	<b>5.0</b>	<b>20.0</b>	<b>25.0</b>
9. Supervising wall, drainage and drain	1. Supervising wall construction					
		1.	Layout walls	0.2	0.6	0.8
		2.	Maintain foundation excavation	0.2	0.6	0.8
		3.	Maintain soling work	0.2	0.6	0.8
		4.	Maintain foundation PCC/RCC work	0.2	0.6	0.8
		5.	Maintain Construction joints	0.2	0.6	0.8
		6.	Maintain weep hole	0.2	0.6	0.8
		7.	Maintain filter materials	0.2	0.6	0.8

		8.	Maintain wall dimension	0.2	0.6	0.8
		9.	Maintain retaining walls	0.2	0.6	0.8
		10.	Maintain breast wall	0.2	0.6	0.8
		11.	Maintain toe wall	0.2	0.8	1.0
		12.	Maintain revetment wall	0.2	0.8	1.0
		13.	Maintain dry/masonry /composite walls	0.2	0.8	1.0
		14.	Maintain gabion wall/construction	0.2	0.8	1.0
		15.	Maintain gabion crate/box weaving	0.2	0.8	1.0
			<b>Sub-total:</b>	<b>3.0</b>	<b>10.0</b>	<b>13.0</b>
	<b>2. Supervising cross drainage construction</b>	1.	Assist for layout	0.2	0.5	0.7
		2.	Maintain foundation excavation	0.2	0.5	0.7
		3.	Manage dewatering /diversion of water	0.2	0.5	0.7
		4.	Maintain line/level of formwork	0.2	0.5	0.7
		5.	Inspect staging	0.2	0.5	0.7
		6.	Maintain line level of sub-structure	0.2	0.5	0.7
		7.	Maintain line level of superstructure	0.2	0.5	0.7
		8.	Maintain line/level of formwork	0.3	0.5	0.8
		9.	Maintain protection works	0.3	1.0	1.3
			<b>Sub-total:</b>	<b>2.0</b>	<b>5.0</b>	<b>7.0</b>
	<b>3. Supervising roadside drain construction</b>	1.	Layout for roadside drain	0.2	0.5	0.7
		2.	Assure/monitor quality of concrete work	0.2	0.5	0.7
		3.	Maintain dimension of masonry work	0.2	0.5	0.7
		4.	Maintain dimensions/slopes	0.2	0.5	0.7
		5.	Supervise plastering	0.2	0.5	0.7
		6.	Supervise curving	0.2	0.5	0.7
		7.	Maintain surface/sub-surface drainage	0.3	0.5	2.0
			<b>Sub-total:</b>	<b>1.5</b>	<b>3.5</b>	<b>5.0</b>

10. Supervising bio-engineering works		1.	Supervise preparation of live stakes grass slips	0.4	1.0	1.4
		2.	Perform layout	0.4	1.6	2.0
		3.	Supervise plantation work	0.4	1.6	2.0
		4.	Supervise caring of plants	0.4	1.6	2.0
		5.	Protect plants	0.4	2.2	2.6
			<b>Sub-total:</b>	<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
11. Road maintenance works		1.	Supervise routine maintenance	0.6	2.4	3.0
		2.	Supervise recurrent maintenance	0.6	2.4	3.0
		3.	Supervise periodic maintenance	0.6	2.4	3.0
		4.	Supervise emergency maintenance	0.6	2.4	3.0
		5.	Supervise rehabilitation maintenance	0.6	2.4	3.0
			<b>Sub-total:</b>	<b>3.0</b>	<b>12</b>	<b>15</b>
12. Construction Management	1. Managing construction works	1.	Prepare/follow schedule	0.1	0.3	0.4
		2.	Manage labor force/road building groups	0.1	0.3	0.4
		3.	Manage materials	0.2	0.3	0.5
		4.	Manage machine	0.2	0.3	0.5
		5.	Manage money	0.2	0.3	0.5
		6.	Manage minute/document	0.2	0.5	0.7
			<b>Sub-total:</b>	<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
	2. Managing health/environment	1.	Maintain waste disposal system	0.1	0.2	0.3
		2.	Manage safe/healthy drinking water	0.1	0.2	0.3
		3.	Be familiar with communicable diseases	0.1	0.2	0.3

