

Vidyasagar University

Curriculum for Agro - service (Major) [Choice Based Credit System]

Semester-I

| Course | Course Code | Name of the Subjects | Course Type/ Nature | Teaching Scheme in hour per week | | | Credit | Marks |
|-----------------------|-------------|--|---------------------|----------------------------------|---|---|-----------|------------|
| | | | | L | T | P | | |
| CC1 | | C1T: General Concepts on Agro-service and Horticulture (including olericulture floriculture and fruit production) | Core Course-1 | 4 | 0 | 0 | 6 | 75 |
| | | C1P: Basics of Agro-service and Horticulture | | 0 | 0 | 4 | | |
| CC2 | | C2T: Basic Concept of soil and Irrigation Management | Core Course-2 | 4 | 0 | 0 | 6 | 75 |
| | | C2P: Basic Concept of soil and Irrigation Management | | 0 | 0 | 4 | | |
| GE1 | | TBD | Generic Elective-1 | | | | 4/5 | 75 |
| | | | | | | | 2/1 | |
| AECC | | English | AECC (Elective) | 1 | 1 | 0 | 2 | 50 |
| Semester Total | | | | | | | 20 | 275 |

L=Lecture, **T**=Tutorial, **P**=Practical, **CC**- Core Course, **TBD** - To be decided, **AECC**- Ability Enhancement Compulsory Course

Generic Elective (GE) (Interdisciplinary) from other Department [Paper will be of 6 credits]. Papers are to be taken from following discipline: **Botany/Chemistry/Physics/Zoology /Economics**

Modalities of selection of Generic Electives (GE): A student shall have to choose **04** Generic Elective (**GE1 to GE4**) strictly from **02** subjects / disciplines of choice taking exactly **02** courses from each subjects of disciplines. Such a student shall have to study the curriculum of Generic Elective (GE) of a subject or discipline specified for the relevant semester.

SEMESTER-I

CORE COURSE (CC)

CC-1: General Concepts on Agro-service and Horticulture (including olericulture floriculture and fruit production) **Credits 06**

C1T: General Concepts on Agro-service and Horticulture (including olericulture floriculture and fruit production) **Credits 04**

THEORY **Lectures: 60**

Unit I : General concepts on Agro-service **(30 Lectures)**

1. Basic Concepts of Agro Service its scope and importance.
2. Types of service required for socio economic development of the farming community.
3. Agro climatic zone of West Bengal.
4. Concept of cropping system and cropping pattern.
5. Crop ecology – Microclimate, harvest index, sink source ratio, Ideotype for some crops.
6. Soil fertility and Productivity.
7. Soil classification and suitable land use, with special reference to West Bengal.
8. Problem and prospect of dry land agriculture
9. Erosion and soil conservation

Unit II: Basic Concept of Horticulture (Olericulture Floriculture & Fruit production) **(30 Lecture)**

1. Classification of vegetable and its importance
2. Cultivation of Tomato, Okra, Brinjal, Chillies, Cabbage, Cauliflower and some Cucurbit crops
3. Landscape gardening - history & development - Hindu Mughal English (Lawn Hedge Edge)
4. Formal and informal gardening: kitchen, rock
5. Cultivation of Rose and Chrysanthemum

6. Training and pruning of fruit crop, their objectives
7. Cause, nature and control of fruit drop affecting quality of fruit.

C1P: Basics of Agro-service and Horticulture

Credits 02

Practical

1. Characterization of soil classes based on particle structures. Study using sieves of different pore sizes.
2. Knowledge of agro-climatic zones of West Bengal by locating the regions on map.
3. Knowing different classes of vegetables, identification of them.

CC-2: Basic Concept of soil and Irrigation Management

Credits 06

C2T: Basic Concept of soil and Irrigation Management

Credits 04

THEORY

Lectures: 60

Unit I : Basic Concept of Soil

(30 Lectures)

1. Soil and its concept.
2. Physical properties of soil.
3. Soil air and soil water physical and biological classification of clay.
4. Soil colloid and its nature and importance chemical composition of clay.
5. Concept of problems soil i.e. Acid soil, Saline Soil and alkaline soil.
6. Analytical method of soil testing and fertilizer recommendation.

