Curriculum
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Banana Fiber Craftsperson
(Banana Fiber Processor)

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Introduction

This curriculum for Banana fiber processor is designed to produce lower level technical workforce equipped with knowledge and skills related to Banana fiber processing. It makes the trainees able to get opportunities for wage and self-employment in the related occupational field.

Aim

To produce lower level agriculture workers (Banana fiber processor) able to provide banana fiber processing services in the community being an entrepreneur/employee/self employed.

Objectives

After the completion of this training program, the trainees will be able:
- To be familiar with banana and its fiber
- To be familiar with manufacture of banana fibers
- To perform banana fiber extraction
- To produce banana fiber yarns
- To produce banana fiber cloth
- To produce marketable banana fiber products
- To perform marketing of banana fiber products

Course description

This curriculum provides skills & knowledge necessary for Banana fiber processor. There will be both demonstration by instructors/trainers and opportunity by trainees to perform skills/tasks specified in this curriculum. Trainees will practice & learn skills using typical tools, materials, equipment & machines necessary for the program.

After successful completion of this program the trainees will be equipped with the knowledge and skills related to introduction to banana/ banana fiber; manufacture of banana fibers; banana fiber extraction; banana fiber yarn production; banana fiber cloth production; producing marketable banana fiber products; and marketing of banana fiber products.

Course structure

(Banana fiber processor)

Module/ sub modules	Nature	Time			Marks		
		Th	Pr.	Tot.	Th	Pr.	Tot.
1. Introduction-10	T + P	5	10	15	5	20	25
2. Manufacture of banana fibers-13	T + P	13	39	52	10	40	50
3. Banana fiber extraction-26	T + P	13	39	52	10	40	50
4. Banana fiber yarn-4	T + P	8	40	48	5	20	25
5. Banana Fiber Cloth-10	T + P	10	40	50	5	20	25
6. Producing marketable banana fiber products-32	T + P	32	96	128	20	80	100
7. Marketing of banana fiber products-15	T + P	15	30	45	5	20	25
106- Sub total:		96	294	390	60	240	300
8. Common module	**T + P**	14	56	70	10	40	50
1. Applied math	T + P	4	16	20			
2. Occupational health and safety	T + P	2	8	10			
3. First aid	T + P	1	4	5			
4. HIV/AIDS	T + P	1	4	5			
5. Communication	T + P	2	8	10			
6. Small enterprise development	T + P	4	16	20			
Total:		110	350	460	70	280	350

Duration

The total duration of the course will be of 390 hours (three months) of specialized modules plus 70 hours of a common module.

Target group

All interested individuals in the field of agriculture with educational prerequisite of class eight pass.

Group size

 Maximum of thirty

Medium of instruction

Nepali or English or both

Pattern of attendance
- 80% attendance in theory
- 90% in practical/ performance

Focus of curriculum

This curriculum emphasizes on competency /performance. 80% time is allocated for performance and only 20% for related technical knowledge. So the focus will be on performance of the specified competencies in the curriculum

Entry criteria
- Minimum of eight class pass or equivalent
- Minimum of 14 years of age
- Should pass entrance examination

Follow up suggestions

In order to assess the success of this program and collect feedbacks/ inputs for the revision of the curriculum a schedule of follow up is suggested as follows:
- First follow up: - Six months after the completion of the 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 the second follow up for five years

Certificate

The related training institute will provide the certificate of "Banana Fiber Processor". Again, individuals who complete module (s) of the curriculum will receive a certificate of completion of the particular module(s).

Grading
- Distinction: passed with 80% or above
- First division: passed with 75% or above

- Second division: passed with 65% or above
- Third division: passed with 60% or above

Students evaluation

- Continuous evaluation of the trainees' performance is to be done by the related instructor/ trainer to ensure the proficiency over each competency under each of the sub-module.
- Related technical knowledge learnt by trainees will be evaluated through written or oral tests.
- Trainees must secure minimum marks of 60% in an average of both theory and practical evaluations.
- There will be three internal evaluations and one final evaluation in each module.
- The entrance test will be conducted by the concerned training institute

Trainers qualification

- I. Sc. Ag or equivalent in related field
- Good communicative and instructional skills
- Experience in related field

Trainer-trainees ratio

- 1:10 for practical classes
- For theory, as per the class room situation

Suggestions for instructor

Suggestions for instruction

1. **Select objectives**
   - Write objectives of cognitive domain
   - Write objectives of psychomotor domain
   - Write objectives of affective domain
2. **Select subject matter**
   - Study subject matter in detail
   - Select content related to cognitive domain
   - Select content related to psychomotor domain
   - Select content related to affective domain
3. **Select instructional methods**
   - Teacher centered methods: like lecture, demonstration, questions answer inquiry, induction and deduction methods.
   - Student initiated methods like experimental, field trip/excursion, discovery, exploration, problem solving, and survey methods.
   - Interaction methods like discussion, group/team teaching, microteaching and exhibition.
   - Dramatic methods like role play and dramatization
4. Select Instructional method (s) on the basis of objectives of lesson plans and KAS domains

5. Select appropriate educational materials and apply at right Time and place.
6. Evaluate the trainees applying various tools to correspond the KAS domains
7. Make plans for classroom / field work / workshop organization and management.
8. Coordinate among objectives, subject matter and instructional methods.
9. Prepare lesson plan for Theory and Practical classes.
10. Deliver /conduct instruction / program
11. Evaluate instruction/ program

Suggestion for the performance evaluation of the trainees
1. Perform task analysis
2. Develop a detail task performance checklist
3. Perform continuous evaluation of the trainees by applying the performance checklist.

Suggestion for skill training
Demonstrate performance
1. Demonstrate task performance in normal speed
2. Demonstrate slowly with verbal description of each and every step in the sequence of activity of the task performance using question and answer techniques.
3. Repeat 2 for the clarification on trainees demand if necessary
4. Perform fast demonstration of the task.

Provide trainees the opportunities to practice the task performance demonstration
1. Provide trainees to have guided practice
2. Create environment for practicing the demonstrated task performance
3. Guide the trainees in each and every step of task performance
4. Provide trainees to repeat and repeat as per the need to be proficient on the given task performance
5. Switch to another task demonstration if and only trainees developed proficiency in the task performance.