		4.	Create safe working environment	0.1	0.2	0.3
		5.	Be familiar with the management of HIV/STD	0.1	0.2	0.3
		6.	Minimize noise/dust pollution	0.1	0.2	0.3
		7.	Enforce to manage quarry site	0.2	0.3	0.5
		8.	Facilitate to dispose unwanted oil	0.2	0.5	0.7
			<b>Sub-total:</b>	<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
	<b>3. Communicating with others</b>	1.	Make telephone calls	0.1	0.2	0.3
		2.	Receive telephone calls	0.1	0.2	0.3
		3.	Write letters	0.1	0.2	0.3
		4.	Write simple reports	0.1	0.2	0.3
		5.	Communicate with seniors	0.1	0.2	0.3
		6.	Communicate with juniors/labors	0.1	0.2	0.3
		7.	Communicate with peers	0.1	0.2	0.3
		8.	Communicate with contractors	0.1	0.2	0.3
		9.	Communicate with users' committee	0.1	0.2	0.3
		10.	Communicate with user's group	0.1	0.2	0.3
			<b>Sub-total:</b>	<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
	<b>4. Maintaining records</b>	1.	Keep records of attendance	0.05	0.1	0.15
		2.	Maintain muster roll	0.05	0.1	0.15
		3.	Keep records of tools/equipment/materials used	0.1	0.2	0.3
		4.	Maintain log book	0.1	0.2	0.3
		5.	Maintain simple A/C books	0.1	0.2	0.3
		6.	Identify/facilitate to apply various formats of records	0.1	0.2	0.3
		7.	Maintain records of applied fire safety measures	0.1	0.2	0.3



		8.	Maintain daily diary	0.1	0.2	0.3
		9.	Keep records of work progress	0.1	0.2	0.3
		10.	Prepare work progress records	0.1	0.2	0.3
		11.	Submit records/reports to the concerned	0.1	0.2	0.3
			<b>Sub-total:</b>	<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
	5. Growing professionally	1.	Attend meetings/ seminars/work shops	0.1	0.2	0.3
		2.	Consult experts	0.1	0.2	0.3
		3.	Consult professional books/manuals	0.1	0.2	0.3
		4.	Participate in professional organizations	0.1	0.2	0.3
		5.	Follow professional rules/regulations/ethics	0.1	0.2	0.3
		6.	Consult professional journals/magazine	0.1	0.2	0.3
		7.	Discuss with peers	0.1	0.2	0.3
		8.	Attend professional trainings	0.1	0.2	0.3
		9.	Seek/attend for higher education	0.1	0.2	0.3
		10.	Browse www	0.1	0.2	0.3
			<b>Sub-total:</b>	<b>1.0</b>	<b>2.0</b>	<b>3.0</b>
	6. Developing entrepreneurial skills	1.	Develop small business planning skills	0.1	0.3	0.4
		2.	Develop small business organizing skills	0.1	0.3	0.4
		3.	Develop small business direction skills	0.2	0.3	0.4
		4.	Develop small business controlling skills	0.2	0.3	0.4
		5.	Prepare a small business plan	0.2	0.4	0.6
		6.	Prepare a budget for a small business	0.2	0.4	0.6
			<b>Sub-total:</b>	<b>1.0</b>	<b>2.0</b>	<b>3.0</b>

