

Curriculum For Off Season Vegetable Producer

Short term Curriculum

(Competency Based)



**Council for Technical Education and Vocational Training
Curriculum Development Division**

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Introduction:

This curriculum has been developed with a purpose of preparing off season vegetable producer as a lower level technical workforce able to get employment in the country. The technical skills incorporated in this curriculum come from the field of off season vegetable production. Its contents are organized in the form of modules. So it is a tailor made curriculum with a special purpose to be implemented in a modular form.

It is a competency based curriculum. It is also designed to produce lower level technical workforce in the field of off season vegetable production equipped with skills and knowledge related to off season vegetable production in order to meet the demand of such workforce in the country so as to contribute in the national streamline of poverty reduction

The main aim of this curricular program is to produce skilled workforce in the field of off season vegetable production by providing training to the potential citizen of the country and link them to employment opportunities in the country. The aims of this curriculum are:

- To produce lower level technical workforce in the area of off season vegetable production
- To produce such technical workforce who will be able to serve the community and household people through the application of the off season vegetable production techniques being an entrepreneur.

Duration:

The total duration of this curricular program will be **390 hours** [three months].

Target group:

The target group for this training will be all the interested individuals of the country with minimum literate.

Group size:

The group size of this training program will be not more than 30.

Target location:

The target location of this training program will be all over Nepal.

Medium of Instruction:

The medium of instruction for this training program will be Nepali or English or both.

Pattern of attendance:

The trainees should have 80% attendance in theory classes and 90% in Practical (Performance) to be eligible for internal assessment and final examinations.

Focus of the program:

This is a competency based curriculum. This curriculum emphasizes on competent performance of the task specified in it. Not less than 80% time is allotted to the competencies and not more than 20% to the related technical knowledge. So, the main focus will be on the performance of the specified competencies/tasks /skills included in this curriculum.

Entry criteria:

Individuals who meet the following criteria will be allowed to enter in this curricular program:

- Able to read and write
- Physically and mentally fit
- Preference will be given to female, Dalit, Janjati, and Conflict affected people.

Follow up suggestion:

This is not a training program only for training sake. The ultimate success of this program will rest on the proficiency of the graduates of this training program in providing services in the community either by wage employment or by self-employment.

In other to assess the success of this program and collect feedbacks/inputs for the revision of the program, a schedule of follow up is suggested as follows:-

- First follow up: - Six months after the completion of the training program.
- Second follow up: - Six months after the completion of the first follow up.
- Follow up cycle: - In a cycle of one year after the completion of second follow up for five years

Certificate requirement:

The related training institute will provide the certificate of “Off season vegetable producer” to those individuals who successfully complete all the tasks with their related technical knowledge specified in this curriculum.

Student evaluation details:

- Continuous evaluation of the trainees’ performance is to be done by the related instructor/trainer to ensure the proficiency over each competency.
- Related technical knowledge learnt by the trainees will be evaluated through written or oral tests as per the nature of the content
- Trainees must secure minimum marks of 60% in an average of both theory and practical evaluations.

Trainers’ qualification:

- Bachelor's degree in the related field
- Good communicative & instructional skills.
- Experience in the related field.

Trainer – trainees ratio:

- 1:10 for practical classes
- Depends on the nature of subject matter and class room situation for theory classes.

Suggestion for instruction:

1.Demonstrate task performance

- Demonstrate task performance in normal speed
- Demonstrate slowly with verbal description of each and every steps in the sequence of activity flow of the task performance using question and answer techniques
- Repeat the above step for the clarification on trainees demand if necessary.
- Perform fast demonstration of the task performance.

2. Provide trainees the opportunity to practice the task performance demonstrated.

- Provide trainees to have guided practice:- create environment for practicing the demonstrated task performance and guide the trainees in each and every step of task performance
- Provide trainees the opportunity to repeat & re-repeat as per the need to be proficient on the given task performance
- Switch to another task demonstration if and only if the trainees developed proficiency in the given task performance

3.Evaluation performance of the trainees/ student

- Perform task analysis
- Develop a detail task performance check list
- Perform continuous performance evaluation of the trainees / students by applying the performance check list.

List of modules and sub-modules

- 1. Site, soil, fertilizer, and nursery management**
 1. Site for off season vegetable cultivation
 2. Soil and fertilizer management
 3. Nursery management

- 2. Off season vegetable production**
 1. Off season vegetable production technology
 2. Vegetable production in plastic house
 3. Production of off season vegetables

- 3. Disease and pest management**
- 4. Storage and post harvest loss control**
 1. Post harvest loss control
 2. Storage of off season vegetables

- 5. Marketing, recording and communication**
 1. Marketing of off season vegetables
 2. Records management
 3. Communication

Course Structure

Modules/Sub-modules	Time(hrs)		
	Th	Pr	Tot.
1. Site, soil, fertilizer, and nursery management	21	43	64
1. Production plan, Site selection for off season vegetable cultivation	4	5	9
	6	16	22
2. Soil and fertilizer management	11	22	33
3. Nursery management			
2. Off season vegetable production	51	169	220
1. Off season vegetable production technology	11	11	22
2. Vegetable production in plastic house	18	72	90
3. Production of off season vegetables	22	86	108
3. Disease and pest management	8	32	40
4. Storage and post harvest loss control	6	16	22
1. Post harvest loss control	4	14	18
2. Storage of off season vegetables	2	2	4
5. Marketing, recording and communication	11	13	24
1. Marketing of off season vegetables	7	7	14
2. Records management	2	3	5
3. Communication	2	3	5
6. Entrepreneurship Development	8	12	20
Total:			390

Modules and sub modules

Module: 1: Site, soil, fertilizer, and nursery management

Description: It deals with the knowledge and skills related to site/field selection; soil and fertilizer management; and nursery management for off season vegetable cultivation/production.

Objectives: After its completion the trainees will be able:

1. To select site/field for off season vegetable cultivation
2. To manage soil and fertilizer
3. To manage nursery

Sub-modules:

1. Site for off season vegetable cultivation
2. Soil and fertilizer management
3. Nursery management

Sub module: 1.1: Production plan, Site selection for off season vegetable cultivation

Description: It deals with the knowledge and skills/tasks related to selecting site / field for off season vegetable cultivation / production. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To select site for off season vegetable cultivation/production

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(4 hrs) + Pr.(5 hrs) = tot.(9 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. Prepare calendar for off season vegetable production	<p>Condition (Given): Paper, pen, poster, pumplet</p> <p>Task(What): Prepare monthly operational calendar for off season vegetable production.</p> <p>Standard(How well): month-wise plan of operations.</p>	<p>Introduction and importance of off season vegetable production</p> <p>Importance and elements of calendar</p>	0.5	0	0.5
2. Compare Seasonal and off season vegetable production	<p>Condition (Given): Paper, pen, poster, pumplet</p> <p>Task(What): Compare with cost of production, cultivation methods, market price.</p> <p>Standard(How well): Accurate to local Market</p>	<p>Comparative Study of seasonal and off season vegetable production on the basis of cultivation practices, cost of production, management practices, market price and other items.</p>	0.5	0	0.5

3. Select site for off season vegetable production	<p><u>Condition (Given):</u> production site with basic requirements</p> <p><u>Task(What):</u> Select site for off season vegetable production</p> <p><u>Standard(How well):</u> Meet all basic requirements</p>	Basic requirements: soil, sun light, location, source of irrigation availability of labour, inputs, transportation and market	0.8	0.2	1
4. Treat soil of selected site	<p><u>Condition (Given):</u> Selected field, soil treating chemicals, tools and materials</p> <p><u>Task(What):</u> Treat soil of selected site</p> <p><u>Standard(How well):</u> Reduction of soil born disease and insect pests.</p>	<ul style="list-style-type: none"> • Concept and importance of soil treatment • Method of soil treatment (physical and Chemical) • Record keeping 	0.4	0.6	1
5. Prepare list of information to be collected from the site/field	<p><u>Condition (Given):</u> a sample list of information</p> <p><u>Task(What):</u> Prepare list of information to be collected from the site/field</p> <p><u>Standard(How well):</u> Cultivation/production decision based on the sample information</p>	<p><u>Data/information to be collected:</u></p> <ul style="list-style-type: none"> • Preparation of the list of information to be collected from the site/field • Precautions • Record keeping 	0.4	0.6	1
6. Prepare site/field visit plan	<p><u>Condition (Given):</u> Visit plan</p> <p><u>Task(What):</u> Prepare site/field visit plan for off season vegetable</p> <p><u>Standard(How well):</u> Cultivation/production decision based on the sample visit plan.</p>	<p><u>Site/field visit plan:</u></p> <ul style="list-style-type: none"> • Concept, importance, process, and application of site//field visit plan for determining off season vegetable cultivation/production • Precautions • Record keeping 	0.4	0.6	1
7. Visit the site/field	<p><u>Condition (Given):</u> Site/field visit plan off season vegetable production.</p> <p><u>Task(What):</u> Visit site/field for off season vegetable.</p> <p><u>Standard(How well):</u> Decision based on the</p>	<p><u>Site/field visit:</u></p> <ul style="list-style-type: none"> • Concept, importance, process, and application of site//field visit for determining off season vegetable. • Precautions • Record keeping 	0.4	0.6	1

