PROPOSED

3RD SEMESTER

CURRICULAR STRUCTURE

AND

SYLLABI OF

FULL-TIME DIPLOMA COURSE IN

SURVEY ENGINEERING

PROPOSED CURRICULAR STRUCTURE FOR THIRD SEMESTER OF THE FULL TIME DIPLOMA COURSE IN SURVEY ENGINEERING

WEST BENGAL STATE COUNCIL OF TECHNICAL EDUCATION												
TEACHING & EXAMINATION SCHEME FOR DIPLOMA IN ENGINEERING COURSES												
BRANCH: **DIPLOMA IN SURVEY ENGINEERING**									SEMESTER: **THIRD**			
SL. NO.	SUBJECT	CREDITS	PERIODS			EVALUATION SCHEME						
			L	TU	PR	INTERNAL SCHEME			ESE	PR #	TW @	TOTAL MARKS
						TA	CT	TOTAL				
1	Chain & Compass Survey	4	3	1		10	20	30	70	-	-	100
2	Cadastral Survey & Plane Table Surveying	3	3	-	-	10	20	30	70	-	-	100
3	Levelling & Tachometry	3	3	1	-	10	20	30	70	-	-	100
4	Theodolite Survey	3	3	-	-	10	20	30	70	-	-	100
5	Materials & Construction Practices	3	3	-	-	10	20	30	70	-	-	100
6	Civil Engineering Drawing-I	2	1	-	3	-	-	-	-	50	50	100
7	Field Survey Practices – I	5	-	-	9	-	-	-	-	100	100	200
8	Professional Practice I	2	-	-	3	-	-	-	-	25	25	50
	TOTAL	**25**	**16**	**2**	**15**	**50**	**100**	**150**	**350**	**175**	**175**	**850**

STUDENT CONTACT HOURS PER WEEK: 33 Hrs.

Theory and Practical Period of 60 Minutes each.

- External Assessment @ - Internal Assessment, **ESE** - End Semester Exam, **CT**- Class Test, **TA** - Teachers Assessment.

L – Lecturer, **TU** –Tutorial, **PR** – Practical, **TA** – Teachers' Assessment, **CT** – Class Test, **ESE** – End Semester Exam. **TW** – Term Work.

Note :- The common syllabus of Workshop Practice of 1st year students may be followed for Survey Engineering department also and the syllabus of Survey Practice subject may be covered in Field Survey Practice subject of 2nd and 3rd year.

Name of the Course : SURVEY ENGINEERING (CHAIN AND COMPASS SURVEY)			
Course code : SE / S3 / T1 / CC		**Semester : THIRD**	
Duration : 15 weeks		**Maximum Marks : 100**	
Teaching Scheme		**Examination Scheme**	
Theory : 3 hrs/week		Mid Semester Exam / CT : 20 Marks	
Tutorial: 1 hrs/week		Attendance, Assignment & Quiz : 10 Marks	
Practical : - hrs/week		End Semester Exam: 70 Marks	
Credit :- 4			
Aim :-			
S.No			
1.	Developing the survey skill required for survey engineering.		
Objective :-			
S.No	Students will be able to:		
1.	Gather preliminary knowledge of surveying.		
2.	Gather knowledge about chain survey.		
3.	Gather knowledge about compass survey.		
Pre-Requisite :-			
S.No			
1.	Students should have the knowledge of drawing and sketching.		
Contents :		Hrs/unit	Marks
Unit -1	**INTRODUCTORY CONCEPTS** 1.1 Basic concept and general introduction 1.2 Measurement – Linear and angular, units of measurement, precision of surveying, work of Surveyor. 1.3 Direct measurement – Instrument for measuring distances, different types of chain, ranging out a survey line, errors in chaining, tape correction, degree of accuracy. **DEFINITION OF SURVEY** 1.4 Definition and object of Surveying. 1.5 Difference between Plane and Geodetic Surveying. 1.6 Principle of Surveying. 1.7 Classification of surveying. **BASIC CONCEPTS OF PLANS, MAPS, SCALES** 1.8 Plans, Maps and Scales – Choice of scale of a map. 1.9 Construction and use of a simple scale. 1.10 Construction and use of a diagonal scale. 1.11 Error due to use of wrong scale.	16	20