Other suggestions
1. Apply principles of skill training
2. Allocate 20% Time for Theory classes and 80% Time for task performance while delivering instructions
3. Apply principles of adult learning
4. Apply principles of intrinsic motivation
5. Facilitate maximum trainees involvement in learning and task performance activities
6. Instruct the trainees on the basis of their existing level of knowledge, skills and attitude.

List of modules and sub modules

Module: 1: Introduction
Module: 2: Manufacture of banana fibers
Module: 3: Banana fiber extraction
Module: 4: Banana fiber yarn
Module: 5: Banana Fiber Cloth
Module: 6: Producing marketable banana fiber products
Module: 7: Marketing of banana fiber products
Module: 8: Common module
Sub module: 1: Applied math
Sub module: 2: Occupational health and safety
Sub module: 3: First aid
Sub module: 4: HIV/AIDS
Sub module: 5: Communication
Sub module: 6: Small enterprise development

Details of modules and sub modules

Module: 1: Introduction						
Description: It deals with the introductory knowledge and skills related to banana plant and banana fiber.						
Objectives: After its completion the trainees will be able - To be familiar with banana plant - To enlist uses of banana plant - To enlist varieties of banana plant - To be familiar with banana fiber - To enlist banana fiber quality classes - To enlist sources of class of banana fiber quality - To state growing habit of banana plant - To identify time to cut banana tree for fiber extraction - To select sheaths to exploit for the purpose of fibers - To be familiar with banana fiber yield						
Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks/skills/steps together with their related technical knowledge:						

			5 + 10 = 15 hrs.	Time(hours)		
SN	Tasks		Related technical knowledge	Kn	Sk	Tot
1.	Be familiar with banana plant		Banana plant: ❖ Hot climate plant ❖ Concept of banana(table varieties) and plantain(cooking varieties) ❖ Morphology and botany	0.5	1.0	1.5
2.	Enlist uses of banana plant		Uses: ❖ Multipurpose plant ❖ Multivitamin fruit ❖ Vegetable for cooking ❖ Fiber for manufacturing textile ❖ leaves as plates to serve food	0.5	1.0	1.5
3.	Enlist varieties of banana plant		Varieties and botanical names: ❖ Musa Paradisiaca ❖ Musa Sapientum ❖ Musa Cavendishii ❖ Musa Chinensis	0.5	1.0	1.5
4.	Be familiar with banana fiber		Banana fiber : ❖ All varieties abond in fiber ❖ Each and every part of plant gives fibers of various strength, color, beauty, and staple length	0.5	1.0	1.5
5.	Enlist banana fiber		Banana fiber qualities:	0.5	1.0	1.5

	quality classes		❖ Coarse and strong fiber ❖ Fine and silky fiber ❖ Middling quality fiber ❖ Extremely white fine fiber ❖ Rough fiber ❖ Fiber of exceptional strength and durability ❖ Inherent drawback of banana fiber			
6.	Enlist sources of class of banana fiber quality		Sources of classes of banana fiber quality: ❖ Coarse and strong fiber-found on the outer ones in the leaf sheaths ❖ Fine and silky fiber- found in the innermost ones in the leaf sheaths ❖ Middling quality fiber -found in the intermediate ones in the leaf sheaths ❖ Extremely white fine fiber-found in the core, from the roots to the point to its emergence from the covering of the false stem ❖ Rough fiber- found n the fruit stems ❖ Fiber of exceptional strength and durability when properly processed-found in the midribs of the leaves	0.5	1.0	1.5
7.	State growing habit of banana plant		Growing habit: ❖ Tree continue to grow till the first flower emerges from the cluster of sheaths ❖ The growth of the leaves and petioles stop thereafter ❖ The flowers bloom and grow into fruits	0.5	1.0	1.5
8.	Identify time to cut banana tree for fiber extraction		Time to cut tree for fiber extraction: ❖ The quality of fibers to be produced will be of smaller and may not possess their maximum strength if the trees are cut before flower emerges ❖ Cutting trees only after the flower emerges in order to get quality fibers	0.5	1.0	1.5

9.	Select sheaths to exploit for the purpose of fibers	Selecting sheaths to exploit for the purpose of fibers: ❖ Two or three outer sheaths are rejected ❖ The innermost two or three of the sheaths are also rejected ❖ only the intermediate sheaths are exploited	0.5	1.0	1.5
10.	Be familiar with banana fiber yield	Yield: ❖ About 37 kg (average weight) of stem yields 1 kg of good fiber ❖ The yield is about 1-1.5% of dry weight is of lower quality ❖ the fresh banana plant yields about 0.61% of fiber depending on the variety and method of extraction	0.5	1.0	1.5
		Total:	5	10	15

Module: 2: Manufacture of banana fibers

Description: It deals with the introductory knowledge and skills related to the manufacture of banana fibers.

Objectives: After its completion the trainees will be able
- To Identify the banana plant parts
- To State concept of extraction of banana fiber
- To Perform strapping
- To Perform tuxying
- To Perform   extraction of banana fibers

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

		13 + 39 = 52 hrs.	Time(hours)		
SN	Tasks	Related technical knowledge	Kn	Sk	Tot
1.	Identify the followings of banana plant: ▪ Leaf sheath ▪ Pseudo-stem ▪ Petiole ▪ Lamina	Identification of the parts of banana plant: ❖ Leaf sheath ❖ Pseudo-stem ❖ Petiole ❖ Lamina	1	3	4
2.	Enlist methods for extracting banana fiber	Methods for extracting banana fiber: ❖ Scrapping- manual or hand scrapping and mechanical or machine scrapping ❖ Retting- hand retting, dew retting, water retting ❖ Machine extraction ❖ Chemical extraction	1	3	4