	production plan.				
8. Collect site/field data/information	<p><u>Condition (Given):</u> a list of information to be collected</p> <p><u>Task(What):</u> Collect site/field data/information</p> <p><u>Standard(How well):</u> Decision <u>based on</u> the list of information.</p>	<p><u>Data/information collection:</u></p> <ul style="list-style-type: none"> • Concept of information and data • Data/information collection and recording • Use of checklist • Precautions • Record keeping 	0.4	0.6	1
9. Analyze the data /information collected	<p><u>Condition (Given):</u> Collected data/information, paper and pen</p> <p><u>Task(What):</u> Analyze the data /information collected</p> <p><u>Standard(How well):</u> decision <u>based on</u> the data/information.</p>	<p><u>Data analyzing & information processing:</u></p> <ul style="list-style-type: none"> • Concept of: <ul style="list-style-type: none"> ▪ Data ▪ Information ▪ Data analysis ▪ Information processing • Data analysis technique • Precautions • Record keeping 	0.4	0.6	1
10. Select site/field	<p><u>Condition (Given):</u> the analyzed data/information</p> <p><u>Task(What):</u> Select site/field</p> <p><u>Standard(How well):</u> <u>Based on</u> the site/field data/information and the site/field selection criteria for off season vegetable cultivation/production.</p>	<p><u>Selection:</u></p> <ul style="list-style-type: none"> • Concept of site/field selection • Use of site/field selection criteria for off season vegetable • Precautions • Record keeping 	0.5	0	0.5
11. Prepare report	<p><u>Condition (Given):</u> A sample report, Paper, pen</p> <p><u>Task(What):</u> Prepare report</p> <p><u>Standard(How well):</u> <u>Based on</u> the sample report.</p>	<p><u>Report writing:</u></p> <ul style="list-style-type: none"> • Concept of: <ul style="list-style-type: none"> ▪ Report ▪ Format of report ▪ Components of report • Precautions • Record keeping 	0.5	0	0.5
		Total:	4	5	9

Sub module: 1.2: Soil and fertilizer management

Description: It deals with the knowledge and skills/tasks related to selecting site / field for off season vegetable cultivation / production. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To manage soil and fertilizer

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(6 hrs) + Pr.(16 hrs) = tot.(22 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. Take soil sample	<p>Condition (Given): Field, Soil sampling tools and materials.</p> <p>Task(What): Take soil sample</p> <p>Standard(How well): Sample should be <u>representative</u> of whole field under consideration.</p>	<p>Take soil sample:</p> <ul style="list-style-type: none"> • Concept • Need/importance • Principle • Procedure • Application • Precautions and recording 	1.0	1.0	2
2. Test soil pH	<p>Condition (Given): Soil sample and soil testing kit box</p> <p>Task(What): Test soil pH</p> <p>Standard(How well): Test result should be <u>within</u> tolerable range of accuracy.</p>	<p>Testing soil pH:</p> <ul style="list-style-type: none"> • Concept • Need/importance • Principle • Tolerable range of accuracy • Procedure • Application • Precautions and recording 	0.5	1.5	2
3. Analyze soil	<p>Condition (Given): soil sample</p> <p>Task(What): Analyze soil</p> <p>Standard(How well): The results should be <u>within</u> tolerable range of accuracy.</p>	<p>Analyzing soil:</p> <ul style="list-style-type: none"> • Concept of the technique of soil analysis • Need /importance • Principle • Tolerable range of accuracy • Procedure • Application • Precautions and recording 	0.5	1.5	2

4. Solarize soil	<p><u>Condition (Given):</u> Soil sample and materials</p> <p><u>Task(What):</u> Solarize soil</p> <p><u>Standard(How well):</u> The results should be <u>within</u> time range.</p>	<p><u>Solarize soil:</u></p> <ul style="list-style-type: none"> • Importance of solarization. • Soil borne disease and insects • Plastic quality 	0.5	1.5	2
5. Classify plant nutrients	<p><u>Condition (Given):</u> Classification system</p> <p><u>Task(What):</u> Classify plant nutrients</p> <p><u>Standard(How well):</u> classification should be <u>as per</u> system.</p>	<p><u>Classification of nutrients:</u></p> <ul style="list-style-type: none"> • Plant nutrients • Classification systems • Precautions and recording 	0.5	1.5	2
6. Calculate fertilizer amount	<p><u>Condition (Given):</u> Area/field, recommended NPK dose, calculator, fertilizer</p> <p><u>Task(What):</u> Calculate fertilizer amount</p> <p><u>Standard(How well):</u> The result of calculations should of 100% accuracy.</p>	<p><u>Calculating fertilizer:</u></p> <ul style="list-style-type: none"> • Concept • Formulae • Calculation procedure • Precautions and recording 	0.5	1.5	2
7. Prepare compost/FYM	<p><u>Condition (Given):</u> Composting materials, dung, decomposing materials and tools</p> <p><u>Task(What):</u> Prepare compost/FYM</p> <p><u>Standard(How well):</u> As per given steps for composting.</p>	<p>Concept of compost and FYM</p> <p>Importance of organic manure</p> <p>Methods of compost making.</p> <p>Composting materials.</p>	0	2	2
8. Apply organic manure	<p><u>Condition (Given):</u> Recommended rate, compost or FYM, area of land.</p> <p><u>Task(What):</u> Apply organic manure.</p> <p><u>Standard(How well):</u> In right amount, time place, and method taking for all the necessary precautions.</p>	<p><u>Applying organic fertilizer:</u></p> <ul style="list-style-type: none"> • Organic manure • Types • Sources • Nutrient content • Application methods • Time for application • Role for fertility improvement • Precautions and recording 	0.5	1.5	2

9. Apply N/P/K containing fertilizer	<p><u>Condition (Given):</u> Recommended dose/rate, area of land, N/P/K containing fertilizer</p> <p><u>Task(What):</u> Apply N/P/K containing fertilizer</p> <p><u>Standard(How well):</u> The application should be done in right amount, time, place, and methods taking all the necessary precautions.</p>	<p><u>N/P/K containing fertilizer:</u></p> <ul style="list-style-type: none"> • Chemical fertilizers • N,P & K containing fertilizers • Fertilizers commonly found in the local market • Nutrient percentage in fertilizers • Methods of application • Precautions and recording 	0.5	1.5	2
10. Apply micronutrients and hormones	<p><u>Condition (Given):</u> Recommended dose/rate, Micro nutrients and hormones</p> <p><u>Task(What):</u> Apply micronutrients and hormones</p> <p><u>Standard(How well):</u> Application should be done <u>in right</u> amount, time, place, and methods taking all the necessary precautions.</p>	<ul style="list-style-type: none"> • Micronutrients/hormones and their role • Commonly found micronutrients and hormones in the local market • Nutrient content • Methods of micronutrients and hormones application • Precautions and recording 	0.5	1.5	2
11. Apply techniques of crop rotation.	<p><u>Condition (Given):</u> field, crop rotational plan/schedule and cropping calendar, list of suitable crop for rotation</p> <p><u>Task(What):</u> Apply techniques of crop rotation</p> <p><u>Standard(How well):</u> As per the rotational plan/schedule</p>	<p><u>Crop rotation:</u></p> <ul style="list-style-type: none"> • Concept • Principle and Practices of crop rotation. • Plan/schedule • Role of crop rotation in soil/fertility improvement • Precautions and recording 	0.5	1.5	2
Total:			6	16	22

Sub module: 1.3: Nursery management

Description: It deals with the knowledge and skills/tasks related to nursery management for off season vegetable cultivation / production. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To manage nursery for off season vegetable cultivation/production