Unit -2	**2.0 CHAIN SURVEYING** 2.1 Survey conventional signs, abbreviations and colours used. 2.2 Selection of scales for plotting. 2.3 Principle of Chain Survey. 2.4 Instrument used, their description and checking their correctness. 2.5 Ranging and chain a line 2.6 Errors in chaining, test and adjust of chains. 2.7 Obstructions while chaining and method of over coming them. 2.8 Chaining along a sloping ground. 2.9 Off-sets and their measurements, use of cross-staff and optical square, oblique offset. 2.10 Procedure of chain Surveying. 2.11 Computation of areas from plans by various method: - (i) Graphical, (ii) Divide into triangles, (iii) Divide into squares, (iv) By ordinates, (v) Mid-ordinate rule, (vi) Average ordinate method, (vii) Trapezoidal rule, (viii) Simpson's rule. 2.12 Planimeter – different types, description of different parts, precaution to be taken. 2.13 Conversion of satak, acres & decimal into bigha, katha, chattack & hectres and inversely. 2.14 Numerical problems.	21	25
Unit -3	**3.0 COMPASS / DIAL SURVEYING** 3.1 Bearing, designation of bearing, converting whole circle bearing to quadrant bearing & vice-versa. 3.2 Meridians, classification of bearing. 3.3 Azimuth, reduce bearing. 3.4 Fore bearing, back bearing. 3.5 Computation of internal angles from bearing & vice-versa. 3.6 Magnetic declination, variation of declination, isogonic lines, agonic lines. 3.7 Computation of angles from bearings and bearing from angles and related problems. 3.8 Local attraction, detection and elimination of local attraction. 3.9 Prismatic Compass, surveyor's compass. 3.10 Difference between prismatic compass and surveyor's compass. 3.11 Traversing by compass/dial, closed traverse, open traverse. 3.12 Numerical problems	23	25

Text Books:-

Sl. No.	Titles of the Book	Name of Authors	Name of the Publisher
1	Surveying and Levelling	**N N Basak**	Tata Mc Graw-Hill
2	Surveying and Levelling (Part I)	**T .P. Kanetkar & S. V, Kulkarni**	PUNE VIDHYARTHI GRIHA Prakashan
3	Surveying and Levelling (Vol. I)	**Dr. B. C. Punmiya**	Laxmi Publication
4	Text book of Surveying	**S.K.Husain, M.S. Nagaraj**	S. Chand and company
5	Surveying and Levelling	**S. K. Duggal**	TATA MC GRAW-HILL

6	Plane Surveying	**Dr. A.M.Chandra**	NEW AGE INTERNATIONAL
7	Surveying (Vol. I)	**Dr. K. R. Arora**	STANDARD BOOK HOUSE
8	Fundamentals of Surveying	**S. K. Roy**	PHI Learning Pvt. Ltd.
Reference books :- Nil			
Suggested List of Laboratory Experiments :- Nil			
Suggested List of Assignments/Tutorial :- Nil			