<b>13. Basic Civil Lab</b>	<b>1. Test of material for engineering works</b>	1.	Perform Fineness test of cement	0.2	1.0	1.2	
		2.	Perform Consistency test of cement	0.2	1.0	1.2	
		3.	Determine initial and final setting time cement	0.3	1.0	1.3	
			4.	Perform Compressive test of cement	0.3	1.0	1.3
			5.	Perform Tensile test of cement	0.3	1.0	1.3
			6.	Perform Bulking Test of sand	0.3	1.0	1.3
			7.	Perform Slump test	0.3	1.0	1.3
			8.	Perform Compressive strength test of local and machine made bricks	0.3	1.0	1.3
			9.	Perform Compressive strength test of Concrete/ hollow bricks	0.3	1.0	1.3
			10.	Observe effect of water cement ratio on concrete	0.3	1.0	1.3
			11.	Perform Loss angles Abrasion Test of Aggregate	0.3	1.5	1.8
			12.	Perform Aggregate impact test of Aggregate	0.3	1.5	1.8
			13.	Perform California bearing test of soil	0.3	2.5	2.8
			14.	Perform penetration, softening point, ductility and viscosity test of bitumen	0.3	2.5	2.8
			<b>Sub-total:</b>	<b>4.0</b>	<b>18.0</b>	<b>22.0</b>	
	<b>2. Hydraulics Practical (Laboratory)</b>	1.	Measure pressure by $\gamma$ Piezometer and U-tube manometer	0.5	1.3	1.8	
		2.	Verify Bernoulli's theorem using Venturimeter	0.5	1.7	2.2	
		3.	Measure flow through Orifice	0.5	2.5	3.0	

		4.	Measure river discharge by float method	0.5	2.5	3.0
			<b>Sub-total:</b>	<b>2.0</b>	<b>8.0</b>	<b>10.0</b>
	<b>3. Soil Mechanics (Practical/ Laboratory)</b>	1.	Perform Sieve analysis of Coarse grained soil	0.1	1.1	1.2
		2.	Determine specific gravity by Pyconometer method	0.1	1.1	1.2
		3.	Determine liquid limit and plastic limit	0.1	1.1	1.2
		4.	Determine field density by sand replacement method and core cutter method	0.1	1.1	1.2
		5.	Perform Compaction and Standard Proctor test	0.2	1.1	1.3
		6.	Perform direct shear test	0.2	1.0	1.2
		7.	Perform Unconfined Compression test	0.2	1.1	1.3
			<b>Sub-total:</b>	<b>1.0</b>	<b>7.0</b>	<b>8.0</b>
	<b>4. Water supply (Practical)</b>	1.	Determine physical parameter (Color, Odor, Turbidity, Temperature)	0.2	0.6	0.8
		2.	Determine PH value of water	0.2	0.6	0.8
		3.	Perform total solid	0.2	0.6	0.8
		4.	Determine dissolved Oxygen	0.2	0.6	0.8
		5.	Measure flow by velocity area method	0.2	0.6	0.8
			<b>Sub-total:</b>	<b>1.0</b>	<b>3.0</b>	<b>4.0</b>
<b>14. Social Mobilization</b>		1.	Facilitate to form users committee	0.2	0.5	0.7
		2.	Prepare participation schedule	0.2	0.5	0.7
		3.	Facilitate to form users' group	0.3	1.0	1.3
		4.	Facilitate to minute decisions	0.3	1.0	1.3

		5.	Facilitate users' committee meetings	0.5	1.0	1.5
		6.	Motivate users for participation	0.5	1.0	1.5
		7.	Facilitate to carry out public audit	0.5	1.0	1.5
		8.	Facilitate to minimize conflict	0.5	1.0	1.5
			<b>Sub-total:</b>	<b>3</b>	<b>7</b>	<b>10</b>
			<b>Sub-total:</b>	100	375	475
			<b>OJT</b>		75	75
			<b>All total:</b>	<b>100</b>	<b>450</b>	<b>550</b>