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(11 hrs) + Pr.(22 hrs) = tot.(33 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. Select Vegetable crops varieties	<p><u>Condition (Given):</u> List of vegetable crops and varieties</p> <p><u>Task(What):</u> Select Vegetable crops varieties</p> <p><u>Standard(How well):</u> High valued crops selected, Resistant variety (Heat, cold, Disease/pest)</p>	<p><u>Selection criterias</u> High market valued crops in off season. Resistant variety Heat/cold resistant Pest and disease resistance Early and late varieties</p>	1	0	1
2. Select field for nursery beds	<p><u>Condition (Given):</u> Field selection criteria</p> <p><u>Task(What):</u> Select field for nursery beds</p> <p><u>Standard(How well):</u> Meet all the basic Requirements for a nursery bed.</p>	<p><u>Field for nursery beds:</u></p> <ul style="list-style-type: none"> • Concept and importance • Basic consideration for field selection of nursery bed • Precautions • Record keeping 	1	1	2
3. Treat soil	<p><u>Condition (Given):</u> Field /soil to be treated and soil treating material</p> <p><u>Task(What):</u> <u>Treat soil</u></p> <p><u>Standard(How well):</u> In right amount, time, place, method and safety for treatment.</p>	<p><u>Soil treatment:</u></p> <ul style="list-style-type: none"> • Concept & need / importance • Principles, procedures, and application • Safety precautions • Record keeping 	1	2	3

4. Prepare the mixture of soil, sand and manure	<p><u>Condition (Given):</u> Ratio of the mixing materials, Mixing tools, soil, sand and manure.</p> <p><u>Task(What):</u> Prepare the mixture of soil, sand and manure</p> <p><u>Standard(How well):</u> As per the standard ratio taking all the necessary precautions.</p>	<p><u>Soil preparation:</u></p> <ul style="list-style-type: none"> • Concept & need / importance of the mixture of soil, sand,& manure • Ratio of the mixture of soil, sand,& manure • Precautions • Record keeping 	1	2	3
5. Prepare beds	<p><u>Condition (Given):</u> the dimension and type of beds, tools and material</p> <p><u>Task(What):</u> Prepare beds</p> <p><u>Standard(How well):</u> As per the given dimension and types by taking all the necessary precautions.</p>	<p><u>Preparation of beds:</u></p> <ul style="list-style-type: none"> • Concept & need / importance • Principles, process, and methods of vegetable seed beds • Dimension and types of beds. • Safety precautions • Record keeping 	1	2	3
6. Sow seeds on nursery bed.	<p><u>Condition (Given):</u> Seeds, prepared nursery beds</p> <p><u>Task(What):</u> Sow seeds</p> <p><u>Standard(How well):</u> Appropriate sowing methods applied according to seeds types.</p>	<p><u>Sowing of seed</u></p> <ul style="list-style-type: none"> • Method of seed sowing • Qualities of good seed • Concept of seed germination • Concept and methods of dormancy breaking • Safety precautions • Record keeping 	1	2	3
7. Grow seedlings in plastic bags/tray/other structures	<p><u>Condition (Given):</u> Seeds and plastic bags, tray and other structure</p> <p><u>Task(What):</u> Grow seedlings in plastic bags/tray/other structures</p> <p><u>Standard(How well):</u> follow standard procedural steps.</p>	<p><u>Seedlings in plastic bags/tray/other structures:</u></p> <ul style="list-style-type: none"> • Concept & need / importance • Technology of growing seedlings • Steps and procedures of growing seedlings • Safety precautions • Record keeping 	1	2	3

8. Make plastic tunnel	<p><u>Condition (Given):</u> Dimension & layout design of plastic tunnel, Tools and materials.</p> <p><u>Task(What):</u> Make plastic tunnel</p> <p><u>Standard(How well):</u> Made plastic tunnel according to the given dimension & layout design.</p>	<p><u>Plastic tunnel:</u></p> <ul style="list-style-type: none"> • Concept & need / importance of plastic tunnel • Layout design of plastic tunnel • Materials for making plastic tunnel • Procedure for making plastic tunnel • Safety /precautions • Record keeping 	1	2	3
9. Grow seedlings in plastic tunnel	<p><u>Condition (Given):</u> Seeds and plastic tunnel</p> <p><u>Task(What):</u> Grow seedlings in plastic tunnel</p> <p><u>Standard(How well):</u> Follow standard procedural steps for growing seedlings in plastic tunnel.</p>	<p><u>Seedlings in plastic tunnel:</u></p> <ul style="list-style-type: none"> • Why, when, and how to grow seedlings in plastic tunnel • Techniques of growing seedlings in plastic tunnel • Safety /precautions • Record keeping 	1	2	3
10. Care seedlings	<p><u>Condition (Given):</u> Nursery bed with seedlings. Schedule for caring seedlings,</p> <p><u>Task(What):</u> Care seedlings</p> <p><u>Standard(How well):</u> As per the given schedule taking all the necessary precautions.</p>	<p><u>Care for seedlings:</u></p> <ul style="list-style-type: none"> • Concept & need • Schedule for caring the seedlings • Hardening • Caring for seedlings- principles, procedures, and safety • Precautions • Record keeping 	1	2	3
11. Manage disease and pests	<p><u>Condition (Given):</u> Schedule for managing disease and pests,</p> <p><u>Task(What):</u> Manage disease and pests</p> <p><u>Standard(How well):</u> As per the given schedule taking all the necessary safety and precautions during disease and pest management.</p>	<p><u>Disease and pests:</u></p> <ul style="list-style-type: none"> • Concept of disease, pest, and their management. • Common diseases & pests of off season vegetable seedlings, their identification & management. • Schedule for managing disease and pests • Safety precautions • Record keeping 	1	2	3

12. Transplant seedlings	<p><u>Condition (Given):</u> Standard seedlings, Prepared field.</p> <p><u>Task(What):</u> Transplant seedlings</p> <p><u>Standard(How well):</u> follow the procedural steps of seedling transplanting in accurate spacing by taking all the necessary precautions.</p>	<p><u>Transplanting seedlings:</u></p> <ul style="list-style-type: none"> • Concept and need • Principle • When and where to be transplant • Precaution during transplanting • Procedure • Record keeping 	1	2	3
		Total:	11	22	33

Module: 2: Off season vegetable production

Description: It deals with the knowledge and skills related to site/field selection; soil and fertilizer management; and nursery management for off season vegetable cultivation/production.

Objectives: After its completion the trainees will be able:

1. To apply off season vegetable production technology
2. To produce off season vegetables in plastic house
3. To produce off season vegetables

Sub-modules:

1. Off season vegetable production technology
2. Vegetable production in plastic house
3. Production of off season vegetables

Sub module: 2.1: Off season vegetable production technology

Description: It deals with the knowledge and skills/tasks related to off season vegetable production technology. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To apply off season vegetable production technology

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(10 hrs) + Pr.(10 hrs) = tot.(20 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State concept of off season vegetable cultivation/production/farming	<p><u>Condition (Given):</u> Classroom</p> <p><u>Task(What):</u> state the concept of off season vegetable cultivation/production /farming</p> <p><u>Standard(How well):</u> Concept provided</p>	<p><u>Concept of:</u></p> <ul style="list-style-type: none"> • Off season • Cultivation • Production • Farming • Safety • Precautions • Recording 	1	1	2
2. Enlist	<u>Condition (Given):</u>	<u>Advantages:</u>	1	1	2

advantages/ disadvantages of off season vegetable farming	Classroom, Paper and pen <u>Task(What):</u> Enlist advantages/ disadvantages of off season vegetable farming <u>Standard(How well):</u> List of advantages/ disadvantages of off season vegetable farming available.	<ul style="list-style-type: none"> • Concept of off season vegetable farming • Advantages of off season vegetable farming • Recording 			
3. Enlist methods of off season vegetable production in Nepal	<u>Condition (Given):</u> Classroom, Pen, paper <u>Task(What):</u> Enlist the methods of off season vegetable production in Nepal <u>Standard(How well):</u> Able to enlist methods	<u>Methods of off season vegetable production:</u> <ul style="list-style-type: none"> • Methods of off season vegetable production in Nepal • Recording 	1	1	2
4. Enlist off season vegetables and their varieties	<u>Condition (Given):</u> Classroom paper, pen <u>Task(What):</u> Enlist off season vegetables and their varieties <u>Standard(How well):</u> Able to enlist off season vegetables	<u>Off season vegetables:</u> <ul style="list-style-type: none"> • Concept • Types • Varieties • Profitable off season vegetables and their varieties • Identification of the off season vegetables and their varieties • precautions • Report keeping 	1	1	2
5. Utilize diverse agro climatic conditions	<u>Condition (Given):</u> List of diverse agro climatic region of Nepal <u>Task(What):</u> Utilize diverse agro climatic conditions <u>Standard(How well):</u> Can be utilized the diverse agro climatic conditions	<u>Agro climatic Regions of Nepal:</u> <ul style="list-style-type: none"> • Concept of different agro climatic conditions • Relation between different agro climatic conditions and off season vegetable production • Precautions • Records keeping 	1	1	2