3.	State concept of extraction of banana fiber by hand scrapping		Concept of extraction of banana fiber by hand scrapping: ❖ Concept ❖ Objectives ❖ Principle ❖ Procedural steps ❖ Application ❖ Advantages ❖ Disadvantages/drawbacks ❖ Safety precautions	1	3	4
4.	State concept of extraction of banana fiber by hand retting		Concept of extraction of banana fiber by hand retting: ❖ Concept ❖ Objectives ❖ Principle ❖ Procedural steps ❖ Application ❖ Advantages ❖ Disadvantages/drawbacks ❖ Safety precautions	1	3	4
5.	State concept of extraction of banana fiber by raspodar machines		Concept of extraction of banana fiber by raspodar machines: ❖ Concept ❖ Objectives ❖ Principle ❖ Procedural steps ❖ Application ❖ Advantages ❖ Disadvantages/drawbacks ❖ Safety precautions	1	3	4
6.	State concept of extraction of banana fiber chemically		Concept of extraction of banana fiber chemically: ❖ Concept ❖ Objectives ❖ Principle ❖ Procedural steps ❖ Application ❖ Advantages ❖ Disadvantages/drawbacks ❖ Safety precautions	1	3	4
7.	State the concept of tuxy/ tuxying		Concept of tuxy/ tuxying: ❖ Tuxy- concept, identification and application ❖ Tuxying- concept, objectives, principle, procedural steps, and safety precautions	1	3	4

8.	State concept of extraction of banana fiber by manual process/strapping	Extract fiber by manual process/: ❖ Concept ❖ Objectives ❖ Principle ❖ Procedural steps ❖ Application ❖ Advantages ❖ Disadvantages/drawbacks ❖ Safety precautions	1	3	4
9.	Perform strapping: • Visit plantation site • Select banana plant for extraction of fibers • Prepare stem • Desheath the stem • Flatten the sheath • Separate strip(tuxy) • Pull off the strip along the length • Remove fibers in tuxies from each sheath • Scrap tuxies by pulling them through/between wooden block and knife under considerable pressure	Performing strapping: ❖ Visiting plantation site ❖ Selecting banana plant for extraction of fibers ❖ Preparing stem ❖ Desheathing the stem ❖ Flattening the sheath ❖ Separating strip(tuxy) ❖ Pulling off the strip along the length ❖ Removing fibers in tuxies from each sheath ❖ Scraping tuxies by pulling them through/between wooden block and knife under considerable pressure	1	3	4
10.	Perform machine extraction of banana fibers: • Remove dark outer sheaths of the trunk • Machine cut the trunk into sections of 120-180 cm length • Crush the sections between rolls • Scrap away the pulpy tissues, one half a length at the time, by two large revolving drums,	Machine extraction of banana fibers: ❖ Removing dark outer sheaths of the trunk ❖ Machine cutting the trunk into sections of 120-180 cm length ❖ Crushing the sections between rolls ❖ Scraping away the pulpy tissues, one half a length at the time, by two large revolving drums, the rim of which filed with scrapping blade which scrap the sheath while it is pressed against the blade plate ❖ Oven drying the fibers ❖ Grading the fiber	1	3	4

	the rim of which filed with scrapping blade which scrap the sheath while it is pressed against the blade plate • Oven dry the fibers • Grade the fiber • Bale the fibers	❖ Baling the fibers			
11.	Enlist methods of tuxying	Methods of tuxying: ❖ Bacins method of tuxying ❖ Loenit method of tuxying	1	3	4

12.	Perform Bacnis method of tuxying
	• Pull apart the trunks
	• Separate sheaths according to their position in stalk
	• Flatten the sheaths
	• Strip the fiber from the stem by cutting the pulpy portion and pulling away the tuxy
	• Get tuxies
	• Bundle the tuxies
	• Clean the tuxies:
	  ▪ Bring the tuxies to striping knife for cleaning
	  ▪ Pull tuxies under a knife blade
	  ▪ Press the knife blade tightly against the tuxies
	  ▪ Scrap away the plant tissues between the fibers
	  ▪ Clean the fibers
	• Obtain fibers
	• Air dry the cleaned
		Bacins method of tuxying:
		❖ Pulling apart the trunks
		❖ Separating sheaths according to their position in stalk
		❖ Flattening the sheaths
		❖ Striping the fiber from the stem by cutting the pulpy portion and pulling away the tuxy
		❖ Getting tuxies
		❖ Bundling the tuxies
		❖ Clearing the tuxies:
		  ▪ Brining the tuxies to striping knife for cleaning
		  ▪ Puling tuxies under a knife blade
		  ▪ Pressing the knife blade tightly against the tuxies
		  ▪ Scraping away the plant tissues between the fibers
		  ▪ Cleaning the fibers
		❖ Obtaining fibers
		❖ Air drying the cleaned fibers
		❖ Managing bundles of the air dried fibers
		❖ Grading the fibers
		❖ Baling the fibers
			1	3	4

	fibers • Make bundles of the air dried fibers • Grade the fibers • Ble the fibers					
13.	Perform loenit method of tuxying • Pull tuxies off the stalk one sheath at a time • Get texies • Bundle the tuxies • Clean the tuxies • Obtain fibers • Air dry the cleaned fibers • Make bundles of the air dried fibers • Grade the fibers • Ble the fibers		Loenit method of tuxying: ❖ Pulling tuxies off the stalk one sheath at a time ❖ Getting texies ❖ Bundling the tuxies ❖ Cleaning the tuxies ❖ Obtaining fibers ❖ Air drying the cleaned fibers ❖ Make bundles of the air dried fibers ❖ Grading the fibers ❖ Baling the fibers	1	3	4
			Total:	13	39	52

Module: 3: Banana fiber extraction

Description: It deals with the introductory knowledge and skills related to banana fiber extraction.

Objectives: After its completion the trainees will be able
- To harvest fruits
- To cut trees
- To foliages
- To remove outer sheaths
- To prepare strips
- To scrap strips
- To yield strands
- To enlist methods of acid removal
- To remove acidic matters through hackling
- To remove acidic matters through soaking in clean water tank
- To remove acidic matters through soaking in clean well
- To remove acidic matters through soaking in clean running water
- To remove acidic matters through soaking in dilute alkali solution
- To remove acidic matters through soaking in soap solution
- To rinse the strands
- To wring the strands
- To rinse the wrung strands
- To spread the strands

				13 + 39 = 52 hrs.	Time(hours)		

- To semidry the strands
- To heckle the semidried strands
- To obtain the fibers
- To spread the fibers in shade
- To dry the fibers in shade
- To bundle the dried fibers
- To grade the bundled fibers
- To bail the bundles/fibers

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

					Time(hours)		
SN	Tasks			Related technical knowledge	Kn	Sk	Tot
1.	Harvest fruits			Harvesting fruits: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
2.	Cut trees			Cutting trees: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
3.	Remove foliages			Removing foliages: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
4.	Remove outer sheaths			Removing outer sheaths: • Concept • Principle • Procedure • Safety/precautions • Record keeping of the related activities	0.5	1.5	2
5.	Prepare strips			Preparing strips: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions	0.5	1.5	2

