

LESSON NOTE FOR WEEK THREE (3) ENDING 26TH SEPT, 2025.

SUBJECT: AGRICULTURAL SCIENCE.

TOPIC: FARM SURVEYING

CLASS SS2

DATE: 22ND SEPTEMBER, 2025

Farm surveying is the process of measuring the dimension of the farm land and its physical features for purpose of making appropriate recommendation for its best use.

Farm surveying is also the process of measuring and mapping out the position, topography, size and boundary of an area of farm land.

IMPORTANCE OF FARM SURVEYING.

1. To determine the size of farm land or hectare of farm land.
2. It is useful for the preparation of feasibility studies.
3. It makes farmers to make proper use of the land
4. It helps farmer to determine where to locate certain building or structures in the farm.
5. Results of farm survey can be used as collateral for securing loans from financial institution.
6. It facilitates acquisition of certificate of occupancy, etc.

SOME COMMON SURVEYING EQUIPMENT

Some of the surveying equipment are as follows.

1. Gunter's chain
2. Measuring tape
3. Arrows or pin
4. Theodolite
5. Off-set staff
6. Prismatic compass
7. Cross staff.
8. Beacon or pillar.
9. Ranging pole.

DESCRIPTION OF THE FARM SURVEYING EQUIPMENT.

RANGING POLE.

- i) It is made of metal or wood.
- ii) It is of varying lengths e.g. 1.8m, 2.4m, or 3.0m.
- iii) It is usually painted black, blight red and white to enable it to be seen from afar.
- iv) It is generally circular in section, though some are octagonal types are obtainable.

FUNCTIONS/USES.

1. It is used for making stations.
2. It is used for making straight lines.

GUNTER'S CHAIN

- i) It has dumb-bell shaped links of steel wires joined together by three small rings.
- ii) One gunter's chain is about 20.13m long (66ft).
- iii) It has a brass handle at each end.
- iv) It is divided into 100 links so that each link is 19.8cm or 7.92inches.

- v) The chain is enteral metallic.

USES/FUNCTIONS OF GUNTER'S CHAIN

1. It is used in marking short or detailed measurement of length and breadth.

MEASURING TAPE

- I) It is made of linen or fine steel sheet.
- II) One side is usually graduated in metric system of unit.
- III) They are normally rolled into a case for protection and easier handling.

FUNCTIONS/USES.

1. It is used for taking measurement of length and width.

ARROWS OR PIN

- I) They are made from steel wires of 30cm length with one end curved into a ring.
- II) A piece of red clothe is often attached to each one for easy identification in the field.

FUNCTIONS/USES.

1. It is use for marking of chain length.
2. It is also used for making station.

THEODOLITE.

- I) It consists of a tripod stand made of wood or light weight metal in solid or telescopic legs.
- II) The tripod stands form the base of the instrument.
- III) It has a lower plate which contains the graduated horizontal circle made of glass or brass.
- IV) It has a spirit level which is used to define horizontal plain against angles of elevation or depression are measure.

FUNCTIONS/USES.

1. It is used to measure horizontal or vertical angles or plane.
2. It can be used to estimate the height of tree trunks and differences in height level.

OFF-SET STAFF

- I) This is a graduated rod-3m long.
- II) A book may be fitted at the top for the purpose of pulling a chain through a hedge
- III) Tape is often used in place of off-set staff.

USES/ FUNCTIONS

1. It is used to take short distance called off-set from the chain line.

CROSS STAFF

- I) It is made up of four metal arms having vertical split in them.
- II) These two pairs of arms AB and BC are perpendicular to each other.
- III) It is supported on top of a wooden pole of 2.5cm diameter and 1.5cm in length.
- IV) The end of the pole is connected with an iron shoe to help provide grip when it is placed on the ground surface. The reason, it contains vertical slits to sight the object and the ranging rods.

FUNCTIONS/USES.

1. For measuring the angle between objects.
2. It is used to set out the perpendicular directions for offset.
3. It can be used to measure the location of objects in the sky or to determine the distance of object on the horizon.

PRISMATIC COMPASS

- I) It is made of a prism.
- II) A compass card calibrated into 360°
- III) It is divided into minutes and seconds in a clock wise direction.
- IV) It has a magnetized needle or pointer mounted in a circular metal box and rotates freely indicating the bearing of the reference point.

FUNCTIONS/USES.

- 1. It is used in taking bearing
- 2. It is also used in measuring angular distance.

BEACON OR PILLAR

- I) It is made of rectangular block usually in concrete form
- II) Marks are usually inscribed on top of the block.
- III) The beacons are always buried in the ground with marked head raised a little above the ground.

FUNCTIONS/USES

- 1. It is used to marking off point measured.
- 2. It is also used for recognition of the measured areas.

EVALUATION

- 1. Define farm surveying.
- 2. List the common surveying equipment.
- 3. Give two descriptions of each
- 4. State one use of each.