6. Adjust planting time	<p><u>Condition (Given):</u> Cropping calendar, field</p> <p><u>Task(What):</u> Adjust planting time</p> <p><u>Standard(How well):</u> Off season vegetables could be produced.</p>	<p><u>Adjustment in planting time:</u></p> <ul style="list-style-type: none"> • Concept & importance • Practices of adjusting planting time • Application of planting time adjustment in off season vegetable production • Precautions • Records keeping 	1	1	2
7. Apply the principle of plastic tunnel	<p><u>Condition (Given):</u> Classroom, field.</p> <p><u>Task(What):</u> Apply principle of plastic tunnel</p> <p><u>Standard(How well):</u> Off season vegetables could be produced.</p>	<p><u>Plastic tunnel:</u></p> <ul style="list-style-type: none"> • The principle of plastic tunnel • Making plastic tunnel • Applying the principle of plastic tunnel for off season vegetable production • Precautions • Records keeping 	1	1	2
8. Apply Plant Growth Regulator (PGR)/hormones	<p><u>Condition (Given):</u> field, Growth Regulator (PGR)/hormones</p> <p><u>Task(What):</u> Apply Plant Growth Regulator (PGR)/hormones</p> <p><u>Standard(How well):</u> Trainees will be able to apply PGR/hormones so that the off season vegetables could be produced. Dose calculated.</p>	<p><u>PGR/hormones</u></p> <ul style="list-style-type: none"> • Types of hormones • Principle of application of PGR/hormones for off season vegetable production • Doses calculation • Precautions • Records keeping 			
9. Apply the principle of plastic/polythene house	<p><u>Condition (Given):</u> Field, Classroom</p> <p><u>Task(What):</u> Apply the principle of plastic/polythene house</p> <p><u>Standard(How well):</u> The trainees will be able to apply principle of plastic/polythene house.</p>	<p><u>Plastic/polythene house:</u></p> <ul style="list-style-type: none"> • The principle of plastic/polythene house • Making plastic/polythene house • Applying the principle of plastic/polythene house for off season vegetable production • Precautions • Records keeping 	1	1	2

<p>10. Utilize permanent glass house</p>	<p><u>Condition (Given):</u> Permanent glass house</p> <p><u>Task(What):</u> Utilize permanent glass house</p> <p><u>Standard(How well):</u> The trainees will be able to utilize permanent glass house</p>	<p><u>Permanent glass house:</u></p> <ul style="list-style-type: none"> • Concept, features, and use of permanent glass house • Managing/utilizing/maintaining permanent glass house • Applying the principle of permanent glass house • Advantage and disadvantage of permanent glass house. • Precautions • Records keeping 	<p>1</p>	<p>1</p>	<p>2</p>
		<p>Total:</p>	<p>10</p>	<p>10</p>	<p>20</p>

Sub module: 22.:Vegetable production in plastic house

Description: It deals with the knowledge and skills/tasks related to vegetable production in plastic house for off season vegetable cultivation / production. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To produce vegetables in plastic house

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(18 hrs) + Pr.(72 hrs) = tot.(90 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State concept /types of plastic house vegetable production	<p>Condition (Given): Classroom</p> <p>Task(What): State concept /types of plastic house vegetable production</p> <p>Standard(How well): Able to state types of plastic houses.</p>	<p><u>Plastic house vegetable production:</u></p> <ul style="list-style-type: none"> • Concept • Types of plastic house • Need /importance • Advantages and disadvantages • Technology of plastic house vegetable production • Keeping records 	2	8	10
2. Select site for making plastic house	<p>Condition (Given): Criteria for site selection,</p> <p>Task(What): Select site for making plastic house</p> <p>Standard(How well): On basis of the given criteria.</p>	<p><u>Site for making plastic house:</u></p> <ul style="list-style-type: none"> • Concept • Need /importance • Basic requirements for selecting site for making plastic house • Precautions • Keeping records 	2	8	10
3. Prepare Plan for making plastic house	<p>Condition (Given): List of required materials, Dimension of a sample plastic house</p> <p>Task(What): Prepare plan for making plastic house</p> <p>Standard(How well): As per the given dimension and sample.</p>	<p><u>Planning for making plastic house:</u></p> <ul style="list-style-type: none"> • Concept • Need /importance • Planning for making a plastic house • Precautions • Keeping records 	2	8	10

4. Layout plastic house	<p><u>Condition (Given):</u> Sample layout, dimension and design, measuring tools</p> <p><u>Task(What):</u> Layout a plastic house</p> <p><u>Standard(How well):</u> As per the standard design and dimension.</p>	<p><u>Layout of plastic house:</u></p> <ul style="list-style-type: none"> • Concept • Need /importance • Principle and procedure for lay out a plastic house • Layout design • Plastic house plan • Precautions • Keeping records 	2	8	10
5. Prepare plastic house for off season vegetable production	<p><u>Condition (Given):</u> Site. dimensions, and layout design, tools and materials.</p> <p><u>Task(What):</u> Prepare a plastic house</p> <p><u>Standard(How well):</u> <u>As per</u> the standard dimension and design.</p>	<p><u>Prepare plastic house:</u></p> <ul style="list-style-type: none"> • Site • Shape and size (dimension) • Area • Construction materials • Selection of plastics • Care and maintenance of plastic house • Principle and procedures • Expenses needed • Precautions • Keeping records 	2	8	10
6. Prepare planting beds inside plastic house	<p><u>Condition (Given):</u> Plastic house, Land preparing tools and a checklist</p> <p><u>Task(What):</u> Prepare planting beds inside plastic house</p> <p><u>Standard(How well):</u> <u>as per</u> the crop requirements</p>	<p><u>Preparing the plastic house:</u></p> <ul style="list-style-type: none"> • Concept and need • Creating suitable agricultural conditions (planting beds, path, irrigation facilities, ventilation) for the growth and development of the off season vegetables inside the plastic house • Techniques of preparing inside beds according to the crop requirements. • Care and maintenance of beds • Precautions • Keeping records 	2	8	10

7. Select crop/seeds for off season vegetable production in plastic houses	<p><u>Condition (Given):</u> Selection criteria, list of vegetable crops and their varieties</p> <p><u>Task(What):</u> Select crop/seeds for off season vegetable production in plastic houses</p> <p><u>Standard(How well):</u> <u>As per</u> the given list and criteria.</p>	<p><u>Selecting crop/seeds:</u></p> <ul style="list-style-type: none"> • Identification of profitable crop/verities/seeds for off season vegetable production in plastic houses • Selection criteria • Selecting profitable crop/verities/seeds for off season vegetable production in plastic houses • Precautions • Keeping records 	2	8	10
8. Apply vegetable production technology in plastic houses	<p><u>Condition (Given):</u> Plastic house, seeds and seedling</p> <p><u>Task(What):</u> Apply vegetable production technology in plastic houses</p> <p><u>Standard(How well):</u> Application of technology as per the crop standard.</p>	<p><u>Technology of vegetable production in plastic houses:</u></p> <ul style="list-style-type: none"> • Concept • Advantages • Technology of vegetable production in plastic houses • Application • Precautions • Keeping records 	2	8	10
9. Grow vegetables in plastic houses	<p><u>Condition (Given):</u> Plastic house, seeds and seedling</p> <p><u>Task(What):</u> Grow vegetables in plastic houses</p> <p><u>Standard(How well):</u> Application of technology as per the crop standard.</p>	<p><u>Growing vegetables in plastic houses:</u></p> <ul style="list-style-type: none"> • Concept • Principles and procedures for growing vegetables in plastic houses • Seeding and planting/transplanting procedures • Intercultural operations • Growing various types of vegetables in plastic houses • Caring for the growing vegetables in plastic houses • Harvesting • Grading • Storing • Consuming and selling • Precautions • Keeping records 	2	8	10
Total:			18	72	90

Sub module: 2.3: Production of off season vegetables

Description: It deals with the knowledge and skills/tasks related to the production of various off season vegetable cultivation / production. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To produce various types of off season vegetables

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(22 hrs) + Pr.(86 hrs) = tot.(104 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. Make plan/schedule for off season vegetable cultivation/ production	<p>Condition (Given): cropping calendar, sample plan/schedule</p> <p>Task(What): Make plan/schedule for off season vegetable cultivation/ production</p> <p>Standard(How well): As per the given plan/schedule.</p>	<p><u>Plan/schedule for off season vegetable cultivation/ production:</u></p> <ul style="list-style-type: none"> • Concept • Planning / scheduling process • Making a plan/schedule for off season vegetable cultivation/production • Precautions • Records keeping 	2	5	7
2. Perform off season cultivation/ production of capsicum (भंडे खुर्सानी)	<p>Condition (Given): Prepared seedlings, field and checklist</p> <p>Task(What): Perform off season cultivation/production of capsicum (भंडे खुर्सानी)</p> <p>Standard(How well): As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/ production of capsicum (भंडे खुर्सानी)</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Training/pruning • Off season cultivation/production technology of capsicum • Checklist of procedural steps for its cultivation / production based on the recent technology. • Precautions & records keeping 	2	5	7

