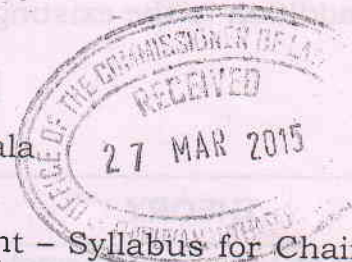


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Government of Kerala



Abstract

Revenue - Survey and Land Records Department - Syllabus for Chain Survey and Higher Survey - Incorporating theory and practical sessions of modern survey equipments - Syllabus revised- Orders issued.

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REVENUE [ E ] DEPARTMENT

G.O. (P) No 123/2015/RD Dated, Thiruvananthapuram, 24/03/2015

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- Read:- 1) Letter No E4-9376/2009 dated 18/03/2013 & 05/12/2014 from Director of Survey and Land Records, Thiruvananthapuram.
- 2) LR N1-44314/2011 dated 12/05/2014 from the Commissioner of Land Revenue, Thiruvananthapuram.

ORDER

In a meeting on 04/05/2009 held by Principal Secretary (Revenue) with Revenue and Survey officials it was decided to authorize the Commissioner of Land Revenue to constitute a technical committee for the revision of syllabus and curriculum for Chain Survey and Higher Survey courses for officials. The Committee emphasized the need for revision of syllabus in Chain Survey and Higher Survey presently being imparted to Revenue Officials. Two months Higher Survey Training is being given to Revenue officials on Theodolite Survey which has become outdated and survey works are presently performed using Electronic Total Station (ETS). The Revenue officials especially Village Officers are not well conversant with the methods and usage of Total Stations (ETS). The Committee recommended that training on Electronic Total Station (ETS) and Global Positioning System (GPS) should be included in the syllabus for Higher Survey. The Commissioner of Land Revenue had forwarded the revised syllabus approved by the Technical Committee vide his letter read as 2<sup>nd</sup> paper above.

Government have examined the matter in detail and are pleased to revise the syllabus of Appendix to Chapter XXIII, Volume II, Part II of Kerala Survey Manual for Chain Survey and Higher Survey as detailed below.

In Appendix to Chapter XXIII, Volume II, Part II of Kerala Survey Manual in addition to the existing syllabus for v<sup>th</sup> week, the following is also added.

### HIGHER SURVEY SYLLABUS

#### V WEEK - Continuation

THEORY		PRACTICAL
Introduction to Basic Mathematics and Geometry	2 days	Introduction to the different kinds of theodolite
Logarithms - Calculation with Logarithms		Study about the parts and its use of the theodolite
SOLUTION OF TRIANGLE (with Scientific calculator) 1) Right angled Triangle 2) Oblique angled Triangle	3 days	Temporary adjustment of theodolite
(a) Case : 1 Two angle and a side are given		Practicing the reading of horizontal angle with theodolite
(b) Case : 2 Two sides and an angle opposite any one of them are given		
(c) Case : 3 Two sides and its included angle are given		
(d) Case : 4 Three sides are given		
Precautions in using a Theodolite	1 day.	
Errors in using a Theodolite		
Precautions to minimize errors in Theodolite Survey.		

Following is substituted for Syllabus from VI<sup>th</sup> week to XII<sup>th</sup> week.

### VI WEEK

THEORY		PRACTICAL
<p><b>INTRODUCTION to :-</b> Land Survey, Topographical Survey, Cadastral Survey, Process in Revenue Survey.</p> <p>Basic Principle of Land Survey How to Cadastral Survey of the State incorporated with great Trigonometrical Survey of India.</p> <p>Detailed study of the nature of main circuit, Block, Khandam Description and Identification of Survey Marks Land Record Maintenance.</p> <p>Duties and Functions of the officials in the LRM</p>	2 days	<p>Practicing the reading of horizontal angle in repetition method</p> <p>Practicing the reading of TRI-JUNCTION in repetition method.</p>
<b><u>TECHNICAL TERMS</u></b>		
<p>(1) In connection with Theodolite Survey</p> <p>2) Introduction to the Plane Table Survey, Compass Survey, Levelling Survey, the methods and instruments used in the above mentioned surveying.</p>	2 days.	
<p>Permanent adjustment of Theodolite</p> <p>Points to be observed in Boundary Demarcation.</p> <p>Time for observation</p> <p>Advantages of the reading of horizontal angle with Theodolite in repetition method</p>	2 days	

## VII WEEK

THEORY		PRACTICAL
<b>TRAVERSE COMPUTATION :-</b> (with Scientific calculator)	3 days	
Traverse Plotting with protractor Disadvantages of plotting with protractor Preparation of plan by using co-ordinates Calculation of the distance between two stations with co-ordinates. Introduction to "Gale's Traverse System" Merits of "Gale's Traverse System" Convergency of Meridian Reading of vertical angles Angle of elevation and depression	2 days	Demarcation of Traverse Stations Perambulation.
<b>Bearing :</b> True Bearing Magnetic Bearing Method of taking the magnetic Bearing with a Theodolite. Face of a Theodolite Procedure to change the face of a Theodolite Significance of Traverse. Survey is done in anticlock wise direction.	1 day	Preparation of Eye –Sketch Surveying with Theodolite Taking Magnetic Bearing Preparation of "B" Sketch with Protractor.

