

# EGRA SARADA SHASHI BHUSAN COLLEGE

(AFFILIATED TO VIDYANAGAR UNIVERSITY)



P.O. + P.S. – EGRA, DIST. - PURBA MEDINIPUR, PIN -721429, WEST BENGAL

REACCREDITED BY NAAC WITH 'B' GRADE WITH A CGPA OF 2.32

DRAFT SYLLABUS FOR

## CERTIFICATE COURSE IN AMIN SURVEY

(A VENTURE OF SKILL DEVELOPMENT)

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ORGANIZE BY

DEPARTMENT OF GEOGRAPHY

|                                      |  |
|--------------------------------------|--|
| <b>Course Name</b>                   | AMIN   |
| <b>Occupation</b>                    | Bhumi Sahayak / Junior Amin / Amin (Apprentice)  |
| <b>Job Description</b>               | <ol style="list-style-type: none"> <li>1. Cadastral survey of a village using required survey instruments.</li> <li>2. Boundary demarcation of plots applying land department procedures.</li> <li>3. Survey of a proposed industrial site using Theodolite or other survey instruments.</li> <li>4. Conducting project work on land acquisition of a proposed road/ industrial project.</li> <li>5. Supervision of any construction or renovation work of Municipality / Corporation / Panchayat at execution stage (specifically project consists boundary demarcation, land acquisition if any etc.)</li> <li>6. Preparation of contour of an area using leveling instruments.</li> <li>7. To acquired knowledge on different official work related to land acquisition or boundary demarcation or cadastral survey in which land rules, regulation, land laws and conventional procedure of cadastral survey follows under state government land department</li> </ol> |
| <b>Trainees' Entry Qualification</b> | Class 8 Pass + ITI (2 yrs.) with 2 years' experience, OR Class 10 Pass + ITI (1Yr) after class 10 with 1 year experience, OR Class 10 Pass + ITI (2 yrs.) after class 10, OR Class 10 Pass with 2 years' experience, OR Class 10 Pass and pursuing continuous regular schooling, OR 3 years diploma after class 10 or Class 12 Pass with 6 months experience.  |

### Structure of Course:

| Module No. | Outcome  | Theory (Hrs.) | Practical (Hrs.) | Total (Hrs.) |
|------------|--|---------------|------------------|--------------|
| 1          | Describe the responsibility of an AMIN   | 15            | 20               | 35           |
| 2          | Perform Basic Technical Drafting Work, Conduct Leveling using dumpy level, leveling staff etc. | 20            | 50               | 70           |
| 3          | Measure distance by Chain & Tapes, Conduct closed Traverse survey with chain & Compass.        | 20            | 50               | 70           |
| 4          | Perform Basic Surveying work.  | 20            | 50               | 70           |
| 5          | Demonstrate Land Surveys (Revenue Survey) – area Measurement.                                  | 25            | 50               | 75           |
|            | <b>Total</b>   | <b>100</b>    | <b>220</b>       | <b>320</b>   |

## **SYLLABUS**

### **Module No. 1: AMIN**

**Outcomes:** Describe the responsibility of an AMIN

**Theory Content:**

- 1.1. Introduction/Definition,
- 1.2. Responsibility of an AMIN,
- 1.3. Introduction to Mouza Map.
- 1.4. Agency under an AMIN recruited,
- 1.5. AMIN as Entrepreneur.

**Practical Content:**

1. Study of various rules and regulations related to Land Survey (cadastral survey) of various Govt. agencies.
2. Study of Mouza Map.

### **Module No. 2: Basic Technical Drafting Work**

**Outcomes:** Perform Basic Technical Drafting Work

**Theory Content:**

- 2.1 Drawing Instruments,
- 2.2 Types of line.
- 2.3 Scale-plane and diagonal scale, R.F,
- 2.4 Geometrical construction (Polygon),
- 2.5 Orthographic projection - plan, elevation, side view of any object or structure.
- 2.6 Symbols used in Amin survey.

**Practical Content:**

1. Scale; Types of scale used in civil engineering drafting work.
2. R.F
3. Conversion of plot length into actual length in the field.
4. Draw plan, elevation, side view and sectional view of civil engineering objects.
5. Draw different symbols used in Amin survey

### **Module No. 3: Measurement of Distance**

**Outcomes:** Measure distance by Chain & Tapes

**Theory Content:**

- 3.1 Direct measurement: Pacing, odometer, chaining.
- 3.2 Instruments for measuring distance: General concept of metric surveying chain, Gunter's chain, Revenue chain, Engineers' chain
- 3.3 Tapes- General concept of different Tapes i.e., Cloth or linen tape, metric woven metallic tape, metric steel tape, invar tape, synthetic tapes etc.
- 3.4 Instruments for marking station: General concept of pegs, ranging rods, offset rod, laths whites, plumb bob etc.
- 3.5 Ranging out survey lines- Procedure of direct and indirect ranging using ranging rod and line ranger.
- 3.6 Chaining a line
- 3.7 Errors in length due to incorrect chaining.
- 3.8 Electronic distance measurement (EDM).