<p>3. Perform off season cultivation/production of radish (मूला)</p>	<p><u>Condition (Given):</u> Seed, prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/production of radish (मूला)</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation/production based on the recent technology.</p>	<p><u>Off season cultivation/production of radish (मूला):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Off season cultivation/production technology of radish • Checklist of procedural steps for its cultivation / production based on the recent technology • Thinning • Precautions & records keeping 	2	5	7
<p>4. Perform off season cultivation/production of carrot (गाजर)</p>	<p><u>Condition (Given):</u> Seed, prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/production of carrot (गाजर)</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation /production based on the recent technology.</p>	<p><u>Off season cultivation/production of carrot (गाजर):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Off season cultivation/production technology of carrot • Checklist of procedural steps for its cultivation / production based on the recent technology • Thinning • Precautions & records keeping 	2	5	7
<p>5. Perform off season cultivation/production of cucumber (काँका)</p>	<p><u>Condition (Given):</u> Seed/seedling, prepared land and checklist,</p> <p><u>Task(What):</u> Perform off season cultivation/production of cucumber (काँका)</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation</p>	<p><u>Off season cultivation/production of cucumber (काँका):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Identification of male and female flowers. • Staking and tinning 	2	5	7

	/ production based on the recent technology.	<ul style="list-style-type: none"> • Training/pruning • Off season cultivation/production technology of cucumber • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 			
6. Perform off season cultivation/ production of tomato (गोलभेंडा)	<p><u>Condition (Given):</u> Seedlings prepared land and checklist,</p> <p><u>Task(What):</u> Perform off season cultivation/production of tomato (गोलभेंडा)</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/ production of tomato (गोलभेंडा):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Training/pruning • Staking and tinning • Drip irrigation • Off season cultivation/production technology of tomato • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	2	6	8
7. Perform off season cultivation/ production of squash (जुकैनि फर्सि)	<p><u>Condition (Given):</u> Seed/seedling, Prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/production of squash (जुकैनि फर्सि)</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/production of squash (जुकैनि फर्सि):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Off season cultivation/production technology of squash • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	2	6	8

<p>8. Perform off season cultivation/ production of bitter gourd (करेला)</p>	<p><u>Condition (Given):</u> Seeds/seedling, prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/production of bitter gourd (करेला)</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/ production of bitter guard (करेला):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Staking and tinning • Off season cultivation/production technology of bitter guard • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	1	7	7
<p>9. Perform off season cultivation/ production of (sponge/ ridge) gourd (घिरौला)</p>	<p><u>Condition (Given):</u> Seeds/Seedling prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/ production of (sponge/ridge) gourd (घिरौला)</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation /production based on the recent technology.</p>	<p><u>Off season cultivation/production of (sponge/ridge) gourd (घिरौला):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Staking and tinning • Off season cultivation/production technology of gourd (sponge/ridge gourd) • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	1	6	7
<p>10. Perform off season cultivation/pr oduction of onion (प्याज)</p>	<p><u>Condition (Given):</u> Seedlings, prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/production of onion (प्याज)</p> <p><u>Standard(How well):</u> As per the given checklist of</p>	<p><u>Off season cultivation/production of onion (प्याज):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Off season cultivation/ production technology of 	1	6	7

	procedural steps for its cultivation / production based on the recent technology.	onion through set. <ul style="list-style-type: none"> • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 			
11. Perform off season cultivation /production of cauliflower	<p><u>Condition (Given):</u> Seedlings, prepared land and checklist,</p> <p><u>Task(What):</u> Perform off season cultivation/production of cauliflower</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/production of cauliflower:</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and planting time • Off season cultivation/production technology of cauliflower • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	1	6	7
12. Perform off season cultivation/ production of cabbage	<p><u>Condition (Given):</u> seedlings, prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/production of cabbage</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/ production of cabbage:</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and planting time • Off season cultivation/production technology of cabbage • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	1	6	7
13. Perform off season cultivation/ production of Lady's Finger (भिन्डी)	<p><u>Condition (Given):</u> Seed, prepared land and checklist</p> <p><u>Task(What):</u> Perform off season cultivation/production of Lady's Finger (भिन्डी)</p>	<p><u>Off season cultivation/ production of Lady's Finger (भिन्डी):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time 	1	6	7

	<p>Standard(How well): As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<ul style="list-style-type: none"> • Off season cultivation/production technology of Lady's Finger (भिन्डी) • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 			
14. Perform off season cultivation/ production of French bean (सिमी)	<p>Condition (Given): seeds, prepared land and checklist</p> <p>Task(What): Perform off season cultivation/production of French bean (सिमी)</p> <p>Standard(How well): As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/ production of French bean:</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Staking • Off season cultivation/production technology of French bean • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	1	6	7
15. Perform off season cultivation/ production of cow pea (तने बोडी)	<p>Condition (Given): seeds, prepared land a checklist</p> <p>Task(What): Perform off season cultivation/ production of cow pea (तने बोडी)</p> <p>Standard(How well): As per the given checklist of procedural steps for its cultivation / production based on the recent technology.</p>	<p><u>Off season cultivation/ production of cow pea (तने बोडी):</u></p> <ul style="list-style-type: none"> • Varieties and their identification • Soil & climate • Crop distance and sowing time • Staking • Off season cultivation/production technology of cow pea (तने बोडी) • Checklist of procedural steps for its cultivation / production based on the recent technology • Precautions & records keeping 	1	6	7
		Total:	22	86	108

Module: 3: Disease, pest and weed management

Description: It deals with the knowledge and skills / tasks related to disease and pest management necessary for off season vegetable cultivation/production. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objectives: After its completion the trainees will be able:

- To manage diseases of off season vegetables
- To manage insects of off season vegetables
- To manage other pest of off season vegetables

Tasks: To fulfill the objectives the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(8 hrs) + Pr.(32 hrs) = tot.(40 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State concept of: <ul style="list-style-type: none"> • Disease • Insects/pests/weeds • Management/control of disease/pests 	<p><u>Condition (Given):</u> classroom, pen, paper</p> <p><u>Task(What):</u> State concept of disease, insects, pests, weeds and management of disease/pests/weeds</p> <p><u>Standard(How well):</u> Able to understand the concept of disease, insects/pests/weeds, management/control of disease/pests/weeds</p>	<p><u>Concept of:</u></p> <ul style="list-style-type: none"> • Disease • Insects/pests/weeds • Management/control of disease/pests/weeds • Records keeping 	2	8	10
2. Identify diseases of off season vegetables.	<p><u>Condition (Given):</u> List of signs and symptoms and crops/field with diseases</p> <p><u>Task(What):</u> Identify diseases of off season vegetables.</p> <p><u>Standard(How well):</u> Identification as per the basis of the sign and symptoms</p>	<p><u>Common diseases of off season vegetables:</u></p> <ul style="list-style-type: none"> • List of diseases • Signs and symptoms • Identification of diseases • Precautions & recording 	2	8	10

<p>3. Identify beneficial/harmful insects/pests /weeds</p>	<p><u>Condition (Given):</u> List of characteristic features and nature of damage</p> <p><u>Task(What):</u> Identify beneficial/harmful insects/pests/weeds</p> <p><u>Standard(How well):</u> Identification on the basis of the given list and nature of damage.</p>	<p><u>Beneficial &harmful insects(pests):</u></p> <ul style="list-style-type: none"> • Concept and difference between beneficial and harmful insects(pests) • List of beneficial/harmful insects/pests • Identification of beneficial/harmful insects/pests • Nature of damage caused by the harmful insects & their time of attack • Precautions & recording 	2	8	10
<p>4. Manage/control diseases/insects /weeds/pests</p>	<p><u>Condition (Given):</u> Schedule, controlling tools and materials.</p> <p><u>Task(What):</u> Manage/control diseases/insects/weeds/pests</p> <p><u>Standard(How well):</u> As per the given schedule for managing and controlling of the diseases/pests.</p>	<p>Diseases/insects/weeds/pests</p> <ul style="list-style-type: none"> • Relationship among disease, insects/pests/weeds vegetable crops and environment • Concept of integrated disease and pest management • Principle, procedures, and application of integrated pest management (IPM) • Techniques/methods/processes applied for management and control of diseases and pests of off season vegetable crops • Application of organic & chemical techniques in vegetable crop plant protection and their effects • Schedule for managing and controlling diseases/pests/weeds • Precautions & recording 	2	8	10
Total:			8	32	40

Module: 4: Storage and post harvest management

Description: It deals with the knowledge and skills related to reduce of post harvest loss and storage of off season vegetables.