Name of the Course : SURVEY ENGINEERING (CADASTRAL SURVEY & PLANE TABLE SURVEY)			
Course code : SE / S3 / T2 / CSPTS		**Semester : THIRD**	
Duration : 15 weeks		**Maximum Marks : 100**	
Teaching Scheme		**Examination Scheme**	
Theory : 3 hrs/week		Mid Semester Exam / CT : 20 Marks	
Tutorial: - hrs/week		Attendance, Assignment & Quiz : 10 Marks	
Practical : - hrs/week		End Semester Exam: 70 Marks	
Credit :- 3			
Aim :-			
S.No			
1.	Developing the survey skill required for survey engineering.		
Objective :-			
S.No	Students will be able to:		
1.	Gather knowledge about cadastral survey.		
2.	Gather knowledge about plane table survey.		
Pre-Requisite :-			
S.No			
1.	Students should have the knowledge of drawing and sketching.		
Contents :		Hrs/unit	Marks
Unit -1	**1.0 CADASTRAL SURVEYING** 1.1 Definition & Purpose of Cadastral Survey. 1.2 Unit of Cadastral Survey 1.3 Use of Cadastral Survey Instruments : Plane Table, Optical Square, Offset Scale, Diagonal Scale, Acre Comb & Compass. Testing of these instruments. Underlying Principles of Optical Squares, Acre-Comb, etc. 1.4 Orientation of Plane Table. 1.5 Different methods of finding missing Traverse Pegs. Polygon closing by finding Traverse pegs. 1.6 Principle of distribution of errors 1.7 Quadrilaterals, their arrangement. 1.8 Sikmi Lines, Selective of Sikmi Lines, Limit of Offsets. 1.9 Definition: China, Goad, Dhabi and Kaman, Standard Line, Tahoka Line, Trijunction Pillar, Alamat, Scale and their classification. 1.10 Detailed Survey, Booking of Field Notes, Survey-in-Situ. 1.11 Error-in-chaining. 1.12 Procedure of horizontal chaining and its application 1.13 Obstruction of chaining – (a) Chaining Free, Vision obstruction, (b) chaining obstructed, but vision free, (c) Chaining and vision both obstructed.	20	35

	1.14 Procedure of Chain Triangulation and Prolongation. 1.15 Inspection of cadastral survey – Running of Partal Line. 1.16 Boundary compassion, Plot Numbering, Bata and Chhut Plot Numbers. 1.17 Inking of Map. 1.18 Area extraction with the help of Acre- Comb, Passing of mauza area. 1.19 Khanapuri – Map Correction 1.20 Bujharat - Map Correction 1.21 Attestation - Map Correction 1.22 Post Draft Publication – Map Correction 1.23 Post Final publication – Map Correction 1.24 Maintenance of Cadastral Survey Maps and other records.		
Unit -2	**2.0 PLANE TABLE SURVEYING** 2.1 Plane table, its parts & accessories. 2.2 Setting up & orienting the table by back sighting & by magnetic needle. 2.3 Various methods of plane table survey by**: —** (i) Radiation method, (ii) Intersection method or triangulation method, (iii) Traversing method, (iv) Resection method, 2.4 Three point problems & their solution by tracing paper method. 2.5 Advantages & disadvantages of plane table and sources of errors in plane tabling. 2.6 Problem on above topics.	25	35

Text Books:-

Sl. No.	Titles of the Book	Name of Authors	Name of the Publisher
1	Surveying and Levelling	**N N Basak**	Tata Mc Graw-Hill
2	Surveying (Vol. I)	**Dr. K. R. Arora**	STANDARD BOOK HOUSE
3	Surveying and Levelling (Vol. I)	**Dr. B. C. Punmiya**	Laxmi Publication
4	Plane Surveying	**Dr. A.M.Chandra**	NEW AGE INTERNATIONAL PUBLISHERS
5	Surveying and Levelling (Vol. I)	**S. K. Duggal**	TATA MC GRAW-HILL