			❖ Record keeping of the related activities			
6.	Scrap strips		Scraping strips: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
7.	Yield strands		Yielding strands: ❖ Concept ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
8.	Enlist methods of acid removal		Enlisting methods of acid removal: ❖ Methods of acid removal-hackling and soaking ❖ Advantages and disadvantages of each method ❖ Record keeping of the related activities	0.5	1.5	2
9.	Remove acidic matters through hackling		Removing acidic matters through hackling: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
10.	Remove acidic matters through soaking in clean water tank		Removing acidic matters through soaking in clean water tank: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
11.	Remove acidic matters through soaking in clean well		Removing acidic matters through soaking in clean well: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2

				0.5	1.5	2
12.	Remove acidic matters through soaking in clean running water		Removing acidic matters through soaking in clean running water: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
13.	Remove acidic matters through soaking in dilute alkali solution		Removing acidic matters through soaking in dilute alkali solution: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
14.	Remove acidic matters through soaking in soap solution		Removing acidic matters through soaking in soap solution: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
15.	Rinse the strands		Rinsing the strands: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
16.	Wring the strands		Wringing the strands: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
17.	Rinse the wrung strands		Rinsing the wrung strands: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
18.	Spread the strands		Spreading the strands:	0.5	1.5	2

		❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities			
19.	Semidry the strands	Semidrying the strands: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
20.	Heckle the semidried strands • Set hackle • Hackle the semidried strands • Reduce strands into individual fibers • Follow safety measures	Heckling the semidried strands: ❖ Setting hackle ❖ Hackling the semidried strands ❖ Reducing strands into individual fibers ❖ Following safety measures	0.5	1.5	2
21.	Obtain the fibers	Obtaining the fibers: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
22.	Spread the fibers in shade	Spreading the fibers in shade: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
23.	Dry the fibers in shade	Drying the fibers in shade: ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
24.	Bundle the dried fibers	Bundling the dried fibers: ❖ Concept ❖ Principle	0.5	1.5	2

SN	Tasks		Related technical knowledge	Kn	Sk	Tot
		❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities				
25.	Grade the bundled fibers	<u>Grading the bundled fibers:</u> ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
26.	Bail the bundles/fibers	<u>Bailing the bundles/fibers:</u> ❖ Concept ❖ Principle ❖ Procedure ❖ Safety/precautions ❖ Record keeping of the related activities	0.5	1.5	2
			Total:	13	39	52

Module: 4: Banana fiber yarn

Description: It deals with the introductory knowledge and skills related to banana fiber yarn production.

Objectives: After its completion the trainees will be able
- To produce banana fiber yarn:
- To produce banana fiber silk yarn
- To produce banana fiber products
- To be familiar with the use of banana fiber

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

			8 + 40 = 48 hrs.	Time(hours)		
SN	Tasks		Related technical knowledge	Kn	Sk	Tot
1.	Produce banana fiber yarn: • Produce un-dyed banana fiber yarn • Dye banana fiber yarn		<u>Producing banana fiber yarn</u>: ❖ Producing un-dyed banana fiber yarn ❖ Dyeing banana fiber yarn	2	10	12
2.	Produce banana fiber silk yarn • Produce pink banana fiber yarn • Produce bright pink yarn • Produce light blue		<u>Producing banana fiber silk yarn</u> ❖ Producing pink banana fiber yarn ❖ Producing bright pink yarn ❖ Producing light blue yarn ❖ Producing turquoise blue yarn ❖ Producing purple yarn ❖ Producing chille red yarn	2	10	12

	yarn • Produce turquoise blue yarn • Produce purple yarn • Produce chille red yarn • Produce black yarn • Produce coffee colored yarn • Produce green yarn • Produce recycled silk, viscose, and banana fiber mixed yarn • Produce un-dyed banana yarn		❖ Producing black yarn ❖ Producing coffee colored yarn ❖ Producing green yarn ❖ Producing recycled silk, viscose, and banana fiber mixed yarn ❖ Producing un-dyed banana yarn			
3.	Produce banana fiber products • Produce rugs • Produce tissue paper • Produce filter paper • Produce paper bags • Produce craft papers • Produce greeting cards • Produce wedding cards • Produce carry bags • Produce nursery pouches • Produce art papers • Produce decorative papers • Produce tissue papers • Produce bond papers • Make socks • Produce paper products (like pen stands/table		Producing banana fiber products ❖ Producing rugs ❖ Producing tissue paper ❖ Producing filter paper ❖ Producing paper bags ❖ Producing craft papers ❖ Producing greeting cards ❖ Producing wedding cards ❖ Producing carry bags ❖ Producing nursery pouches ❖ Producing art papers ❖ Producing decorative papers ❖ Producing tissue papers ❖ Producing bond papers ❖ Making socks ❖ Producing paper products (like pen stands/table decorative/ land shades)	2	10	12

4.	Be familiar with the use of banana fiber • Banana fiber is used in manufacturing industries of handicrafts, home decorative, door mats, table mats, pooja and meditation mats. • Paper made out of banana fiber is having very good export potential • Eco friendly, chemical free paper having longevity of 700 years can be made out of banana fiber. • Banana fiber is being used for making of currency paper also. • Banana fiber is used in textile industry also. • The saris and clothing material made out of banana fiber demarks for aristocracy in few countries. • Banana fiber is being used in making socks		Being familiar with the use of banana fiber ❖ Banana fiber is used in manufacturing industries of handicrafts, home decorative, door mats, table mats, pooja and meditation mats. ❖ Paper made out of banana fiber is having very good export potential ❖ Eco friendly, chemical free paper having longevity of 700 years can be made out of banana fiber. ❖ Banana fiber is being used for making of currency paper also. ❖ Banana fiber is used in textile industry also. ❖ The saris and clothing material made out of banana fiber demarks for aristocracy in few countries. ❖ Banana fiber is being used in making socks	2	10	12
	Total:			8	40	48
Module: 5: Banana Fiber Cloth
Description: It deals with the introductory knowledge and skills related to the production of banana fiber cloth.
Objectives: After its completion the trainees will be able

				10 + 40 = 50 hrs.	Time(hours)		

