

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

CIT: 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, Chillis, 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.

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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

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-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.