Reference books :- Nil

Suggested List of Laboratory Experiments :- Nil

Suggested List of Assignments/Tutorial :- Nil

Name of the Course : SURVEY ENGINEERING (LEVELLING AND & TACHOMETRY)			
Course code : SE / S3 / T3 / LT		**Semester : THIRD**	
Duration : 15 weeks		**Maximum Marks : 100**	
Teaching Scheme		**Examination Scheme**	
Theory : 3 hrs/week		Mid Semester Exam / CT : 20 Marks	
Tutorial: - hrs/week		Attendance, Assignment & Quiz : 10 Marks	
Practical : - hrs/week		End Semester Exam: 70 Marks	
Credit :- 3			
Aim :-			
S.No			
1.	Developing the survey skill required for survey engineering.		
Objective :-			
S.No	Students will be able to:		
1.	Gather knowledge about leveling.		
2.	Gather knowledge about tacheometry.		
Pre-Requisite :-			
S.No			
1.	Students should have the knowledge of drawing and sketching.		
Contents :		Hrs/unit	Marks
Unit -1	**1.0 LEVELLING** 1.1. Concept of levelling, uses of levelling, Definition of important terms used in levelling. 1.2. Datum elevation, vertical angle, mean sea level and bench mark. 1.3. Levelling Instruments- Different types- parts and function of dumpy level, tilting level and automatic level. 1.4. Levelling staff. 1.5. Sensitivity of spirit level- methods of determining sensitivity. Parallel plate micrometer. 1.6. Tests and adjustments of dumpy level & tilting level. 1.7. (i) Methods of levelling- Spirit levelling, trigonometrical levelling & barometric levelling. (ii) Special methods of spirit levelling- Details of differential levelling, profile levelling, cross-sectioning & reciprocal levelling. (iii) Methods of booking, calculation of reduced levels &plotting of level sections (iv) Recording and plotting of longitudinal section of an alignment. (v) Levelling problems like levelling of steep slope,	15	25

	summits &hollows, taking level of an overhead point, levelling ponds & lakes too wide to be sighted across. Levelling across river, levelling past high wall. (vi) Levelling in an inclined plane on surface and underground (vii) Use of Abney's clinometer 1.8 Sources of errors in levelling, precautions.		
Unit -2	**2.0 CONTOURING** 2.1 Basic concept, contour interval. 2.2 Characteristics of contour. 2.3 Methods of locating contours. 2.4 Interpolation & extrapolation of contour. 2.5 Contour gradient. 2.6 Use of contour maps. 2.7 Locating the proposed route for a road on a contour map. 2.8 Establishing grade contours, stratum contour.	12	20
Unit -3	**3.0 TACHEOMETRY** 3.1 Introduction. 3.2 Advantage of Tacheometric Survey. 3.3 Tacheometer. 3.4 Basic systems of Tacheometric Measurements. 3.5 Principle of Stadia Method. 3.6 Determination of Tacheometric Constants. 3.7 External Focussing Telescopes with an Anallatic Lens. 3.8 Internal Focussing Telescope. 3.9 DISTANCE AND ELEVATION FORMULA: Line of sight horizontal — Line of sight inclined. 3.0 Use of Tacheometry. 4.0 Sources of error, accuracy of measurement.	18	25

Text Books:-

Sl. No.	Titles of the Book	Name of Authors	Name of the Publisher
1	Surveying and Levelling	**N N Basak**	Tata Mc Graw-Hill
2	Surveying and Levelling (Part I & II)	**T .P. Kanetkar & S. V, Kulkarni**	PUNE VIDHYARTHI GRIHA Prakashan
3	Surveying and Levelling (I & II)	**Dr. B. C. Punmiya**	Laxmi Publication
4	Surveying and Levelling(I & II)	**S. K. Duggal**	TATA MC GRAW-HILL
5	Plane Surveying	**Dr. A.M.Chandra**	NEW AGE INTERNATIONAL
6	Surveying (Vol. I & II)	**Dr. K. R. Arora**	STANDARD BOOK HOUSE
7	Fundamentals of Surveying	**S. K. Roy**	PHI Learning Pvt. Ltd.