- To obtain banana fibers
- To cook the fibers
- To perform rolling up
- To make yarns
- To perform twisting
- To perform binding
- To perform dyeing
- To perform setting up
- To perform weaving
- To perform washing

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

				10 + 40 = 50 hrs.	Time(hours)		
SN	Tasks			Related technical knowledge	Kn	Sk	Tot
1.	Obtain banana fibers • Cut Leafs • Take shoots out of the banana plant two or three times a year to make sure the fiber is soft. • Cut mature stems • Peel the skin off • Use the coarse outer fiber for tablecloths. • Use the next layer of fiber for obi and ties. • Use the next layer of fiber [called the nahaguu] for kimono			Cultivation: ❖ Cutting Leafs ❖ Taking shoots out of the banana plant two or three times a year to make sure the fiber is soft. ❖ Cutting mature stems ❖ Peeling the skin off ❖ Using the coarse outer fiber for tablecloths. ❖ Using the next layer of fiber for obi and ties. ❖ Using the next layer of fiber [called the nahaguu] for kimono.	1	4	5
2.	Cook the fibers • Lay a rope in the bottom of a big pot of boiling lye--an alkali solution. • Bundle the separated fiber • Put bundled fiber in the solution • Cook for several hours with the lid			Cooking the fiber: ❖ Laying a rope in the bottom of a big pot of boiling lye--an alkali solution. ❖ Bundling the separated fiber ❖ Putting bundled fiber in the solution ❖ Cooking for several hours with the lid on. ❖ The alkalinity of the lye is critical.	1	4	5

	on. • The alkalinity of the lye is critical. • Wash the fiber to remove the alkali after boiling.		❖ Washing the fiber to remove the alkali after boiling.			
3.	Perform rolling up • Pair the fiber from the skin. • Separate the skin lengthwise into two or three flat strips • Separate with a bamboo tool. • Use the soft fiber for the weft • Use the hard or colored fiber for the warp. • Dry the fiber in the shade • Roll up the fibers.		Rolling up: ❖ Pairing fiber from the skin. ❖ Separating the skin lengthwise into two or three flat strips ❖ Separating with a bamboo tool. ❖ Using the soft fiber for the weft ❖ Using the hard or colored fiber for the warp. ❖ Drying the fiber in the shade ❖ Rolling up the fibers	1	4	5
4.	Make yarns: • Spin a thread from the fiber. • Put the fiber in water • Squeeze lightly. • Separate it by running the nails or tips of the fingers along between the fibers from the root upwards. • Join the individual fibers together to make a continuous thread, which is drawn to stop it separating. • Cut short the ends of the thread where		Yarn: ❖ Spinning a thread from the fiber. ❖ Putting the fiber in water ❖ Squeezing lightly. ❖ Separating it by running the nails or tips of the fingers along between the fibers from the root upwards. [The thickness of the thread depends on what is going to be woven. If it is for a kimono cloth then it is made very fine.] ❖ Joining the individual fibers together to make a continuous thread which is drawn to stop it separating. ❖ Cutting short the ends of the thread where joined	1	4	5

	joined					
5.	Perform twisting: • Obtain the thread to be twisted • Moisten with a spray • Set the spinning wheel • Twist the thread up on a spinning wheel, while being moistened with a spray		Twisting: ❖ Obtaining the thread to be twisted ❖ Moistening with a spray ❖ Setting the spinning wheel ❖ Twisting the thread up on a spinning wheel, while being moistened with a spray	1	4	5
6.	Perform binding: • Stretch out the thread • Take a template • Bind those parts of the thread that do not need to be dyed with the skin of the banana plant • Bind tightly with a cord once again		Binding: ❖ Stretching out the thread ❖ Taking a template ❖ Binding those parts of the thread that do not need to be dyed with the skin of the banana plant ❖ Binding tightly with a cord once again	1	4	5
7.	Perform dyeing • Identify two main dyes [sharinbai(Rhaphiolepis umbellata) and Ryukyu indigo] • Extract a dye from sharinbai • Cut thick branches and twigs of sharinbai into small pieces • Put the pieces of branches and twigs into a large pot of water • Perform boiling • Dip/immerse the kasuri threads in		Dyeing ❖ Identifying two main dyes [sharinbai(Rhaphiolepis umbellata) and Ryukyu indigo] ❖ Extracting a dye from sharinbai ❖ Cutting thick branches and twigs of sharinbai into small pieces ❖ Putting the pieces of branches and twigs into a large pot of water ❖ Performing boiling ❖ Dipping/immersing the kasuri threads in this dye for at least 30 minutes ❖ Performing partial drying	1	4	5

	this dye for at least 30 minutes • Perform partial drying					
8.	Perform setting up: • Remove the binding • Lay out the thread following the design • Pass it through a temporary reed • Wound the warp onto the beam • Pass it through the reed and heddle		Setting Up: ❖ Removing the binding ❖ Laying out the thread following the design ❖ Passing it through a temporary reed ❖ Wounding the warp onto the beam ❖ Passing it through the reed and heddle	1	4	5
9.	Perform weaving: • Spray water on the thread as it is being woven • Prevent breaking of thread • Weave this cloth during the rainy season in May and June.		Weaving: ❖ Spraying water on the thread as it is being woven ❖ Preventing breaking of thread ❖ Weaving this cloth during the rainy season in May and June.	1	4	5
10.	Perform washing: • Wash bolt of woven cloth • Prepare an alkali solution • Put the woven cloth in the alkali solution • Boil it • Wash it • Dry it • Neutralize it by immersing it in rice vinegar made from fermenting rice gruel and rice flour		Washing: ❖ Washing bolt of woven cloth ❖ Preparing an alkali solution ❖ Putting the woven cloth in the alkali solution ❖ Boil it ❖ Washing it ❖ Drying it ❖ Neutralizing it by immersing it in rice vinegar made from fermenting rice gruel and rice flour ❖ Removing the cloth after two hours ❖ Washing it ❖ Drying partially ❖ Stretching the cloth	1	4	5

• Remove the cloth after two hours • Wash it • Dry partially • Stretch the cloth • Straighten by hand • Iron the cloth	❖ Straightening by hand ❖ Ironing the cloth			
		Total:	10	40	50

Module: 6: Producing marketable banana fiber products

Description: It deals with the introductory knowledge and skills related to producing marketable banana fiber products.

