

# CBSE | DEPARTMENT OF SKILL EDUCATION

## CURRICULUM FOR SESSION 2021-2022

### **AGRICULTURE (SUBJECT CODE – 408)**

#### **JOB ROLE: SOLANACEOUS CROP CULTIVATOR**

#### **CLASS – X**

#### **INTRODUCTION:**

Agriculture has been the prime enterprise for the National Economy of this country for centuries and that is why India is called Agrarian country. This sector also provides maximum employment to the people of this country. Agriculture is the production of food and fiber, ever since its advent. It has undergone several paradigm changes. The major landmark in Agriculture happened during 1960s when the country witnessed Green Revolution which boosted the crop production. Use of short duration crop varieties, fertilizers, pesticides and agricultural tools and expansion of area under irrigation were important interventions brought in Agriculture. Livestock is an integral part of Agriculture in India. Their by-products are used to build and maintain soil fertility along with plant protection. The animal products such as meat, milk and eggs are the source of nutrients in human diet as well.

Several emerging dimensions of contemporary Agriculture such as organic agriculture and animal husbandry practices are now getting attention. Food processing, value addition and preservation have been the focus of policies formation in recent times which are helpful in minimizing the wastage in Agriculture. This is helping in better income realizing through marketing of value added products. The income from Agriculture can also be increased by associating in subsidiary enterprises such as mushroom production, bio-pesticides, bee-keeping, vermi-culture etc.

#### **COURSE OBJECTIVES:**

The board objectives of teaching Agriculture at Senior Secondary level are:

1. To help the students to comprehend the facts and importance of Agriculture.
2. To expose the students to crop production, animal husbandry, horticulture etc.
3. To familiarize the students with waste management and physical environment in Agriculture.
4. To expose the students to find better income and avenue generating avenue of agriculture and its associated activities.

#### **CURRICULUM:**

This course is a planned sequence of instructions consisting of Units meant for developing employability and Skills competencies of students of Class IX and X opting for Skills subject along with other subjects.

The unit-wise distribution of periods and marks for Class X is as follows:

**AGRICULTURE (SUBJECT CODE - 408)**

**CLASS – X (SESSION 2021-2022)**

**Total Marks: 100 (Theory-50 + Practical-50)**

	TERM	UNITS	NO. OF HOURS for Theory and Practical 200		MAX. MARKS for Theory and Practical 100
<b>Part A</b>	<b>Employability Skills</b>				
	<b>TERM I</b>	Unit 1 : Communication Skills-II	10		5
		Unit 2 : Self-Management Skills-II	10		
		Unit 3 : ICT Skills-II	10		
	<b>TERM II</b>	Unit 4 : Entrepreneurial Skills-II	15		5
		Unit 5 : Green Skills-II	05		
		<b>Total</b>	<b>50</b>	<b>10</b>	
<b>Part B</b>	<b>Subject Specific Skills</b>		<b>Theory (In Hours)</b>	<b>Practical (In Hours)</b>	<b>Marks</b>
	<b>TERM I</b>	Unit 1: Agricultural production and management	30	10	20
		Unit 2: Production and management of horticultural crops	25	08	
		Unit 3: Animal husbandry and dairying	10	08	
	<b>TERM II</b>	Unit 4: Post production handling, packaging and processing of animal products	15	08	20
		Unit 5: Seed production and nursery management	10	08	
		Unit 6: Entrepreneurial skill development	10	08	
			<b>Total</b>	<b>100</b>	<b>50</b>
<b>Part C</b>	<b>Practical Work</b>				
		Practical Examination			15
		Written Test			10
		Viva Voce			10
		<b>Total</b>			<b>35</b>
<b>Part D</b>	<b>Project Work / Field Visit</b>				
		Practical File / Student Portfolio			10
		Viva Voce			05
		<b>Total</b>			<b>15</b>
		<b>GRAND TOTAL</b>	<b>200</b>	<b>100</b>	