Reference books :- Nil

Suggested List of Laboratory Experiments :- Nil

Suggested List of Assignments/Tutorial :- Nil

Name of the Course : SURVEY ENGINEERING (THEODOLITE SURVEY)			
Course code : SE / S3 / T4 / TS		**Semester : THIRD**	
Duration : 15 weeks		**Maximum Marks : 100**	
Teaching Scheme		**Examination Scheme**	
Theory : 3 hrs/week		Mid Semester Exam / CT : 20 Marks	
Tutorial: - hrs/week		Attendance, Assignment & Quiz : 10 Marks	
Practical : - hrs/week		End Semester Exam: 70 Marks	
Credit :- 3			
Aim :-			
S.No			
1.	Developing the survey skill required for survey engineering.		
Objective :-			
S.No	Students will be able to:		
1.	Gather knowledge about theodolite.		
2.	Compute area and volume.		
Pre-Requisite :-			
S.No			
1.	Students should have the knowledge of drawing and sketching.		
2.	Students should have the knowledge of mathematics.		
Contents :		Hrs/unit	Marks
Unit -1	**1.0 THEODOLITE SURVEY** 1.1 Classification of Theodolite, description of Theodolite, function of its different parts. 1.2 Different parts of a transit Theodolite. 1.3 Relations between fundamental lines. 1.4 Temporary adjustments of the Theodolite. 1.5 MEASUREMENT OF HORIZONTAL ANGLES**:** Repetition method – Reiteration method 1.6 Measurement of vertical angles. 1.7 Calculation of bearings from angles. 1.8 Balancing in the intersection of two straight lines. 1.9 Layout a horizontal angle. 1.10 Traversing with the Theodolite by bearing and included angles. 1.11 Traverse connection with G.T.S. and open traverse. Conversion of spherical to rectangular coordinates and vice-versa. 1.12 Checks in closed traverse and open traverse. 1.13 Relation between precision of angle and linear measurement. 1.14 Sources of error in Theodolite work.	30	45

	1.15 Traverse computation 1.16 ADJUSTMENT OF CLOSED TRAVERSE**:** (i) Distribution of angular errors; (ii) Balancing the traverse by Bowditch's Rule and transit rule. 1.17 Computation of area of a closed traverse. 1.18 Computation of length and bearing from co-ordinates. 1.19 Testing and permanent adjustment of a transit Theodolite. 1.20 Missing data problems.		
Unit -2	**2.0 COMPUTATION OF AREA & VOLUME** 2.1 **COMPUTATION OF AREA:** General methods of determining areas computed by sub-division into triangles, area from**:** Off-set to base line – Off-sets at regular intervals – Off-sets at irregular intervals — Area by planimeter — Area computed by map measurement. 2.2 **COMPUTATION OF VOLUME:** Measurement from cross-sections — Prismoidal formula — Trapezoidal formula — Volume from spot levels — Volume from contour plans.	15	25

Text Books:-

Sl. No.	Titles of the Book	Name of Authors	Name of the Publisher
1	Surveying and Levelling	**N N Basak**	Tata Mc Graw-Hill
2	Surveying and Levelling (Part I)	**T .P. Kanetkar & S. V, Kulkarni**	PUNE VIDHYARTHI GRIHA Prakashan
3	Surveying and Levelling (Vol. I)	**Dr. B. C. Punmiya**	Laxmi Publication
4	Text book of Surveying	**S.K.Husain, M.S. Nagaraj**	S. Chand and company
5	Surveying and Levelling (Vol. I)	**S. K. Duggal**	TATA MC GRAW-HILL
6	Plane Surveying	**Dr. A.M.Chandra**	NEW AGE INTERNATIONAL PUBLISHERS
7	Surveying (Vol. I)	**Dr. K. R. Arora**	STANDARD BOOK HOUSE
8	Fundamentals of Surveying	**S. K. Roy**	PHI Learning Pvt. Ltd.

Reference books :- Nil

Suggested List of Laboratory Experiments :- Nil

Suggested List of Assignments/Tutorial :- Nil

Name of the Course : SURVEY ENGINEERING (MATERIALS & CONSTRUCTION PRACTICES)			
Course code : SE / S3 / T5 / MCP		**Semester : THIRD**	
Duration : 15 weeks		**Maximum Marks : 100**	
Teaching Scheme		**Examination Scheme**	
Theory : 3 hrs/week		Mid Semester Exam / CT : 20 Marks	
Tutorial: - hrs/week		Attendance, Assignment & Quiz : 10 Marks	
Practical : - hrs/week		End Semester Exam: 70 Marks	
Credit :- 3			
Aim :-			
S.No			
1.	Developing the conceptual knowledge in building material, construction, problems and its remedies.		
Objective :-			
S.No	Students will be able to:		
1.	Identify various components of buildings and their functions.		
2.	Check line, level and plumb of various construction activities.		
3.	Identify & suggest rectification the various defects in civil engineering works.		
Pre-Requisite :-			
S.No			
1.	Student should know the basic properties of material being used in the construction of the building.		
2.	Student should be able to think over the construction problems and their remedies.		
Contents :		Hrs/unit	Marks
Unit -1	**1.0** **STONES** 1.1 Formation of rock, Igneous, Sedimentary, Metamorphic. 1.2 Classification of stones, different varieties of stones available from different rocks. 1.3 Characteristic qualities of good building stone, Different varieties of stones use and places where available. **BRICK** 1.4 Definition 1.5 Classification and size 1.6 Traditional and I.S. characteristics of 1^{st} / 2^{nd} / 3^{rd} class bricks 1.7 Use in different purpose. **LIME** 1.8 Classification of lime, manufacturing of lime, burning, air slaking, storage.	20	30

