

Government Polytechnic Asthawan, Nalanda

LECTURE PLAN

| Name of the Faculty : Gunjan Kumar | | | | |
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| Semester : III | | | | |
| Subject : Surveying (1615302) | | | | |
| Unit | Week | Lecture No (1 Hr Each) | Topic of Class & Discussions | Mode of Teaching |
| Unit 1 TYPES OF SURVEY | 1 | 1 | DEFINITION. OBJECTS OF SURVEYING, PRINCIPLES OF SURVEYING. | Lecture /PDF /Video |
| | | 2 | USES OF SURVEY, CLASSIFICATION OF SURVEYING. | Lecture /PDF /Video |
| | | 3 | PRIMARY –PLAIN, GEODETIC. | Lecture /PDF /Video |
| | 2 | 4 | SECONDARY – BASED ON INSTRUMENTS, METHOD, OBJECT, NATURE OF FIELD | Lecture /PDF /Video |
| Unit 2 Chain & Cross Staff Survey | 2 | 5 | PRINCIPLE OF CHAIN SURVEY .STUDY AND USE OF INSTRUMENTS FOR LINEAR MEASUREMENTS – CHAIN, TAPE, RANGING ROD, ARROWS, PEGS , | Lecture /PDF /Video |
| | 2 | 6 | CROSS STAFF , OPTICAL SQUARE , LINE RANGER. | Lecture /PDF /Video |
| | 3 | 7 | RANGING –DIRECT AND INDIRECT RANGING CHAINING – PLAIN AND SLOPING GROUNDS. | Lecture /PDF /Video |
| | 3 | 8 | Chain Triangulation – Survey Station and their Selections, Survey lines, Check lines, Tie lines, base line. Taking offsets .long and short offset, degree of offset. | Lecture /PDF /Video |
| | 3 | 9 | OBSTACLES IN CHAINING. | Lecture /PDF /Video |
| | 4 | 10 | CHAIN & CROSS STAFF SURVEY FOR FINDING AREA OF A FIELD (NUMERICAL PROBLEMS) | Lecture /PDF /Video |
| | 4 | 11 | ERRORS IN CHAIN SURVEYING & APPLYING CORRECTIONS FOR CHAIN & TAPE (NUMERICAL PROBLEMS). | Lecture /PDF /Video |
| 4 | 12 | CONVENTIONAL SIGNS RELATED TO SURVEY | Lecture /PDF /Video | |
| Unit – 3 (Compass Survey) | 5 | 13 | PRINCIPLE OF COMPASS SURVEY. BEARING OF LINES | Lecture /PDF /Video |
| | 5 | 14 | MERIDIAN –TRUE, MAGNETIC, AND ARBITRARY | Lecture /PDF /Video |
| | 5 | 15 | BEARING –FORE BEARING, BACK BEARING, WHOLE CIRCLE BEARING, QUADRANTAL BEARING SYSTEM | Lecture /PDF /Video |
| | 6 | 16 | REDUCED BEARING, CONVERSION OF BEARINGS, FINDING INCLUDED ANGLES FROM BEARINGS | Lecture /PDF /Video |
| | 6 | 17 | PRISMATIC COMPASS – COMPONENT, CONSTRUCTION AND USE | Lecture /PDF /Video |
| | 6 | 18 | LOCAL ATTRACTION | Lecture /PDF /Video |
| | 7 | 19 | CAUSES, PRECAUTIONS TO BE TAKEN TO AVOID AND CORRECTION OF BEARINGS AFFECTED DUE TO LOCAL ATTRACTION | Lecture /PDF /Video |
| | 7 | 20 | CALCULATION OF INCLUDED ANGLES. | Lecture /PDF /Video |
| | 7 | 21 | CALCULATION OF INCLUDED ANGLES. | Lecture /PDF /Video |
| | 8 | 22 | TRAVERSING – OPEN TRAVERSE, CLOSED TRAVERSE | Lecture /PDF /Video |
| | 8 | 23 | CHECK ON OPEN AND CLOSED TRAVERSE. GRAPHICAL ADJUSTMENT FOR CLOSING ERROR | Lecture /PDF /Video |
| 8 | 24 | NUMERICAL PROBLEMS ON CALCULATION OF BEARINGS, ANGLES AND LOCAL ATTRACTION. | Lecture /PDF /Video | |
| Unit – 4 (Levelling) | 9 | 25 | Definitions – Level surface, Level line, horizontal line, Vertical line, Datum surface , Reduced level, Bench mark and its types | Lecture /PDF /Video |
| | 9 | 26 | DUMPY LEVEL –COMPONENTS, CONSTRUCTION | Lecture /PDF /Video |
| | 9 | 27 | LINE OF SIGHT, LINE OF COLLIMATION, BUBBLE TUBE AXIS, LEVELLING STAFF – TELESCOPIC AND FOLDING TYPE | Lecture /PDF /Video |
| | 10 | 28 | FORESIGHT, BACK SIGHT, INTERMEDIATE SIGHT | Lecture /PDF /Video |
| | 10 | 29 | CHANGE POINT, HEIGHT OF COLLIMATION . FUNDAMENTAL AXES AND THEIR RELATIONSHIP | Lecture /PDF /Video |
| | 10 | 30 | RECORDING IN LEVEL BOOK. TEMPORARY ADJUSTMENTS OF DUMPY LEVEL | Lecture /PDF /Video |
| | 11 | 31 | METHOD OF REDUCTION OF LEVELS – HEIGHT OF INSTRUMENT METHOD | Lecture /PDF /Video |
| | 11 | 32 | RISE AND FALL METHOD | Lecture /PDF /Video |
| | 11 | 33 | ARITHMETICAL CHECKS, NUMERICAL PROBLEMS | Lecture /PDF /Video |
| | 12 | 34 | NUMERICAL PROBLEMS | Lecture /PDF /Video |
| | 12 | 35 | NUMERICAL PROBLEMS | Lecture /PDF /Video |
| | 12 | 36 | NUMERICAL PROBLEMS | Lecture /PDF /Video |
| | 13 | 37 | CLASSIFICATIONS OF LEVELLING - SIMPLE, DIFFERENTIAL, PROFILE, CROSS SECTIONAL, | Lecture /PDF /Video |