Unit II : Basic Concept of Irrigation Management

(30 Lectures)

1. Importance of irrigation in crop production
2. Water resources – Surface water, ground water and their uses.
3. Factors affecting water resources – Climate, Physiographic, Geological
4. Methods of irrigation:
 - a) Surface irrigation – i) Border-strip, ii) Cheek basin, iii) Furrow, iv) Ring method (for chards)

- b) Sprinkler and Drip irrigation
- 5. Conveyance of irrigation:
 - a) Conventional, b) Unlined & lined open channels c) Fixed & Flexible pipes, d) Underground pipe system
- 6. Irrigation Scheduling:
 - i) Time of irrigation, ii) Physiological stages of the crop, iii) Soil moisture status, iv) Soil-water tension, v) Evapo-transpiration.
- 7. Poor quality irrigation water – Saline, Sodic, Toxic and their management –
 - i) Land leveling, ii) Leaching & drainage, iii) Selection of crop, iv) Use of amendments, v) Application of organic.
- 8. Integrated (surface & ground water combination) irrigation management for sustainable agriculture.
- 9. Critical stages of irrigation in various crops.
- 10. Integrated irrigation Management.
- 11. Water shed Management.

C2P: Basic Concept of soil and Irrigation Management

Credits 02

Practical

- 1. Soil testing methods (pH, Cation Exchange Capacity, Total C, Total N, Ammonium N, Nitrate N, Organic matter, extractable P, K, Ca and Mg).
- 2. Identification of Acidic soil, Alkaline soil and Saline soil.
- 3. Test of Soil Salinity.
- 4. Knowledge about the appliances of irrigation and its accessories – nozzles for sprinkler and drip
- 5. Field based experience on types of irrigation, water shade and its management.

Vidyasagar University

Curriculum for Agro - service (Major) [Choice Based Credit System]

Semester-II

| Course | Course Code | Name of the Subjects | Course Type/ Nature | Teaching Scheme in hour per week | | | Credit | Marks |
|-----------------------|-------------|----------------------|-----------------------|----------------------------------|---|---|-----------|------------|
| | | | | L | T | P | | |
| CC3 | | C3T: Seed Science | Core Course-3 | 5 | 1 | 0 | 6 | 75 |
| CC4 | | C4T: Seed Production | Core Course-4 | 5 | 1 | 0 | 6 | 75 |
| GE2 | | TBD | Generic Elective-2 | | | | 4/5 | 75 |
| | | | | | | | 2/1 | |
| AECC | | ENVS | AECC (Elective) | | | | 4 | 100 |
| Semester Total | | | | | | | 22 | 325 |

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SEMESTER-II
CORE COURSE (CC)

CC-3: Seed Science **Credits 06**

C3T: Seed Science **Credits 06**

Course Contents:

THEORY

1. Seed – its importance in agricultural development
2. Seed morphology, development & classification.
3. Components of seed: seed coat, embryo, radical, plumule, cotyledon, endosperm.
4. Appendages of seeds: awn, hilum, micropyle, chalaza, rapha, caruncle, aril, hairs, wings.
5. Seed dormancy – types, factors, methods for breaking.
6. Propagules other than seed: corm, bulb, runner, bud, bulbil.

CC- 4: Seed Production **Credits 06**

C4T: Seed Production **Credits 06**

Course Contents:

THEORY

1. Basic principles of seed production.
2. Production techniques of some important crops of the locality.
3. Seed production in phases – Breeder seed, Foundation and Certified seed.
4. Qualities of improved seed and maintenance of purity
5. Deterioration of seeds and varieties.
6. Post-harvest handling – threshing, cleaning, drying, grading, seed treatment and storage.

7. Seed testing, seed certification and seed Act.
8. Concept of hybrid (F1) Seed production.
9. Methods of vegetative propagation ‘budding’ grafting, cutting, layering etc. and tissue culture technique.