## VIII WEEK

THEORY		PRACTICAL
Introduction to Astronomical Survey and Geodetic Survey Definitions related Astronomical Survey.	1 day	

<p>Procedure of "AZIMUTH OBSERVATION"</p> <p>Procedure of Measurement of main circuits and village boundaries</p> <p>Procedure of connecting the main circuit with G.T.Station</p>	<p>1 day</p>	<p>Measuring of the obstructed line between two Traverse Stations.</p> <p>a) Single base Triangulation b) Double base Triangulation</p>
<p>MINOR INSTRUMENTS</p> <p>a) Substense Bar b) Pantograph c) Planimetre d) Box Sextant e) Clinometre f) Optical Square etc.</p> <p>Procedure of Measuring the obstructed lines between two Traverse stations.</p>	<p>½ day</p>	<p>Refixing of missing Traverse stone</p> <p>1) By forming an Equilateral Triangle 2) By forming a Rectangle 3) By solving Oblique Triangle</p> <p>Survey of Minor Circuited (M.C)-atleast Twenty Stations with Theodolite, Chain and Cross Staff, also the preparation of its consecutive records.</p>
<p>Procedure of the Refixing of missing Traverse Stone :-</p> <p>a) By forming an equilateral Field check to the horizontal and vertical angle</p> <p><b>Purtal Line</b></p> <p>a) Side Purtal Line and b) Cross Purtal Line</p>	<p>2 days</p>	
<p>Kerala Survey and Boundary Act of 1961</p> <p>Kerala Survey &amp; Boundary Rules of 1964</p> <p>Demarcation of State Boundary</p> <p>Demarcation of formation of Block in Town Survey</p> <p>a) Field demarcation of town survey</p> <p>Procedure of the demarcation and Survey of the river which become the boundary between two villages.</p>	<p>1 ½ days.</p>	

## IX to XII Week

## Syllabus of Modern Survey

## Liscad Software

## How to Draw and FMB

<b>A. SEE PROCESS &amp; PRACTICING</b>	<b>5 days</b>
1) Configuring Liscad & Group Creation	1 day
2) Creation of Point, Line & Triangulation	1 day
3) Offset Plotting, Closing Boundary ,creation of Cut Point & Closing Sub division	1 ½ days
4)Are, Side reference, Ladder Creation & Exporting data for CAD Processing	1 ½ days
<b>B) CAD PROCESS &amp; PRACTICING</b>	<b>2 days</b>
1) Beautification of Measurement, Offset, Lines & Changing Layer Setup	1 ½ days
2) Topo Details & Print Setup	½ days
<b>TOTAL STATION SURVEY</b>	<b>10 days</b>
<b>PRELIMINARIES</b>	
1) Introduction about Total Station	½ day
2) Configuration of Total Station	½ day
3) Tripod Setting (Centring & Levelling)	1 day
4) Set Station Orientation & Shifting	
<b>DIFFERENT SURVEY USING TOTAL STATION</b>	
1) Introduction about Total Station	3 days
2) Traverse Survey	2 days
3) Finding Area	1 days
4) State out & Other Options	2 days

<b>TOTAL STATION SURVEY OFFICE PROCESS</b>	<b>3 days</b>
1) Downloading Data, Folder Creation, File Creation & Importing data	1 day
2) Preparation of Sketch in Concerned Group	2 day
<b>GPS SURVEY</b>	<b>3 days</b>
1) Introduction of GPS	3 days
2) Setting of GPS Station (Base & Rover)	
3) Data Downloading Process	

(By Order of the Governor)  
**K.S.SHEELA**  
Special Secretary to Government

To

✓ The Commissioner of Land Revenue, Thiruvananthapuram  
The Director of Survey and Land Records, Thiruvananthapuram.

All District Collectors  
All Tahsildars  
All Village Officers } through Commissioner of Land Revenue

The Principal Accountant General (Audit), Thiruvananthapuram.  
The Accountant General [A&E], Thiruvananthapuram.  
Stock File / Office Copy.

Forwarded/ By Order

  
Section Officer