	1.9 Characteristic s of good lime. **CEMENT** 1.10 Type of cement – Portland cement, Rapid hardening cement & Slag cement. **TIMBER** 1.11 Definition, characteristic s of good timber. 1.12 Seasoning, artificial and natural seasoning. 1.13 Principal timber trees in India, use for different purposes. **METALS** 1.14 Ferrous and non-ferrous metals, principal iron ores in India, Places where available and percentage of iron content in it. 1.15 Manufacture of pig iron by blast furnace. 1.16 Cast iron, wrought iron and steel, its properties and uses in engineering works.		
Unit -2	**2.0** **MORTAR** 2.1 General principles and precautions in brick masonry work – mortar used. **CONCRETE** 2.2 Definition 2.3 Types & properties 2.4 Use 2.5 Preparation of concrete 2.6 Reinforced cement concrete - function **CONCEPT OF SOIL & FOUNDATION** 2.7 Concept of soil, Definition of soil, Classification of soil as per BIS classification only, Phase Diagram, Limit. 2.8 Concept of foundation, object of foundation, bearing capacity of soil, Determination of width and depth of foundation. 2.9 Different types of foundation used at specific locations (no detail of construction). **BRICK MASONRY** 2.10 Definition 2.11 Bonding 2.12 Function 2.13 Types (only two types) 2.14 Odd and even layer 2.15 Plan of 1-brick & ½ brick thick in English bond. **WALL FINISH** 2.16 Plastering – types and function 2.17 White washing – function and methods 2.18 Colour washing – function, types and methods **PAINTS** 2.19 Paints, object of painting, ingredients of paints. 2.20 Characteristic s of good paints.	25	40

	PLASTERING, POINTING & JOINING 2.21 Object of plastering, composition, and application. 2.22 Different types of pointing and joining. **DAMP PROOF COURSE** 2.23 Causes of dampness, its harmful effect. 2.24 Methods of damp proofing. **FLOORING** 2.25 Definition, choice of floor construction. 2.26 Construction details of different flooring. **ROOF** 2.27 Definition, choice of roof construction. 2.28 Construction details of different flat roofs **DOORS & WINDOWS SHUTTERS** 2.29 Different types of door & window shutters, 2.30 Its construction details. **LINTEL & ARCHES** 2.31 Lintels – advantages, classification of lintels. 2.32 Arches – object of providing it, parts of an arch, classification of arches(no details of construction).		

Text Books:-

Sl. No.	Titles of the Book	Name of Authors	Name of the Publisher
1	Building materials	**S. K. Duggal**	New Age International
2	Building Construction	**Dr. B. C. Punmiya**	Laxmi Publication
3	Building Construction	**Sushil Kumar**	Standard Publication
4	Construction Materials	**D.N. Ghose**	TATA MC GRAW-HILL