## **DETAILED CURRICULUM/TOPICS FOR CLASS X:**

### **Part-A: EMPLOYABILITY SKILLS**

<b>S. No.</b>	<b>Units</b>	<b>Duration in Hours</b>
1.	Unit 1: Communication Skills-II	10
2.	Unit 2: Self-management Skills-II	10
3.	Unit 3: Basic Information and Communication Technology Skills-II	10
4.	Unit 4: Entrepreneurial Skills-II	15
5.	Unit 5: Green Skills-II	05
	<b>TOTAL</b>	<b>50</b>

**NOTE:** For Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

### **Part-B – SUBJECT SPECIFIC SKILLS**

- Unit 1: Agricultural production and management
- Unit 2: Production and management of horticultural crops
- Unit 3: Animal husbandry and dairying
- Unit 4: Post production handling, packaging and processing of animal products
- Unit 5: Seed production and nursery management
- Unit 6: Entrepreneurial skill development

<b>UNIT 1: AGRICULTURAL PRODUCTION AND MANAGEMENT</b>	
1.	Brief Crop Production practices:
2.	Cereals- rice, wheat and maize.
3.	Pulses- chick pea, pigeon pea, pea, lentil, urd, moong and soybean.
4.	Oilseed- mustard, groundnut and sunflower.
5.	Fodder & fibre crops- berseem, cotton, jute and mesta.
6.	Commercial crop- Sugarcane, tea, coffee.)

<b>UNIT 2 : PRODUCTION AND MANAGEMENT OF HORTICULTURAL CROPS</b>	
1.	Fruits-mango, banana, guava, citrus, grapes, pomegranate, apple, cashew, coconut and areca nut.
2.	Vegetable- potato, cauliflower, cabbage, tomato, brinjal, chilli, bhindi, cucurbits, pea.
3.	Flower-Rose, tube rose, marigold.
4.	Spices- turmeric, coriander, cumin, black pepper.
5.	Note: Selected crops may be taken Crop Protection i). Common Pests, disease and management practices ii). Pesticides
6.	Post-Harvest handling of important agricultural produce.

**UNIT 3 : ANIMAL HUSBANDRY & DAIRYING**

1.	Nutrition and maintenance of livestock. Breeding and care of farm animals.
2.	Uses of livestock products and by-products.
3.	Vaccination schedule of common farm animals and poultry
4.	Important diseases of farm animals and their control

**UNIT 4 : POST PRODUCTION HANDLING, PACKAGING AND PROCESSING OF ANIMAL PRODUCTS**

1.	Handling of raw milk, pasteurization and packaging of heat processed milk.
2.	Common milk products : Paneer, Dahi, cheese, khoya, srikhand, butter, ghee, ice cream, milk powder, Chnna and Khoya based products
3.	Meat & meat products: chicken and mutton

**UNIT 5 : SEED PRODUCTION AND NURSERY MANAGEMENT**

1.	Common principles of pollination and fertilization in crops. Self and cross pollinated crops, Definition of pure lines, inbred, hybrids, composites and synthetics.
2.	Nursery bed preparation, treatment of nursery soil, seed treatment, seed sowing, care of seedlings in nursery, common nursery structures.

**UNITS 6 : ENTREPRENEURIAL SKILL DEVELOPMENT**

1.	Apiculture
2.	Lac culture
3.	Sericulture
4.	Pisciculture
5.	Mushroom culture
6.	Biogas, fertilizers and sanitation
7.	Processing of Horticultural Produce
8.	Terrarium preparation
9.	Ornamental fish culture

## **TEACHING ACTIVITIES**

The teaching and training activities have to be conducted in classroom, laboratory/ workshops and field visits. Students should be taken to field visits for interaction with experts and to expose them to the various tools, equipment, materials, procedures and operations in the workplace. Special emphasis should be laid on the occupational safety, health and hygiene during the training and field visits.

### **CLASSROOM ACTIVITIES**

Classroom activities are an integral part of this course and interactive lecture sessions, followed by discussions should be conducted by trained teachers. Teachers should make effective use of a variety of instructional or teaching aids, such as audio-video materials, colour slides, charts, diagrams, models, exhibits, hand-outs, online teaching materials, etc. to transmit knowledge and impart training to the students.

