MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI -51

<table>
<tr><td>1</td><td>Name of Syllabus</td><td>C. C. In Land Surveying
(304108)</td></tr>
<tr><td>2</td><td>Max.Nos of Student</td><td>25 Students</td></tr>
<tr><td>3</td><td>Duration</td><td>6 Month</td></tr>
<tr><td>4</td><td>Type</td><td>Part Time</td></tr>
<tr><td>5</td><td>Nos Of Days / Week</td><td>6 Days</td></tr>
<tr><td>6</td><td>Nos Of Hours /Days</td><td>4 Hrs</td></tr>
<tr><td>7</td><td>Space Required</td><td>Workshop = 200 Sq feet
Class Room = 200 Sq feet
TOTAL = 400 Sq feet</td></tr>
<tr><td>8</td><td>Entry Qualification</td><td>S.S.C. Pass</td></tr>
<tr><td>9</td><td>Objective Of Syllabus/ introduction</td><td>To make job opportunities in the field of surveying</td></tr>
<tr><td>10</td><td>Employment Opportunity</td><td>Can work under contractor and in land surveying department</td></tr>
<tr><td>11</td><td>Teacher’s Qualification</td><td>Diploma in civil Engg.</td></tr>
<tr><td>12</td><td>Training System</td><td>Training System Per Week
<table><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>6 Hours</td><td>18 Hours</td><td>24 Hours</td></tr></table></td></tr>
<tr><td>13</td><td>Exam. System</td><td><table><tr><th>Sr. No.</th><th>Paper Code</th><th>Name of Subject</th><th>TH/PR</th><th>Hours</th><th>Max. Marks</th><th>Min. Marks</th></tr><tr><td>1</td><td>30410811</td><td>Leveling</td><td>TH-I</td><td>3 hrs</td><td>100</td><td>35</td></tr><tr><td>2</td><td>30410812</td><td>Surveying</td><td>TH-II</td><td>3 hrs</td><td>100</td><td>35</td></tr><tr><td>3</td><td>30410821</td><td>Leveling</td><td>PR-I</td><td>3 hrs</td><td>100</td><td>50</td></tr><tr><td>4</td><td>30410822</td><td>Surveying</td><td>PR-II</td><td>3 hrs</td><td>100</td><td>50</td></tr><tr><td></td><td></td><td>Total</td><td></td><td></td><td>400</td><td>170</td></tr></table></td></tr>
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Theory – I LEVELING

Module 1- Leveling

1) Datum surface, reduced level and Bench mark.
2) To operate dumpy level and auto level
3) Profile leveling, running a longitudinal section.

Syllabus - 1**.** Definition – Datum surface reduced level, Bench mark.

1. Dumpy level, auto-level-components, line of collimation, Temporary and permanent adjustment.
2. Study and use of toting level and auto set level.
3. Leveling staff-telescopic and folding.
4. Terms used in leveling.
5. Recordings in leveling book.
6. Classification of leveling.
7. Carrying bench mark from one point to another.
8. Profile leveling running a longitudinal section.
9. Plotting of longitudinal section.

Module 2 – Transit theodolite survey

1) To Know the components and its functions of theodolite.
2) Temporary and permanent adjustment of theodolite and its operating.
3) Measurement of vertical and horizontal angle. Traversing with theodolite.

Syllabus – 1.Components parts of theodolite and their functions. Reading the vernier , temporary adjustments of theodolite.

2. Swinging the telescope, transiting the telescope ,changing the face.
3. Measurement of horizontal angles, method of repetition, errors eliminated by method of vertical angle.
4. Measurement of magnetic bearing of a line by theodolite.
5. Measurement of vertical angle.
6. Prolonging a straight line.

Theory – II – SURVEYING

Module 3 - Plane table survey

Principles of plane table and accessories required

1) Setting of plane table ,leveling , centering and orientation.
2) Methods of plane table surveying radiation, intersection and traversing.