Objectives: After its completion the trainees will be able:

- To reduce post harvest loss off season vegetables
- To store off season vegetables

Sub-modules:

1. Post harvest management
2. Storage of off season vegetables

Sub module: 4.1: Post harvest management

Description: It deals with the knowledge and skills/tasks related to post harvest loss control of off season vegetables. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To minimize post harvest loss of off season vegetables

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(4 hrs) + Pr.(14 hrs) = tot.(18 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State concept of post harvest losses of vegetables	<p><u>Condition (Given):</u> Classroom</p> <p><u>Task(What):</u> State concept of post harvest losses of vegetables</p> <p><u>Standard(How well):</u> Able to state concept of post harvest loss</p>	<p><u>Post harvest loss:</u></p> <ul style="list-style-type: none"> • Concept of post harvest loss of vegetables • Need to minimize post harvest loss • Methods to minimize post harvest loss • Precautions to be taken • Keeping records 	0.3	0.7	1.0
2. Enlist causes of post harvest losses	<p><u>Condition (Given):</u> Classroom</p> <p><u>Task(What):</u> Enlist causes of post harvest losses vegetables</p> <p><u>Standard(How well):</u> Able to enlist concept of loss</p>	<p><u>Causes of post harvest losses:</u></p> <ul style="list-style-type: none"> • Concept • Listing causes • Methods/techniques to remove the causes • Precautions to be taken • Keeping records 	0.3	0.7	1.0

3. Identify time of harvesting the crops	<p><u>Condition (Given):</u> List of vegetables, cropped field.</p> <p><u>Task(What):</u> Identify time of harvesting the crops</p> <p><u>Standard(How well):</u> Able to identify time of harvest as per the given list.</p>	<p><u>Harvesting the crops:</u></p> <ul style="list-style-type: none"> • Concept • Time • Precautions • Record keeping 	0.3	0.7	1.0
4. Enlist/state methods of harvesting the crops	<p><u>Condition (Given):</u> Classroom</p> <p><u>Task(What):</u> Enlist/state methods of harvesting the crops</p> <p><u>Standard(How well):</u> Able to enlist methods of harvesting.</p>	<p><u>Methods of harvesting the crops:</u></p> <ul style="list-style-type: none"> • Concept • Methods/processes • Precautions • Record keeping 	0.3	0.7	1.0
5. Enlist /state techniques of minimizing post harvest losses	<p><u>Condition (Given):</u> Classroom, sample crops</p> <p><u>Task(What):</u> Enlist /state techniques of minimizing losses</p> <p><u>Standard(How well):</u> Able to enlist techniques of minimizing post harvest losses.</p>	<p><u>Techniques of minimizing losses:</u></p> <ul style="list-style-type: none"> • Concept • Techniques of minimizing post harvest losses • Precautions • Record keeping 	0.4	1.0	1.4
6. Harvest crop	<p><u>Condition (Given):</u> Crop field, harvesting procedural checklist</p> <p><u>Task(What):</u> Harvest crop</p> <p><u>Standard(How well):</u> Able to harvest vegetable at right stage.</p>	<p><u>Harvesting the crop:</u></p> <ul style="list-style-type: none"> • Concept • Techniques of harvesting the crops • Time • Maturity indices • Loss reduction • Precautions • Record keeping 	0.4	2	2.4

7. Clean harvested vegetables	<p><u>Condition (Given):</u> Harvested crops, cleaning procedural checklist,</p> <p><u>Task(What):</u> Clean harvested vegetables</p> <p><u>Standard(How well):</u> As per the given checklist of procedural steps for the techniques of cleaning.</p>	<p><u>Cleaning:</u></p> <ul style="list-style-type: none"> • Concept • Techniques, method/process of cleaning • Loss reduction • Precautions • Record keeping 	0.4	1.0	1.4
8. Sort/trim the harvest	<p><u>Condition (Given):</u> Harvested crops and selection criteria</p> <p><u>Task(What):</u> Sort/trim the harvest</p> <p><u>Standard(How well):</u> As per the given criteria.</p>	<p><u>Selecting the harvest:</u></p> <ul style="list-style-type: none"> • Concept • Sorting/trimming criteria • Precautions • Record keeping 	0.4	1.6	2.0
9. Grade the harvest	<p><u>Condition (Given):</u> Harvested crops and grading criteria</p> <p><u>Task(What):</u> Grade the harvest</p> <p><u>Standard(How well):</u> As per the given criteria.</p>	<p><u>Grading:</u></p> <ul style="list-style-type: none"> • Concept and importance • Grading criteria and grading methods • Loss reduction • Precautions • Record keeping 	0.4	1.6	2.0
10. Pack the harvest	<p><u>Condition (Given):</u> Packaging materials, graded crops and procedural steps,</p> <p><u>Task(What):</u> Pack the harvest</p> <p><u>Standard(How well):</u> As per the given packing materials and procedural steps.</p>	<p><u>Packing:</u></p> <ul style="list-style-type: none"> • Concept • Packing materials, packing procedure and packing • Labeling • Size of package • Loss reduction • Precautions • Record keeping 	0.4	2.0	2.4
11. Store the harvest	<p><u>Condition (Given):</u> Store and procedural steps</p> <p><u>Task(What):</u> Store the harvest</p> <p><u>Standard(How well):</u> As per the given procedural steps.</p>	<p><u>Storing:</u></p> <ul style="list-style-type: none"> • Concept and safe storing • Storing procedure and place • Loss reduction • Precautions • Record keeping 	0.4	2.0	2.4
Total:			4	14	18

Sub module: 4.2: Storage of off season vegetables

Description: It deals with the knowledge and skills/tasks related to storage of off season vegetables. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To store off season vegetables

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(2 hrs) + Pr.(2 hrs) = tot.(4 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State the concept of storage of off season vegetable products	<p><u>Condition (Given):</u> Classroom, Vegetable checklist</p> <p><u>Task(What):</u> State the concept of storage of off season vegetable products</p> <p><u>Standard(How well):</u> Able to store based on specific vegetables</p>	<p><u>Concept of storage:</u></p> <ul style="list-style-type: none"> • Concept & importance • Factors affecting storage of off season vegetable products • Types • Storage loss • Precautions 	0.5	0.5	1.0
2. Enlist/state methods of storage	<p><u>Condition (Given):</u> Classroom, vegetables</p> <p><u>Task(What):</u> Enlist/state methods of storage</p> <p><u>Standard(How well):</u> Able to enlist methods</p>	<p><u>Methods of storage:</u></p> <ul style="list-style-type: none"> • Concept • Methods • Advantages, disadvantages & procedure of each • Zero energy storage • Precautions 	0.5	0.5	1.0
3. Perform simple storage	<p><u>Condition (Given):</u> Checklist of procedural steps, Store</p> <p><u>Task(What):</u> Perform simple storage</p> <p><u>Standard(How well):</u> As per the given steps.</p>	<p><u>Simple storage:</u></p> <ul style="list-style-type: none"> • Importance • Process • Application • Time • Expenses • Precautions & records keeping 	0.5	0.5	1.0
4. Perform cold storage	<p><u>Condition (Given):</u> Checklist of procedural steps, Cold store</p> <p><u>Task(What):</u> Perform cold storage</p> <p><u>Standard(How well):</u> As per the given steps.</p>	<p><u>Cool storage:</u></p> <ul style="list-style-type: none"> • Importance • Process • Application • Time • Expenses • Precautions & records keeping 	0.5	0.5	1.0
		Total:	2	2	4

Module: 5: Marketing, recording and communication

Description: It deals with the knowledge and skills related to marketing of off season vegetables, records management, and communication.