## **List of duties and tasks: a product of job analysis**

### **Duty: A: Assist for Field Survey**

#### **Tasks:**

1. Assist to fix Road Alignment
2. Assist to fix Road Centre line
3. Measure tentative Road Length
4. Assist to Conduct L-section Survey
5. Assist to conduct cross-section Survey
6. Assist to fix Reference Points
7. Fix Bench mark
8. Assist to investigate obligatory points
9. Assist to conduct Traverse Survey
10. Conduct Labor Availability Survey
11. Conduct Local Construction Materials Survey
12. Assist to conduct Household Survey
13. Assist to perform cadastral Survey
14. Perform Traffic/vehicle count
15. Count trees/cross-drainage hard rock

### **Duty: B: Perform Simple Calculations/Estimations**

#### **Tasks:**

16. Calculate area/volume of various geometrical figures
17. Use government norms/rates
18. Read/interpret specifications
19. Estimate/cost materials
20. Estimate/cost equipment/tools
21. Estimate human resources

### **Duty: C: Read/Interpret/ prepare drawings /sketches**

#### **Tasks:**

22. Prepare drawing/sketch of Rectangular section
23. Prepare sketch/drawing of Trapezoidal section
24. Read/Interpret plan of road alignment
25. Read/Interpret section of road alignment
26. Read/Interpret deviation of geometrical figures
27. Prepare sketch/drawings of triangular section
28. Prepare sketches/drawings of circular section

### **Duty: D: Facilitate for Social Mobilization**

#### **Tasks:**

29. Facilitate to form users committee
30. Prepare participation schedule
31. Facilitate to form users' group
32. Facilitate to minute decisions
33. Facilitate users' committee meetings
34. Motivate users for participation

35. Facilitate to carry out public audit
36. Facilitate to minimize conflict

**Duty: E: Perform setting out/Layout**

**Tasks:**

37. Prepare check list
38. Collect/Identify tools/equipment/materials
39. Perform Measurements
40. Apply 3-4-5 method of layout
41. Perform setting out of centerline (road alignment)
42. Perform setting out of formation width
43. Perform setting out of retaining/breast walls
44. Perform setting out of cross drainage structures
45. Perform setting out of bio engineering works
46. Locate road centerline

**Duty: F: Supervise Earth Road Construction**

**Tasks:**

47. Perform site clearance
48. Supervise top soil removal work
49. Perform benching
50. Maintain borrow pit
51. Maintain fill/cut slopes
52. Manage safe disposal of surplus materials
53. Maintain Formation width
54. Maintain camber/upper elevation (S.E.)
55. Maintain longitudinal slope/grade
56. Maintain vertical curves
57. Maintain horizontal curves
58. Maintain compaction density

**Duty: G: Supervise wall Construction**

**Tasks:**

59. Layout walls
60. Maintain foundation excavation
61. Maintain soling work
62. Maintain foundation PCC/RCC work
63. Maintain Construction joints
64. Maintain weep hole

- 65. Maintain filter materials
- 66. Maintain wall dimension
- 67. Maintain retaining walls
- 68. Maintain breast wall
- 69. Maintain toe wall
- 70. Maintain revetment wall
- 71. Maintain dry/masonry/composite walls
- 72. Maintain gabion wall/construction
- 73. Maintain gabion crate/box weaving

**Duty: H: Supervise Cross Drainage Construction**

**Tasks:**

- 74. Assist for layout
- 75. Maintain foundation excavation
- 76. Manage dewatering dimension
- 77. Maintain line/level of formwork
- 78. Inspect staging
- 79. Maintain line level of sub-structure
- 80. Maintain line level of super-structure
- 81. Maintain line/level of formwork
- 82. Maintain protection works

**Duty: I: Supervise Roadside Drain Construction**

**Tasks:**

- 83. Layout for roadside drain
- 84. Assure/monitor quality of concrete work
- 85. Maintain dimension of masonry work
- 86. Maintain dimensions/slopes
- 87. Supervise plastering
- 88. Supervise curving
- 89. Maintain surface/sub-surface drainage

**Duty: J: Supervise Bio-engineering Works**

**Tasks:**

- 90. Supervise preparation of live stakes grass slips
- 91. Perform layout
- 92. Supervise plantation work
- 93. Supervise caring of plants
- 94. Protect plants