Syllabus - 1. Principles of plane table and accessories required.
2. Setting of plane table, leveling, centering and orientation.
3. Method of plan table table surveying radiation, intersection and traversing.
4. Merits and demerits of plane table surveying.
5. Use of telescope alidade.
6. Temporary adjustments, locating points by radiation.
7. Orientation of plane tale by back sighting and locating details by method of intersection.

8. Five-side traverse enclosing building, using method of radiation and intersection.

Module 4 - Contour survey

1) Direct and indirect methods of contouring
2) Establishing grade contours, Block contouring.
3) Interpolation of contours and contour drawing.

Syllabus - 1. Defination- Contour, contour interval, horizontal equivalent.
2. Characteristics of contour lines.
3. Uses of contour maps.
4. Direct and indirect methods of contouring.
5. Establishing grade contours.
6. Block contouring
7. Interpolation of contours.
8. Contour drawing
9. Locating a proposed rout for a road on contour

Module 5 – Total station

1) Introduction of total station and operation technic.
2) Basic Principle of survey and system of units.
3) Introduction of auto-cad and profile of ground.

Syllabus- 1. Introduction of total station.
2. Operation technique of total station.
3. Basic Principle of survey.
4. Systems of units.
5. Introduction of auto-cad.
6. Profile of ground
7. Use of total station.
8. Specifications of total station .

Practical – I - LEVELING

Module 1- Leveling

1) Datum surface ,reduced level and Bench mark.
2) To operate dumpy level and auto level
3) Profile leveling, running a longitudinal section.

Syllabus - 1**.** Definition – Datum surface reduced level, Bench mark.
1. Dumpy level, auto-level-components, line of collimation, Temporary and permanent adjustment.
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Module 2 – Transit theodolite survey

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6. Prolonging a straight line.

Practical – II - SURVEYING

Module 3 - Plane table survey

3) Principles of plane table and accessories required
4) Setting of plane table ,leveling , centering and orientation.
5) Methods of plane table surveying radiation, intersection and traversing.

Syllabus - 1. Principles of plane table and accessories required.

2. Setting of plane table, leveling, centering and orientation.
3. Method of plan table surveying radiation, intersection and traversing.
4. Merits and demerits of plane table surveying.
5. Use of telescope alidade.
6. Temporary adjustments, locating points by radiation.
7. Orientation of plane tale by back sighting and locating details by method of intersection.
8. Five-side traverse enclosing building, using method of radiation and intersection.

Module 4 - Contour survey

4) Direct and indirect methods of contouring
5) Establishing grade contours, Block contouring.
6) Interpolation of contours and contour drawing.

Syllabus - 1. Definition- Contour, contour interval, horizontal equivalent.

2. Characteristics of contour lines.
3. Uses of contour maps.
4. Direct and indirect methods of contouring.
5. Establishing grade contours.
6. Block contouring
7. Interpolation of contours.
8. Contour drawing
9. Locating a proposed rout for a road on contour

Module 5 – Total station

4) Introduction of total station and operation technic.
5) Basic Principle of survey and system of units.
6) Introduction of auto-cad and profile of ground.

Syllabus- 1. Introduction of total station.
2. Operation technique of total station.
3. Basic Principle of survey.
4. Systems of units.
5. Introduction of auto-cad.
6. Profile of ground
7. Use of total station.
8. Specifications of total station .

Module 6 - use to computer is essential is for and record & henks & for contouss. Knowledge of 'CAD' is also essential.

List Of Tool's & Equipment

1.	Tapes (Metallic)	-	3
2.	Chains	-	3
3.	Optical Square	-	3
4.	Prismatic compass	-	3
5.	Theodolite (transit)	-	3
6	Plane table set	-	3 sets
7	Total Station	-	3
8	Ranging road, leveling staff	-	3
9	Dumpy level	-	3
10	Arrowa pege, flags	-	3
11	Auto Leval	-	3
12	Leveling staff	-	3

Referance Book's

		T.P
A Text book of surveying	-	Kanitkar & Kulkarni.
A Surveying & leveling	-	V.S.Gagare

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