Objectives: After its completion the trainees will be able:

- To market off season vegetables
- To manage records
- To communicate with others

Sub-modules:

1. Marketing of off season vegetables
2. Records management
3. Communication

Sub module: 1: Marketing of off season vegetables

Description: It deals with the knowledge and skills/tasks related to the marketing of off season vegetables. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To market off season vegetables

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(7 hrs) + Pr.(7 hrs) = tot.(14 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State concept of vegetable marketing	<p>Condition (Given): Classroom, sample Price information</p> <p>Task(What): State concept of vegetable marketing</p> <p>Standard(How well): Able to state concepts</p>	<p><u>Vegetable marketing:</u></p> <ul style="list-style-type: none"> • Concept and importance • Functions of marketing <ul style="list-style-type: none"> ▪ Product ▪ Price ▪ Place ▪ Promotion • Records keeping 	1	1	2
2. Collect demand	<p>Condition (Given): Local market, a demand collection format/form</p> <p>Task(What): Collect demand</p> <p>Standard(How well): <u>As per the given format/form.</u></p>	<p><u>Demand:</u></p> <ul style="list-style-type: none"> • Concept and need • When, where, and how to collect demand • Demand analysis • Precautions • Records keeping 	1	1	2

<p>3. Prepare vegetable products for marketing</p>	<p><u>Condition (Given):</u> Procedural checklist and vegetable products</p> <p><u>Task(What):</u> Prepare vegetable products for marketing</p> <p><u>Standard(How well):</u> As per the given Marketing procedures.</p>	<p><u>Prepare the product:</u></p> <ul style="list-style-type: none"> • Concept and identification of vegetable products • Preparation of vegetable products to be sold • Grading • Packing • Temporary storage • Precautions • Records keeping 	1	1	2
<p>4. Price the vegetable product</p>	<p><u>Condition (Given):</u> List of various market prices/Price survey list .</p> <p><u>Task(What):</u> Price the vegetable product</p> <p><u>Standard(How well):</u> Able to estimate price based on the given various market price list.</p>	<p><u>Price the product:</u></p> <ul style="list-style-type: none"> • Concept and importance • Cost calculation • Pricing methods • Pricing decision • Precautions • Records keeping 	1	1	2
<p>5. Deliver the vegetable product in Market</p>	<p><u>Condition (Given):</u> Vegetable products</p> <p><u>Task(What):</u> Deliver the vegetable product in Market</p> <p><u>Standard(How well):</u> Able to deliver by taking all the necessary precautions.</p>	<p><u>Place the product:</u></p> <ul style="list-style-type: none"> • Concept and importance • Market • Marketing channel • Transportation and delivery • Precautions • Records keeping 	1	1	2
<p>6. Apply marketing promotional techniques.</p>	<p><u>Condition (Given):</u> the vegetable products,</p> <p><u>Task(What):</u> Apply marketing promotional techniques.</p> <p><u>Standard(How well):</u> Applying promotional techniques of publicity, advertisement, personnel selling, and sales promotion.</p>	<p><u>Promote the product:</u></p> <ul style="list-style-type: none"> • Concept and importance • Publicizing • Advertising • Personnel selling • Sales promoting • Precautions • Records keeping 	1	1	2

7. Sell the vegetable product	<p><u>Condition (Given):</u> Vegetable products, market</p> <p><u>Task(What):</u> Sell the vegetable product</p> <p><u>Standard(How well):</u> Able to sell according to market prices.</p>	<p><u>Sell the product:</u></p> <ul style="list-style-type: none"> • Concept and importance • Selling the vegetable product • Billing • Profit / loss calculation • Precautions • Records keeping 	1	1	2
Total:			7	7	14

Sub module: 5.2: Records management

Description: It deals with the knowledge and skills/tasks related to records management essential for off season vegetable farming. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To manage records for off season vegetable farming

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(2 hrs) + Pr.(3 hrs) = tot.(5 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State concept of records	<p><u>Condition (Given):</u> Classroom, Record keeping format</p> <p><u>Task(What):</u> State concept of records</p> <p><u>Standard(How well):</u> Able to state concept of records</p>	<p><u>Records:</u></p> <ul style="list-style-type: none"> • Concept • Need & importance • Types • Recording systems 	0.2	0.3	0.5
2. State concept of records management	<p><u>Condition (Given):</u> Classroom, sample record</p> <p><u>Task(What):</u> State concept of records management</p> <p><u>Standard(How well):</u> Able for managing record</p>	<p><u>Records management:</u></p> <ul style="list-style-type: none"> • Concept • Need & importance • Principle • Procedures • Application • Precautions 	0.2	0.3	0.5
3. Study market price	<p><u>Condition (Given):</u> Sample of market-price, study plan</p> <p><u>Task(What):</u> Study market price</p> <p><u>Standard(How well):</u> As per the given sample plan.</p>	<p><u>Market price:</u></p> <ul style="list-style-type: none"> • Price/pricing • Market price • Market price study/survey • Market price study / survey report • Precautions & record keeping 	0.2	0.3	0.5

4. List market price	<p><u>Condition (Given):</u> Sample list of market price, List of vegetables</p> <p><u>Task(What):</u> List market price</p> <p><u>Standard(How well):</u> As per the given sample list.</p>	<p><u>Market price listing:</u></p> <ul style="list-style-type: none"> • Format • Listing • Precautions • Records keeping 	0.2	0.3	0.5
5. Identify time for selling	<p><u>Condition (Given):</u> Sample report of market demand trend</p> <p><u>Task(What):</u> Identify time for selling</p> <p><u>Standard(How well):</u> Able to identify proper time</p>	<p><u>Time for selling:</u></p> <ul style="list-style-type: none"> • Concept • Profitable time for selling & its identification • Precautions & records keeping 	0.2	0.3	0.5
6. Prepare investment record	<p><u>Condition (Given):</u> Sample record,</p> <p><u>Task(What):</u> Prepare investment record</p> <p><u>Standard(How well):</u> Able to prepare investment record as per given sample</p>	<p><u>Investment records:</u></p> <ul style="list-style-type: none"> • Concept of- Investment & investment records • Importance • Process for its preparation • Precautions & records keeping 	0.2	0.3	0.5
7. Prepare income records	<p><u>Condition (Given):</u> Sample record</p> <p><u>Task(What):</u> Prepare investment record</p> <p><u>Standard(How well):</u> As per the given sample.</p>	<p><u>Income records:</u></p> <ul style="list-style-type: none"> • Concept • Need & importance • Income calculation • Preparing income records • Precautions & records keeping 	0.2	0.3	0.5
8. Prepare profit records	<p><u>Condition (Given):</u> Sample record</p> <p><u>Task(What):</u> Prepare profit records</p> <p><u>Standard(How well):</u> As per the given sample.</p>	<p><u>Profit records:</u></p> <ul style="list-style-type: none"> • Concept • Need & importance • Profit/loss calculation • Preparing profit records • Precautions & records keeping 	0.2	0.3	0.5

9. Prepare record formats for input, labour, production and marketing	<p><u>Condition (Given):</u> Sample record</p> <p><u>Task(What):</u> Prepare record formats for input, labour, production and marketing</p> <p><u>Standard(How well):</u> As per the given sample.</p>	<p><u>Record formats:</u></p> <ul style="list-style-type: none"> • Concept and needs • Types • Preparing record formats necessary for various farm activities • Precautions & records keeping 	0.2	0.3	0.5
10. Maintain records (input, labour, production and marketing)	<p><u>Condition (Given):</u> Sample records</p> <p><u>Task(What):</u> Maintain records (input, labour, production and marketing)</p> <p><u>Standard(How well):</u> Follow acceptable/standard recording system.</p>	<p><u>Maintaining records:</u></p> <ul style="list-style-type: none"> • Concept • Need & importance • Record maintaining system • Precautions & records keeping 	0.2	0.3	0.5
Total:			2	3	5

Sub module: 5.3: Communication

Description: It deals with the knowledge and skills/tasks related to communication necessary for off season vegetable business. Each task consists of terminal performance objective, minimum related technical knowledge necessary to carry out that very task in a competent/ professional manner, and time allocation for the task and its related knowledge.