Objectives: After its completion the trainees will be able:
- To state application of banana fibers
- To enlist banana fiber products
- To produce banana fibers
- To produce papers
- To produce cloths
- To produce tissue papers
- To produce filters
- To produce coffee bags
- To produce meat casings
- To produce powdered fibers
- To produce natural dyes
- To produce beautiful pictures
- To produce strings
- To produce ropes
- To produce cords
- To produce cables
- To produce ship building threads
- To produce sacks
- To produce packing fabrics
- To produce mats
- To produce rugs
- To produce fabrics
- To produce bags/hand bags
- To produce wall hangings
- To produce table mats
- To produce other factory articles
- To produce twines
- To produce various garments/ready-made garments (shirts, kimonos, gowns, night wares etc.)/ blended garments
- To produce dress materials

• To produce weeding gowns and barongs • To produce portraits drawn and filled with • colorful banana fiber chips • To produce socks				

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

			32 + 96 = 128 hrs.	Time(hours)		
SN	Tasks		Related technical knowledge	Kn	Sk	Tot
1.	State application of banana fibers		Application of banana fibers: ❖ Cordages ❖ Value added factory items ❖ Use in paper industry (tissue, filters, specialty nonwoven, document, printing, surgical and hygienic applications, coffee bags, meat casings etc.) ❖ Powder fibers, natural dyes, and beautiful pictures	1	3	4
2.	Enlist banana fiber products		Banana fiber products: ▪ Strings ❖ Ropes ❖ Cords ❖ Cables ❖ Sheep building thread ❖ Sacks ❖ Packing fabrics ❖ Mats ❖ Rugs ❖ Fabrics ❖ Bags/hand bags ❖ Wall hangings ❖ Table mats and other factory articles ❖ Twines ❖ Various garments/ready-made garments (shirts, kimonos, gowns, night wares etc.)/ blended garments ❖ Dress materials ❖ Weeding gowns and barongs ❖ Portraits drawn and filled with colorful banana fiber chips	1	3	4

3.	Produce banana fibers	Producing banana fibers: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
4.	Produce papers	Producing papers: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
5.	Produce cloths	Producing cloths: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
6.	Produce tissue papers	Producing tissue papers: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
7.	Produce filters	Producing filters: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
8.	Produce coffee bags	Producing coffee bags: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
9.	Produce meat casings	Producing meat casings: ❖ Concept ❖ Principals, procedural steps, and	1	3	4

		application			
		❖ Safety / precautions to be followed			
		❖ Keeping activity records			
10.	Produce powdered fibers	Producing powdered fibers: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
11.	Produce natural dyes	Producing natural dyes: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
12.	Produce beautiful pictures	Producing beautiful pictures: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
13.	Produce strings	Producing strings: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
14.	Produce ropes	Producing ropes: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
15.	Produce cords	Producing cords: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4

16.	Produce cables	Producing cables: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
17.	Produce ship building threads	Producing ship building threads: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
18.	Produce sacks	Producing sacks: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
19.	Produce packing fabrics	Producing packing fabrics: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
20.	Produce mats	Producing mats: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
21.	Produce rugs	Producing rugs: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
22.	Produce fabrics	Producing fabrics: ❖ Concept ❖ Principals, procedural steps, and application	1	3	4

			❖ Safety / precautions to be followed ❖ Keeping activity records			
23.	Produce bags/hand bags		Producing bags/hand bags: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
24.	Produce wall hangings		Producing wall hangings: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
25.	Produce table mats		Producing table mats: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
26.	Produce other factory articles		Producing other factory articles: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
27.	Produce twines		Producing twines: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
28.	Produce various garments/ready-made garments (shirts, kimonos, gowns, night wares etc.)/ blended garments		Producing various garments/ready-made garments (shirts, kimonos, gowns, night wares etc.)/ blended garments: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be	1	3	4

			followed ❖ Keeping activity records			
29.	Produce dress materials		Producing dress materials: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
30.	Produce weeding gowns and barongs		Producing weeding gowns and barongs: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
31.	Produce portraits drawn and filled with colorful banana fiber chips		Producing portraits drawn and filled with colorful banana fiber chips: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
32.	Produce socks		Producing socks: ❖ Concept ❖ Principals, procedural steps, and application ❖ Safety / precautions to be followed ❖ Keeping activity records	1	3	4
			Total:	32	96	128

Module: 7: Marketing of banana fiber products

Description: It deals with the introductory knowledge and skills related to the marketing of banana fiber products.

Objectives: After its completion the trainees will be able
- To list customers
- To collect demand
- To analyze demands
- To extrapolate demand
- To design packaging
- To package the product
- To label the packages

				15 + 30 = 45 hrs.	Time(hours)		

- To store the packages
- To perform pricing decisions
- To perform placing decisions
- To perform promotional decisions
- To prepare supply plan
- To prepare marketing plan
- To sell the products
- To calculate profit / loss

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

SN	Tasks		Related technical knowledge	Kn	Sk	Tot
				15 + 30 = 45 hrs.	Time(hours)		
1.	List customers		Listing customers: ❖ Paper industries ❖ Textile industries ❖ Weavers ❖ Others	1	2	3
2.	Collect demand		Collecting demand: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
3.	Analyze demands		Analyzing demands: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
4.	Extrapolate demand		Extrapolating demand: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
5.	Design packaging		Designing packaging: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3

6.	Package the product		Packaging the product: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
7.	Label the packages		Labeling the packages: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
8.	Store the packages		Storing the packages: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
9.	Perform pricing decisions		Performing pricing decisions: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
10.	Perform placing decisions		Performing placing decisions: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
11.	Perform promotional decisions		Performing promotional decisions: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
12.	Prepare supply plan		Preparing supply plan: ❖ Concept ❖ Need ❖ Procedural steps	1	2	3

			❖ Precautions ❖ Records keeping			
13.	Prepare marketing plan		❖ Preparing marketing plan: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
14.	Sell the products		Selling the products: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
15.	Calculate profit / loss		Calculating profit / loss: ❖ Concept ❖ Need ❖ Procedural steps ❖ Precautions ❖ Records keeping	1	2	3
			Total:	15	30	45
			Specialized modules total:	96	294	390