Reference books :- Nil

Suggested List of Laboratory Experiments :- Nil

Suggested List of Assignments/Tutorial :- Nil

Name of the Course : SURVEY ENGINEERING (CIVIL ENGINEERING DRAWING - I)			
Course code : SE / S3 / P1 / CED1		**Semester : THIRD**	
Duration : 15 weeks		**Maximum Marks : 100**	
Teaching Scheme		**Examination Scheme**	
Theory : -1 hrs/week		Continuous Internal Assessment : 50 Marks	
Tutorial: - hrs/week		Attendance, Assignment & Quiz : - Marks	
Practical : 3 hrs/week		External Assessment : 50 Marks	
Credit :- 2			
Aim :-			
S.No			
1.	To develop the ideas, vision and its practical reality through engineering graphics.		
2.	Developing the approach of visualization, drafting, modeling and analysis.		
Objective :-			
S.No	Students will be able to:		
1.	Read, interpret and draw the building drawings.		
2.	Prepare working drawings for the building.		
3.	Apply the building rules, regulations and byelaws		
Pre-Requisite :-			
S.No			
1.	Perfection in geometry and sketching.		
2.	The students should be perfect in plotting the geometrical shapes and skill of reading the geometrical designs.		
Contents : (Theory)		Hrs/unit	Marks
Unit -1	**1.0 INTRODUCTION** 1.1 Element of building planning 1.2 Neighborhoods/Available facilities / Physical features/ Cost of site/Size of plot. 1.3 Floor plan and characteristics 1.4 Sleeping area / Living area / Service of working area minimum dimensions of room / Kitchen / Bath and W.C. / Staircase / Doors and windows etc.	15	
Contents : (Practical)			
Sl. No.	**Assignments : Following exercises should be drawn on full imperial size drawing sheets.**		
1.	**DRAWING PLATE – 1 : BUILDING PLAN, SECTION & ELEVATION** Double storeyed residential buildings along with the following drawings**:** (i) Plan, elevation and section of a double storeyed small residential building form given sketch; the building should have Toilet / W.C. / Bathroom, Kitchen and veranda. (ii) Detail of foundation plan (layout), roof plan, Site plan.		

2.	**DRAWING PLATE – 2 : BUILDING FROM MEASUREMENT** Plan, elevation and section of a building from measurement. (A portion of the Institute may be taken.)

Text Books:-

Sl. No.	Titles of the Book	Name of Authors	Name of the Publisher
1	Civil Engineering Drawing	**Malik & Mayo**	New Asian Publishers New Delhi
2	Elements of Building Drawing	**D. M. Mahajan**	

Reference books :- Nil

Suggested List of Laboratory Experiments :- Nil

Suggested List of Assignments/Tutorial :- Nil

Name of the Course : SURVEY ENGINEERING (FIELD SURVEY PRACTICES – I)	
Course code : SE / S3 / P2 / FSP1	**Semester : THIRD**
Duration : 15 weeks	**Maximum Marks : 200**
Teaching Scheme	**Examination Scheme**
Theory : - hrs/week	Continuous Internal Assessment : 100 Marks
Tutorial: - hrs/week	Attendance, Assignment & Quiz : - Marks
Practical : 9 hrs/week	External Assessment : 100 Marks
Credit :- 5	

Aim :-	
S.No	
1.	Developing the survey skill required for survey engineering.

Objective :-	
S.No	Students will be able to:
1.	Identify different survey instruments.
2.	Record and observe necessary observation with the survey instruments
3.	Compute necessary survey data from field observation for drawing.
4.	Prepare drawing using survey data.

INSTRUCTIONS:	
S.No	
1.	Group size for survey practical work should be maximum 6 students.
2.	Each student from a group should handle the instrument independently to understand the function of different components and use of the instrument.
3.	Drawing and plotting should be considered as part of practical.
4.	Term work shall consist of record of all practical and projects in field book and drawing of Project work on full / half imperial size drawing sheets.

Pre-Requisite :-	
S.No	
1.	Perfection in drawing and sketching.
2.	Students should have basic knowledge of Surveying.