**Practical Content:**

1. Demonstration of instruments for direct measurement like, odometer, chains, Electronic Measuring Wheels, Digital Tape Measures etc.
2. Demonstration and use of ranging rod, arrow, pegs, Cloth or linen tape, metric woven metallic tape, metric steel tape, invar tape, synthetic tapes etc.
3. Chaining a line by chain and tape.
4. Handling of electronic instruments for measuring distance.

### **Module No. 4: Basic Surveying**

**Outcomes:** Perform Basic Surveying work.

**Theory Content:**

- 4.1. **Definition of plane Surveying,**
- 4.2. **Classification of Surveying based on** 1) nature of field: land surveys, marine or navigation surveys (only definition), astronomical surveys (only definition) 2) methods employed 3) instrument use,
- 4.3. **Sub-division of land surveys:** Topographical surveys, Cadastral surveys, City surveys and Engineering surveys,

- 4.4. **Sub division of engineering survey:** Reconnaissance surveys, preliminary surveys, and location surveys.
- 4.5. **Methods of locating a point:** Rectangular coordinates, Polar coordinates. control point.
- 4.6. **Measurements:** Linear and Angular measurements,
- 4.7. **Units of measurement-** Basic units of length, Basic units of area, Basic units of volume, conversion of basic units.
- 4.8. **Working of the surveyor:** Field work, office work, care and adjustments of instruments
- 4.9. Principles of chain and compass surveying
  - i) Instruments for setting out right angles: Setting right angle by tape.
  - ii) Classification of traverse: closed traverse, open traverse.
  - iii) The prismatic compass; method of using prismatic compass. Surveyor compass
  - iv) Bearings of lines; true meridians; magnetic meridian; arbitrary meridian; designation of bearing (WCB, RB); fore bearing, back bearing; calculation of included angle; local attraction;
  - v) Traversing with the chain and compass.
  - vi) Plotting of traverse.

**Practical Content:**

1. Identification of different type of instruments and accessories used in field surveying.
2. Storage of all the instruments and tools related to Surveying. 3.Maintenance of all the instruments and tools related to surveying.

**Module No. 5: Land Surveys (Revenue Surveys)**

**Outcomes:** Demonstrate Land Surveys (Revenue Survey) – area measurement.

**Theory Content:**

- 5.1 Objective of land surveys
- 5.2 preliminary principle of land surveys.
- 5.3 Name of Government agency conducting land surveys.
- 5.4 Definition of cadastral survey.
- 5.5 Purpose/aim/use/objective of cadastral survey.

5.6 Terms related to Cadastral Survey- Quadrilateral, Shikmi line, Partal Line , Goda, Chanda, Dhai, Khaka,Thoka line, Trijunction Pillar, Alamat Khatian,Khanapuri, Bhujarat, J.L Number, RS Map, C.S Map, L.R Map, Parcha.

5.7 General principles of measurement of an area of regular and irregular boundary

- i) Using instruments (Acre Comb, Planimeter, Digital Planimeter etc.)
- ii) Mathematical calculation (division into squares, the mid-ordinate rule, the average ordinate rule, the trapezoidal rule and Simpson's rule.)

5.8 Balancing of error in area measurement. (Ground measurement and Sheet measurement)

5.9 Definition and Objective of traverse.

5.10 Classification of traverse: closed, open traverse

5.11 Methods of traverse based on instrument use: (A) By Chain and compass, (B) By theodolite.

5.12 : Field work: Reconnaissance; marking stations; reference sketches; running survey lines.

5.13 Cross staff survey:

- Objective;
- General principles: i) right angled triangle method ii) trapezoid method.
- instrument: i) Cross staff ii) chain / tape iii) ranging rods iv) plumb bob v) Peg vi) arrow
- offsets

**Practical Content:**

1. Conducting Cadastral Survey of a small area.
2. Finding area of a plot from Mouza map using Acre Comb, Planimeter, Digital Planimeter and Mathematical relations.
3. Balancing of error in area measurement.