Objective: After its completion the trainees will be able:

- To communicate with others for smooth running of the off season vegetable business

Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks together with their related technical knowledge:

Tasks	Th.(2 hrs) + Pr.(3 hrs) = tot.(5 hrs)		Time (hrs)		
	Terminal performance objective	Related technical knowledge	Th	Pr	Tot
1. State concept of communication	<p><u>Condition (Given):</u> Classroom</p> <p><u>Task(What):</u> State concept of communication</p> <p><u>Standard(How well):</u> Able to state concept of communication</p>	<p><u>Communication:</u></p> <ul style="list-style-type: none"> • Concept • Need and importance • Types • Process • Means • Barriers • Precautions • Activity records 	0.25	0.25	0.5
2. Make/receive telephone calls/messages	<p><u>Condition (Given):</u> Telephone</p> <p><u>Task(What):</u> Make/receive telephone calls/messages</p> <p><u>Standard(How well):</u> <u>Follow</u> all the necessary precautions.</p>	<p><u>Handling telephone:</u></p> <ul style="list-style-type: none"> • Making calls • Receiving calls • Massage / information • Delivery of message/ information • Precautions • Handling and care • Recording 	0.25	0.25	0.5
3. Write letters/messages/information	<p><u>Condition (Given):</u> Samples letter/messages/information</p> <p><u>Task(What):</u> Write letters/messages/information</p> <p><u>Standard(How well):</u> As per the given samples.</p>	<p><u>Writing letters/messages/information:</u></p> <ul style="list-style-type: none"> • Concept • Why, when, where, whom, and how to write letters/messages/information • Precautions to be taken • Keeping activity records 	0.25	0.25	0.5

4. Communicate with input suppliers	<p><u>Condition (Given):</u> List of input suppliers, Information</p> <p><u>Task(What):</u> Communicate with input suppliers</p> <p><u>Standard(How well):</u> Able to communicate with input suppliers in right time, place, and manner.</p>	<p><u>Communicating with input suppliers:</u></p> <ul style="list-style-type: none"> • Concept • Need • Message / information to be communicated • Communicating with input suppliers • Dealing with input suppliers • Precautions to be taken • Keeping activity records 	0.25	0.5	0.75
5. Communicate with consumers	<p><u>Condition (Given):</u> List of consumers, Information</p> <p><u>Task(What):</u> Communicate with consumers</p> <p><u>Standard(How well):</u> Able to communicate with consumers in right time, place, and manner.</p>	<p><u>Communicating with consumers:</u></p> <ul style="list-style-type: none"> • Concept • Need • Message / information to be communicated • Communicating with consumers • Dealing with consumers • Precautions to be taken • Keeping activity records 	0.25	0.5	0.75
6. Communicate with traders	<p><u>Condition (Given):</u> List of traders, information</p> <p><u>Task(What):</u> Communicate with traders</p> <p><u>Standard(How well):</u> Able to communicate with traders in right time, place, and manner.</p>	<p><u>Communicating with marketers:</u></p> <ul style="list-style-type: none"> • Concept • Need • Message / information to be communicated • Communicating with marketers • Dealing with marketers • Precautions to be taken • Keeping activity records 	0.25	0.25	0.5
7. Communicate with seniors/ juniors/ peers	<p><u>Condition (Given):</u> List of seniors, messages/information,</p> <p><u>Task(What):</u> Communicate with seniors/ juniors/ peers</p> <p><u>Standard(How well):</u> Able to communicate with seniors/ juniors/ peers in right time, place, and manner.</p>	<p><u>Communicating with seniors:</u></p> <ul style="list-style-type: none"> • Concept • Need • Message / information to be communicated • Communicating with seniors • Dealing with seniors • Precautions to be taken • Keeping activity records 	0.25	0.5	0.75

8. Visit internet site	<p><u>Condition (Given):</u> Messages/information, internet</p> <p><u>Task(What):</u> Visit internet site</p> <p><u>Standard(How well):</u> Able to get required information in right time, place.</p>	<p><u>Visit internet site</u></p> <ul style="list-style-type: none"> • Concept • Need • Message / information to be communicated • Familiar with email, internet • Keeping activity records 	0.25	0.5	0.75
		Total:	2.0	3.0	5

मोड्यूल : ६ उद्यमशीलता विकास (Entrepreneurship Development)

समय : १८ घण्टा (सै) + २२ घण्टा (ब्या) = ४० घण्टा

Course description

This course is designed to impart the knowledge and skills necessary for micro enterprise startup. The entire course intends to provide basics of entrepreneurial characteristics, finding viable business idea and developing business plan.

Course objectives

After completion of this course students will be able to:

1. Understand concept of entrepreneurship and business
2. Explore viable business idea
3. Learn to prepare business plan

SN	Task statements	Related technical knowledge	Time (hrs)		
			T	P	Tot.
1.	State the concept of entrepreneurship/ business/enterprises	<ul style="list-style-type: none"> • Introduction to entrepreneurship • Classification of enterprises • Benefits of self employment 	1		1
2.	Grow entrepreneurial attitudes	<ul style="list-style-type: none"> • Wheel of success • Risk taking attitude 	2		2
3.	Generate viable business ideas	<ul style="list-style-type: none"> • Business idea generation • Evaluation of business ideas • Creativity and innovation 	2		2
4.	Prepare business plan	<ul style="list-style-type: none"> • Concept of market and marketing • Description of product or service • Selection of business location • Estimation of market share • Promotional measures • Required fixed assets and cost • Required raw materials and costs • Operation process flow • Required human resource and cost • Office overhead and utilities • Working capital estimation • Unit price calculation • Cost benefit analysis • Information collection guidelines 	2	10	12
5.	Prepare basic business records	<ul style="list-style-type: none"> • Day book • Payable & receivable account 	1	2	3
Total:			8	12	20

Text book:

क) प्रशिक्षकहरूका लागि निर्मित निर्देशिका तथा प्रशिक्षण सामग्री, प्राविधिक शिक्षा तथा व्यावसायिक तालीम परिषद्, २०६९
 ख) प्रशिक्षार्थीहरूका लागि निर्मित पाठ्यसामग्री तथा कार्यपुस्तिका, प्राविधिक शिक्षा तथा व्यावसायिक तालीम परिषद् (अप्रकाशित), २०६९

Reference book:

Entrepreneur's Handbook, Technonet Asia, 1981

Reading materials:

- Related publications of CTEVT, NARC, DOA, IAAS, and HICAST
- Instructor selected related reading materials available in the local market.
- Instructor prepared hand outs, notes, manuals, and other reading materials.

Facilities

- Enough administration buildings
- Spacious class rooms
- Enough field for off season vegetable cultivation
- Storing facility
- Well equipped multipurpose room
- Computer with internet / e-mail facility
- Telephone facility
- Toilet facility
- Electricity facility
- Clean water supply facility
- Library facility
- Vehicle [optional]
- Canteen [optional]
- Hostel [optional]

उपकरण तथा औजार :

कार्यशाला/फिल्डमा चाहिने आवश्यक औजार तथा उपकरणहरु (२० जना प्रशिक्षार्थीहरुको लागि)

सि.नं	विवरण	परिमाण
१	खुर्पी	५ वटा
२	कुटो (पाते)	२ वटा
३	स्प्रेयर (१० लिटर)	५ वटा
४	Water Can (५ लिटर)	२ वटा
५	pH kit box	२ वटा
६	Spade	५ वटा
७	Sickle (हाँसिया)	५ वटा
८	Measuring Tape (१० मी.)	५ वटा
९	Hammer ½ कि.ग्रा.	५ वटा
१०	Tray -CoCo Tray) 1.5' X 1.5'	५ वटा
११	Hand Saw	१ वटा
१२	Nails	१ वटा
१३	Rope	१ रोल
१४	Rake	२ वटा
१५	Khanti	१ वटा
१६	GI wire	२ कि.ग्रा.
१७	Scissors	२ वटा
१८	Axe	१ वटा
१९	Rose can	१ वटा
२०	Insecticides	आवश्यकता अनुसार
२१	Fungicides	आवश्यकता अनुसार
२२	Duster	१ वटा
२३	Insect Collecting Net	५ वटा
२४	Insect Collecting Box	५ वटा
२५	Insect Killing Bottle	५ वटा
२६	Pin	१ पाकेट
२७	Grader	५ वटा
२८	Cartoon/Box	आवश्यकता अनुसार
२९	Weighing Balance	१ वटा
३०	Knife	वटा

आवश्यक स्टेशनरी/विविध सामग्रीहरू

१	कापी	१ दर्जन
२	डटपेन	१ दर्जन
३	सार्पनर ठूलो	२ थान
४	करेक्सन पेन	१ दर्जन
५	साइन पेन	३ दर्जन
६	पाइलट/जेल पेन	३ दर्जन
७	इरेजर	३ दर्जन
८	पेन्सील	३ दर्जन
९	फलाटिन कपडा	१० मीटर
१०	नमुना	१२ थान
११	कार्वन पेपर नीलो/सेतो	२-२ प्याकेट
१२	फिलिप चार्ट पेपर	आवश्यकता अनुसार
१३	फ्ल्यास कार्ड	आवश्यकता अनुसार
१४	फोटोकपी पेपर	आवश्यकता अनुसार
१५	फाइल	आवश्यकता अनुसार
१६	हवाइट बोर्ड	१ थान
१७	बोर्ड मार्कर	१ दर्जन
१८	परमानेन्ट मार्कर	१ दर्जन
१९	डस्टर	२ थान

नोट : तालीमका बखत सैद्धान्तिक विषयको प्रशिक्षणका क्रममा उपलब्ध हुन सक्ने अवस्थामा ओभरहेड प्रोजेक्टर, फ्लिपचार्ट बोर्ड, पिन बोर्ड प्रयोगमा ल्याउन सकिनेछ ।