### **PRACTICAL WORK IN LABORATORY/WORKSHOP**

Practical work may include but not limited to hands-on-training, simulated training, role play, case based studies, exercises, etc. Equipment and supplies should be provided to enhance hands-on learning experience of students. Only trained personnel should teach specialized techniques. A training plan that reflects tools, equipment, materials, skills and activities to be performed by the students should be submitted by the teacher to the Head of the Institution.

### **SKILL ASSESSMENT (PRACTICAL)**

Assessment of skills by the students should be done by the assessors/examiners on the basis of practical demonstration of skills by the candidate, Practical examination allows candidates to demonstrate that they have the knowledge and understanding of performing a task. This will include hands-on practical exam and viva voce. For practical, there should be a team of two evaluators. The same team of examiners will conduct the viva voce.

**Project Work** (individual or group project) is a great way to assess the practical skills on a certain time period or timeline. Project work should be given on the basis of the capability of the individual to perform the tasks or activities involved in the project. Projects should be discussed in the class and the teacher should periodically monitor the progress of the project and provide feedback for improvement and innovation. Field visits should be organised as part of the project work. Field visits can be followed by a small-group work/project work. When the class returns from the field visit, each group might be asked to use the information that they have gathered to prepare presentations or reports of their observations. Project work should be assessed on the basis of practical file or student portfolio.

**Student Portfolio** is a compilation of documents that supports the candidate's claim of competence. Documents may include reports, articles, photos of products prepared by students in relation to the unit of competency.

**Viva voce** allows candidates to demonstrate communication skills and content knowledge. Audio or video recording can be done at the time of viva voce. The number of external examiners would be decided as per the existing norms of the Board and these norms should be suitably adopted/adapted as per the specific requirements of the subject. Viva voce should also be conducted to obtain feedback on the student's experiences and learning during the project work/field visits.

## **ORGANISATION OF FIELD VISITS/ EDUCATIONAL TOURS**

In a year, at least 3 field visits/educational tours should be organised for the students to expose them to the activities in the workplace.

Visit a Vegetable Farm and observe the following: Location, Site, Office building, Store, Pot yard, Packing Yard, Seed bed, Nursery bed, Water tank/Tube well, Gate and fencing. During the visit, students should obtain the following information from the owner or the supervisor of the Vegetable Farm:

1. Area under Cultivation and its layout
2. Types of vegetable raised
3. Name of varieties grown
4. Number of crops raised annually
5. Total production of particular vegetable grown annually
6. Sale procedure
7. Manpower engaged
8. Total expenditure of growing vegetables
9. Total annual income
10. Profit/Loss (Annual)
11. Any other information

### **LIST OF EQUIPMENT/ MATERIALS:**

The list given below is suggestive and an exhaustive list should be prepared by the Skill teacher. Only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience.

- |                                 |                                  |
|---------------------------------|----------------------------------|
| 1. Farmyard Manure              | 18. Plug trays                   |
| 2. Fertilizers                  | 19. Pruners                      |
| 3. Garden Hand Tools            | 20. Rabbiting Spade              |
| 4. Garden Hoes                  | 21. Sanitizers                   |
| 5. Garden Knife                 | 22. Secateurs                    |
| 6. Garden Rake                  | 23. Seed Cleaner                 |
| 7. Garden/Digging Fork          | 24. Seed Treating Equipment      |
| 8. Garden/Digging Spade         | 25. Shovels and Specialty Spades |
| 9. Hand Screens/Sieves          | 26. Soil Scoop                   |
| 10. Hoe                         | 27. Sprinkler Irrigation Unit    |
| 11. Hori Hori Knife             | 28. Drip Irrigation Unit         |
| 12. Knapsack Sprayer            | 29. Dutch Hand Hoe               |
| 13. Leaf Rake                   | 30. Trowels                      |
| 14. Long Handle Hoes            | 31. Vermicompost                 |
| 15. Loppers or Pruning Saw      | 32. Water Hose                   |
| 16. Plastics Baskets            | 33. Watering Can                 |
| 17. Poly bags (different sizes) | 34. Wheelbarrow or Garden Car    |