**List of Tools, Equipment & materials needed for 20 Trainees:****A. Essential**

| <b>Sl. No</b> | <b>Instrument / Equipment</b>               | <b>Number</b> |
|---------------|---|---------------|
| 1             | Metric Chain (20m and 30m)                  | 2 no's each   |
| 2             | Engineering Chain                           | 1             |
| 3             | Gunter Chain                                | 2             |
| 4             | Tape (5m, 15m, 30m)                         | 5 no's each   |
| 5             | Cross staff                                 | 5             |
| 6             | Prismatic Compass                           | 5             |
| 7             | Auto Level with accessories                 | 5             |
| 8             | Dumpy Level with accessories                | 2             |
| 8             | Levelling Staff                             | 5             |
| 9             | Transit Vernier Theodolite with accessories | 5             |
| 10            | Acre comb                                   | 5             |
| 11            | Planimeter                                  | 5             |
| 12            | Ranging Rod                                 | 10            |
| 13            | Wooden mallet                               | 5             |
| 14            | Wooden peg                                  | 50            |
| 15            | Arrow                                       | 20            |
| 16            | Sample Cadastral Map                        | 1             |
| 17            | Offset rod                                  | 5             |
| 18            | Optical square                              | 5             |
| 19            | Leaser distance measure                     | 3             |

**B. Desirable**

| <b>Sl. No</b> | <b>Instrument / Equipment</b>           | <b>Number</b> |
|---------------|---|---------------|
| 1             | Digital Theodolite with all accessories | 1 set         |
| 2             | Digital Planimeter                      | 1             |
| 3             | Total Station with all accessories      | 1 set         |



# Egra Sarada Shashi Bhusan College

ESTD: 1968

(Reaccredited by NAAC with- "B" Grade with a CGPA of 2.32 . Egra (Bajkul Road), P.O.+P.S.

Egra, Dist. - PurbaMedinipur, W.B, Pin:721429,

Phone: 03220 244073, Email: info@egrassbcollege.ac.in Website: www.egrassbcollege.ac.in

President: Mr. Tarun Kumar Maity, MLA, WB.

Principal: Dr. Dipak Kumar Tamili

## Certificate Course on Amin Survey

*(A venture of skill development)*

Organized by

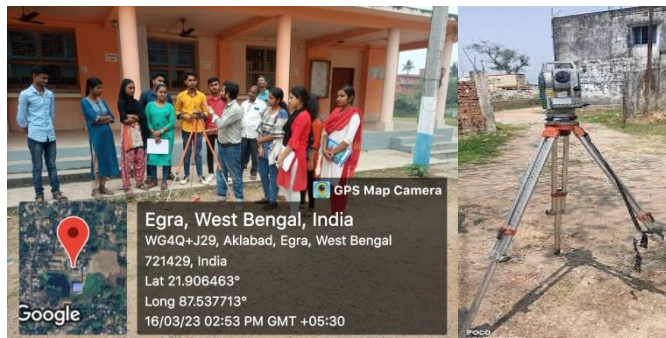
**Department of Geography**

**Egra S.S.B. College**

**Under Vidyasagar University, Modnapore.**

**Duration : Sixth Months**

**Eligibility criteria: see prescribe syllabus.**



**Course Co-ordinator:**  
**Dr. Dipak Bisai,**

**Associate Professor,**  
**Dept. of Geography.**  
[dbisai@gmail.com](mailto:dbisai@gmail.com)

### Our Objectives:

Student passing out from Egra S.S.B. College along with this certificate course degree, they will be employed in high positions in companies and Govt. aided services and also practice privately. Also our Certificate (Surveyor) and also Amin Survey & Drawing Works Approval Certificate (to work all over in India).

### Mission and vision:

The certificate course on Amin survey, organized by Dept. of Geography, under Vidyasagar University, is considered as a venture of skill development programme. Time frame of this course is 6 months. This course conceptualized the responsibility in the field of survey especially in Bhumisahayak. Our mission is to gear up the skill development of entire student's community. The specialized surveyor established himself or herself as a professional (Amin) surveyor in this field.



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ESTD. : 1968

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Post – Egra : Dist – PurbaMedinipur (West Bengal) : Pin – 721429.

President : Mr. Tarun Kumar Maity, MLA, W. B.

Principal : Dr. Dipak Kumar Tamili.

Website - [www.egrassbcollege.ac.in](http://www.egrassbcollege.ac.in) : E-mail – [info@egrassbcollege.ac.in](mailto:info@egrassbcollege.ac.in)

☎ – 03220-244073 / 245557 : Fax – 03220245867.



## Class Schedule for

### Six-Month Certificate Course in Amin Survey

(January 2023 – June 2023)

| Day       | Time              |
|-----------|-------------------|
| Tuesday   | 2.15 pm – 5.15 pm |
| Wednesday | 2.15 pm – 5.15 pm |
| Thursday  | 2.15 pm – 5.15 pm |
| Friday    | 2.15 pm – 5.15 pm |

#### *Faculty*

Dr. Dipak Bisai, Associate Professor & Course-Coordinator

Mr. Prosenjit Murmu, Assistant Professor & Head

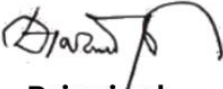
Mr. Srikrishna Paul, State Aided College Teacher

Mr. Soutik Kr. Das Mahapatra, State Aided College Teacher

Mrs. Sharmita Ghorai, State Aided College Teacher

*Note: The class schedule is inevitably subject to change.*



  
Principal

Principal  
EGRA S. S. B. COLLEGE  
P. O : Egra, Purba Medinipur  
West Bengal