Contents : (Practical)	
Sl. No.	**Assignments**
1.	**1.0 CHAIN SURVEY** 1.1 Unfolding and folding the chain 1.2 Direct Ranging: Ranging by Eye – Ranging by Line Ranger – Chaining on Level Ground 1.3 Indirect Ranging: Chaining on Sloping Ground 1.4 Laying of angle with chain and tape: 30°, 60°, 45° & 90°

	1.5 Obstacle in Chaining: Chaining free – Vision obstructed – Chaining obstructed but vision free – Chaining and vision both obstructed 1.6 Cross Staff Survey 1.7 Surveying an area with Chain and Tape: Reconnaissance the area of survey – Preparation of Key Plan and Reference Sketch – Selection of Base Line, Station Points and Marking of Stations – Booking Field Notes – Plotting of Field Data with conventional signs.
2.	**2.0 COMPASS TRAVERSE** 2.1 Traversing an area with prismatic compass. 2.2 Traversing in presence of local attraction. 2.3 Surveying an area with prismatic compass, noting the field book, calculate the correct bearings plotting the traverse by bearing and distance. Graphical adjustment of closing error of the traverse.
3.	**3.0 PLANE TABLE SURVEY** 3.1 Setting up and Orientation of plane table with Trough Compass and Back Ray Method 3.2 Plane Tabling by Radiation Method 3.3 Plane Tabling by Intersection Method 3.4 Plane Tabling by Traversing Method 3.5 Plane Tabling by Resection Method 3.6 Fixing inaccessible objects in a plane table survey 3.7 Relaying a missing traverse station with plane table and sight vane 3.8 Surveying a small area by plane table and determination of area by graphical method

Text Books:-

Sl. No.	Titles of the Book	Name of Authors	Name of the Publisher
1	Surveying and Levelling	**N N Basak**	Tata Mc Graw-Hill
2	Surveying and Levelling (Part I)	**T .P. Kanetkar & S. V, Kulkarni**	PUNE VIDHYARTHI GRIHA Prakashan
3	Surveying and Levelling (Vol. I)	**Dr. B. C. Punmiya**	Laxmi Publication
4	Text book of Surveying	**S.K.Husain, M.S. Nagaraj**	S. Chand and company
5	Surveying and Levelling (Vol. I)	**S. K. Duggal**	TATA MC GRAW-HILL
6	Plane Surveying	**Dr. A.M.Chandra**	NEW AGE INTERNATIONAL PUBLISHERS
7	Surveying (Vol. I)	**Dr. K. R. Arora**	STANDARD BOOK HOUSE
8	Fundamentals of Surveying	**S. K. Roy**	PHI Learning Pvt. Ltd.

Reference books :- Nil

Suggested List of Laboratory Experiments :- Nil

Suggested List of Assignments/Tutorial :- Nil

Name of the Course : SURVEY ENGINEERING (PROFESSIONAL PRACTICE I)	
Course code : SE / S3 / P3 / PP1	**Semester : THIRD**
Duration : 15 weeks	**Maximum Marks : 50**
Teaching Scheme	**Examination Scheme**
Theory : - hrs/week	Continuous Internal Assessment : 25 Marks
Tutorial: - hrs/week	Attendance, Assignment & Quiz : - Marks
Practical : 3 hrs/week	External Assessment : 25 Marks
Credit :- 2	

Aim :-

S.No	
1.	Development and evaluation of individual skills.
2.	Enhancement in soft skills through innovation.

Objective :-

S.No	Students will be able to:
1.	Acquire information from different sources.
2.	Prepare notes for given topic.
3.	Present given topic in a seminar.
4.	Interact with peers to share thoughts.
5.	Prepare a report on industrial visit, expert lecture.

Pre-Requisite :-

S.No	
1.	Communication skill must be perfect.

Contents : (Practical)

Sl. No.	**Assignments**
1.	**Industrial Visits** Structured industrial visits be arranged and report of the same should be submitted by the individual student, to form a part of the term work. Industrial visits may be arranged in the following areas / industries: • **Survey Site**
2.	**Lectures by Professional / Industrial Expert** be organized from ANY ONE of the following areas : 1. Different types of construction machineries and equipment. 2. Different types of Survey instruments / software.
3.	**Individual Assignments :** Seminar and report preparation**.**

Text Books:- Nil.

Reference books :- Nil

Suggested List of Laboratory Experiments :- Nil

Suggested List of Assignments/Tutorial :- Nil