**Duty: K: Supervise Gravel Road Construction**

**Tasks:**

- 95. Control Traffic
- 96. Maintain gravel sizing
- 97. Maintain compaction

- 98. Maintain thickness
- 99. Maintain edging

**Duty: L: Supervise Metalled Road Construction**

**Tasks:**

- 100. Maintain penetration macadam work.
- 101. Maintain ottaseal
- 102. Maintain asphalt concrete work
- 103. Maintain single surface treatment work
- 104. Maintain double surface treatment work
- 105. Maintain concrete pavement
- 106. Maintain stone soling pavement

**Duty: M: Manage Construction Works**

**Tasks:**

- 107. Prepare/follow schedule
- 108. Manage labor force/road building groups
- 109. Manage materials
- 110. Manage machine
- 111. Manage money
- 112. Manage minute/document

**Duty: N: Handle/maintain tools/materials/equipment**

**Tasks:**

- 113. Handle measuring tape
- 114. Handle pedometer
- 115. Handle altimeter
- 116. Level pipe/sprit level
- 117. Handle surveyor compass
- 118. Handle Abney level
- 119. Handle auto level
- 120. Handle calculator
- 121. Operate computer
- 122. Apply global positioning system
- 123. Handle wheel barrow

**Duty: O: Manage Health/Environment**

**Tasks:**

- 124. Maintain waste disposal system
- 125. Manage safe/healthy drinking water
- 126. Be familiar with communicable diseases
- 127. Create safe working environment
- 128. Be familiar with the management of HIV/STD
- 129. Minimize noise/dust pollution
- 130. Enforce to manage quarry site
- 131. Facilitate to dispose unwanted oil



**Duty: P: Communicate with others**

**Tasks:**

- 132. Make telephone calls
- 133. Receive telephone calls
- 134. Write letters
- 135. Write simple reports
- 136. Communicate with seniors
- 137. Communicate with juniors/labors
- 138. Communicate with peers
- 139. Communicate with contractors
- 140. Communicate with users' committee
- 141. Communicate with user's group

**Duty: Q: Enforce Safety Rules**

**Tasks:**

- 142. Maintain first aid kit box
- 143. Perform simple/common first aids
- 144. Enforce safety wares
- 145. Maintain accidental records
- 146. Orient/inform about possible risks/hazards
- 147. Enforce to follow traffic signals
- 148. Apply fire safety measures

**Duty: R: Maintain Records**

**Tasks:**

- 149. Keep records of attendance
- 150. Maintain muster roll
- 151. Keep records of tools/equipment/materials used
- 152. Maintain log book
- 153. Maintain simple A/C books
- 154. Identify/facilitate to apply various formats of records
- 155. Apply fire safety measures
- 156. Maintain daily diary
- 157. Keep records of work progress
- 158. Prepare work progress records
- 159. Submit records/reports to the concerned

**Duty: S: Perform Road Maintenance Works**

**Tasks:**

- 160. Supervise routine maintenance
- 161. Supervise recurrent maintenance
- 162. Supervise periodic maintenance
- 163. Supervise emergency maintenance
- 164. Supervise rehabilitation maintenance

**Duty: T: Grow Professionally**

**Tasks:**

- 165. Attend meetings/seminars/workshops
- 166. Consult experts
- 167. Consult professional books/manuals
- 168. Participate in professional organizations
- 169. Follow professional rules/regulations/ethics
- 170. Consult professional journals/magazine
- 171. Discuss with peers
- 172. Attend professional trainings
- 173. Seek/attend for higher education
- 174. Browse www

**Duty: U: Develop Entrepreneurial Skills**

**Tasks:**

- 175. Develop small business planning skills
- 176. Develop small business organizing skills
- 177. Develop small business direction skills
- 178. Develop small business controlling skills
- 179. Prepare a small business plan
- 180. Prepare a budget for a small business