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|--|------|---------------------------|--|---------------------|
| | 13 | 38 | FLY AND CHECK LEVELLING. | Lecture /PDF /Video |
| | 13 | 39 | STUDY AND USE OF TILTING LEVEL & AUTO LEVEL. | Lecture /PDF /Video |
| | 14 | 40 | SOURCES AND ERRORS IN LEVELLING, PRECAUTIONS AND DIFFICULTIES FACED IN LEVELLING | Lecture /PDF /Video |
| Unit - 5 (Contouring) | 14 | 41 | DEFINITIONS – CONTOUR, CONTOUR INTERVAL, HORIZONTAL EQUIVALENT | Lecture /PDF /Video |
| | 14 | 42 | CHARACTERISTICS OF CONTOURS .METHOD OF LOCATING CONTOURS | Lecture /PDF /Video |
| | 15 | 43 | INTERPOLATION OF CONTOURS. ESTABLISHING GRADE CONTOURS. | Lecture /PDF /Video |
| | 15 | 44 | USES OF CONTOUR MAPS. INTERPRETATION OF TYPICAL CONTOUR SHEETS | Lecture /PDF /Video |
| Unit - 6 (AREA AND VOLUME MEASUREMENTS) | 15 | 45 | CONSTRUCTION AND USE OF POLAR PLANIMETER FOR MEASUREMENT OF AREA | Lecture /PDF /Video |
| | 16 | 46 | NUMERICAL PROBLEMS | Lecture /PDF /Video |
| | 16 | 47 | NUMERICAL PROBLEMS | Lecture /PDF /Video |
| | 16 | 48 | STUDY AND USE OF DIGITAL PLANIMETER .CONCEPT OF COMPUTATION OF VOLUME BY TRAPEZOIDAL AND PRISMOIDAL FORMULAE.(| Lecture /PDF /Video |