		Module :8 : Common module				
		Description: This module consists of skills and knowledge related to applied math, occupational health and safety, HIV/AIDS, first aid, communication, and small business management applicable in the related job performances.				
		Objectives: After its completion the trainees will be able: • To carry out simple mathematical calculations related to the occupation • To be familiar with hazards related to this occupation • To apply preventive measures for occupational health and safety • To apply first aid measures • To apply preventive measures for HIV/AIDS • To communicate with others • To apply skills of small business management				
		Sub modules: 1. Applied math 2. Occupational health and safety 3. First aid 4. HIV/AIDS 5. Communication 6. Small business management				
		Sub module: 1:Applied math				
		Description: It consists of skills and knowledge related to mathematical calculations applicable in the related occupational performances.				
		Objective: After its completion the trainees will be able: • To carry out simple mathematical calculations that must be done for the effective performance in the occupational job.				
		Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks/skills/steps together with their related technical knowledge:				
		Th.(4 hrs) + Pr.(16hrs) = Tot.(20 hrs)		Time(hrs)		
SN	Tasks or skills/ steps		Related technical knowledge	Th.	Pr.	Tot.
1.	Carry out simple addition applicable in job situation		Addition**:** ❖ Concept ❖ Simple calculations ❖ Application in the occupation	0.2	0.8	1
2.	Carry out simple subtraction applicable in job situation		Subtraction: ❖ Concept ❖ Simple calculations ❖ Application in the occupation	0.2	0.8	1
3.	Carry out simple multiplication applicable in job situation		Multiplication ❖ Concept ❖ Simple calculations ❖ Application in the	0.2	0.8	1

		occupation			
4.	Carry out simple division applicable in job situation	Division: ❖ Concept ❖ Simple calculations ❖ Application in the occupation	0.2	0.8	1
5.	Carry out measurements	Measurement: ❖ Concept ❖ Application in the occupation	0.2	0.8	1
6.	Convert units of measurement	Units of measurement: ❖ Concept ❖ Units of measurement ❖ Unit conversion ❖ application	0.2	0.8	1
7.	Convert units of measuring temperature	Units of measuring temperature: ❖ Concept ❖ Units of temperature measurement ❖ Unit conversion ❖ application	0.2	0.8	1
8.	Calculate area	Area: ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
9.	Calculate volume	Volume: ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
10.	Calculate weight	Weight: ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
11.	Calculate percentage	Percentage: ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
12.	Calculate ratio and proportions	Ratio and proportions: ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1

13.	Apply Pythagoras formula	Pythagoras formula**:** ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
14.	Apply unitary method	Unitary method**:** ❖ Concept ❖ Calculation ❖ Application	0.2	0.8	1
15.	Calculate simple interest	Simple interest**:** ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
16.	Calculate unit cost	Unit cost: ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
17.	Calculate per unit income	Per unit income: ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
18.	Calculate profit and loss	Profit and loss**:** ❖ Concept ❖ Formula ❖ Calculation ❖ Application	0.2	0.8	1
19.	Perform billing	Billing**:** ❖ Concept ❖ Calculation ❖ Bill format ❖ Procedure ❖ Application	0.2	0.8	1
20.	Prepare simple balance sheet	Balance sheet: ❖ Concept ❖ Format ❖ Procedure ❖ Application	0.2	0.8	1
	Total:		**4**	**16**	**20**
	Sub module: 2: Occupational health and safety				
	Description: It consists of skills and knowledge related to occupational health and safety applicable in the related occupational performances				
	Objectives: After its completion the trainees will be able: • To be familiar with hazards related to this occupation				

			Th.(2 hrs) + Pr.(8hrs) = Tot.(10 hrs)		Time(hrs)		
					Th.	Pr.	Tot.

• To apply preventive measures for occupational health and safety

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

SN	Tasks or skills/ steps		Related technical knowledge	Th.	Pr.	Tot.
Be familiar with hazards related to this occupation						
1.	Be familiar with accident hazards		Accident hazards: ❖ Concept ❖ Causes ❖ Procedures for managing this hazard	0.2	0.8	1
2.	Be familiar with physical hazards		Physical hazards: ❖ Concept ❖ Causes ❖ Procedures for managing this hazard	0.2	0.8	1
3.	Be familiar with chemical hazards		Chemical hazards: ❖ Concept ❖ Causes ❖ Procedures for managing this hazard	0.2	0.8	1
4.	Be familiar with biological hazards		Biological hazards: ❖ Concept ❖ Causes ❖ Procedures for managing this hazard	0.2	0.8	1
5.	Be familiar with ergonomic/psychological / organizational factors:		Ergonomic /psychological / organizational factors: ❖ Concept of : ▪ Ergonomic factors ▪ Psychological factors ▪ organizational factors ❖ Procedures for managing hazards caused by these factors	0.2	0.8	1
	Sub total:			**1**	**4**	**4**
Apply preventive measures for occupational health and safety						
1.	Ware safety wares		Safety wares: ❖ Identification ❖ Needs ❖ Wearing procedures	0.2	0.5	0.7
2.	Inspect workplace before working		Workplace inspection: ❖ Concept ❖ Principle and procedures	0.2	0.5	0.7

		❖ Records keeping			
3.	Inspect tools/materials/equipment before use	Inspection of tools/materials/equipment: ❖ Concept and identification ❖ Principle and procedures ❖ Records keeping	0.1	0.5	0.6
4.	Be prevented from accident hazards	Prevention of accident hazards: ❖ Concept ❖ Being prevented from accident hazards ❖ Records keeping	0.1	0.5	0.6
5.	Be prevented from physical hazards	Prevention of physical hazards: ❖ Concept ❖ Being prevented from physical hazards ❖ Records keeping	0.1	0.5	0.6
6.	Be prevented from chemical hazards	Prevention of chemical hazards: ❖ Concept ❖ Being prevented from chemical hazards ❖ Records keeping	0.1	0.5	0.6
7.	Be prevented from biological hazards	Prevention of biological hazards: ❖ Concept ❖ Being prevented from biological hazards ❖ Records keeping	0.1	0.5	0.6
8.	Be prevented from ergonomic/psychological / organizational factors that create problems/hazards.	Prevention of ergonomic/psychological / organizational factors that create problems/hazards: ❖ Concept ❖ Being prevented from ergonomic/psychological / organizational factors that create problems/hazards ❖ Records keeping	0.1	0.5	0.6
	Sub total:		**1**	**4**	**5**
	Total:		**2**	**8**	**10**
	Sub module: 3: First aid				
	Description: It consists of skills and knowledge related to first aid measures applicable in the related occupational performances.				
	Objective: After its completion the trainees will be able: • To **a**pply first aid measures				
	Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks/skills/steps together with their related technical knowledge:				
	Th.(1 hrs) + Pr.(4hrs) = Tot.(5 hrs)		Time(hrs)		

SN	Tasks or skills/ steps		Related technical knowledge	Th.	Pr.	Tot.
1.	Carryout simple dressings		Carryout simple dressings: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.10	0.40	0.5
2.	Apply simple bandages		Apply simple bandages: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.10	0.40	0.5
3.	Apply first aid for simple wounds		Apply first aid for simple wounds: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.10	0.40	0.5
4.	Apply first aid for heat /chemical burns		Apply first aid for heat /chemical burns: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.10	0.40	0.5
5.	Apply first aid for injuries/cuts		Apply first aid for injuries/cuts: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.10	0.40	0.5
6.	Apply first aid for fracture		Apply first aid for fracture: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.10	0.40	0.5
7.	Apply first aid for simple bleeding		Apply first aid for simple bleeding: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.10	0.40	0.5

8.	Apply first aid for insect bites	Apply first aid for insect bites: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.05	0.20	0.25
9.	Apply first aid for animal bites	Apply first aid for animal bites: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.05	0.20	0.25
10.	Apply first aid for frost bite	Apply first aid for frost bite : ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.05	0.20	0.25
11.	Apply first aid for simple poisoning	Apply first aid for simple poisoning: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.05	0.20	0.25
12.	Apply first aid for electrical shock	Apply first aid for electrical shock: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.05	0.20	0.25
13.	Apply first aid for choking/ drowning	Apply first aid for choking/ drowning: ❖ Concept ❖ Needs ❖ Procedures ❖ Precautions ❖ Recording	0.05	0.20	0.25
	Total:		**1**	**4**	**5**
	## Sub module: 4: HIV/AIDS				
	Description: It consists of skills and knowledge related to safety measures to be followed for the prevention of HIV/AIDS including its management.				
	Objectives: After its completion the trainees will be able: • To state the concept of HIV/AIDS				

	• To apply safety measures for prevention of HIV/AIDS					
	Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks/skills/steps together with their related technical knowledge:					
			Th.(1 hrs) + Pr.(4hrs) = Tot.(5 hrs)	Time(hrs)		
SN	Tasks or skills/ steps		Related technical knowledge	Th.	Pr.	Tot.
1.	**State the concept of HIV/AIDS** 1. Define HIV 2. Enlist modes of transmission of HIV 3. Enlist signs and symptoms of HIV infected person 4. Enlist stages of HIV 5. Define AIDS 6. Enlist signs and symptoms of AIDS 7. Enlist current status of global HIV/AIDS 8. Enlist difference between HIV/AIDS		**State the concept of HIV/AIDS:** **HIV**: ❖ Definition of HIV: ❖ Modes of transmission of HIV ❖ Signs and symptoms of HIV infected person ❖ Stages of HIV **AIDS**: ❖ Definition of AIDS ❖ Signs and symptoms of AIDS ❖ Current status of global HIV/AIDS ❖ Difference between HIV and AIDS	0.5	2	2.5
2.	Apply safety measures for prevention of **HIV/AIDS:** 1. Keep touch with single partner for sexual intercourse 2. Ensure safe intercourse 3. Use condom carefully and consistently during each act of sexual intercourse incase of other than single sex partner 4. Keep away from sharing syringes, needles and other skin piercing instrument with HIV infected people 5. Keep away from sharing toothbrushes, blade razors or other instruments that could become contaminated from blood 6. Keep away from handling clothes or cloths that are visibly contaminated with blood 7. Follow positive health behavior		Apply safety measures for prevention of **HIV/AIDS:** ❖ Keeping touch with single partner for sexual intercourse ❖ Ensuring safe intercourse ❖ Using condom carefully and consistently during each act of sexual intercourse incase of other than single sex partner ❖ Keeping away from sharing syringes, needles and other skin piercing instrument with HIV infected people ❖ Keeping away from sharing toothbrushes, blade razors or other instruments that could become contaminated from blood ❖ Keeping away from handling clothes or cloths that are visibly contaminated with blood	0.5	2	2.5

				Th.	Pr.	Tot.
	8. Get blood be tested to ensure HIV negative/positive		❖ Positive health behavior ❖ Getting blood be tested to ensure HIV negative/positive			
	Total:			1	4	5

Sub module: 5 : Communication

	Description: It consists of the skills and knowledge related to communication in the related occupation. Each task consists of its steps, related technical knowledge and hour distribution.					
	Objectives: After its completion the trainees will be able:					
	• To handle telephone calls • To handle fax • To handle mail • To write letters • To write memos / tips / notes / notice • To perform internal communication • To perform external communication • To perform oral communication • To perform written communication		• To communicate with donors To communicate with financial institutes • To link with media • To disseminate information • Write job application • Prepare Resume. • Communicate with senior. • Communicate with juniors. • Deal with customers • Request / purchase tool, supplies, materials and equipment. • Fill up leave requisition form.			
	Tasks: To fulfill the objective the trainees are expected to get proficiency on the following tasks/skills/steps together with their related technical knowledge:					

			Th.(2 hrs) + Pr.(8hrs) = Tot.(10 hrs)	Time(hrs)		
SN	Tasks or skills/ steps		Related technical knowledge	Th.	Pr.	Tot.
1.	Handle telephone calls		Handling telephone calls: ❖ Concept, need, and importance ❖ Operating principles and procedures ❖ Care and maintenance ❖ Safety precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
2.	Handle fax		Handling fax: ❖ Concept, need, and importance ❖ Operating principles and procedures ❖ Care and maintenance ❖ Safety precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5

3.	Handle mail	Handling mail: ❖ Concept, need, and importance ❖ Operating principles and procedures ❖ Care and maintenance ❖ Safety precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
4.	Write letters	Writing letters: ❖ Concept, need, and importance ❖ Types of letter ❖ Component parts of each type of letter ❖ Format of each type of letter ❖ Writing letters ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
5.	Write memos / tips / notes / notice	Writing memos / tips / notes / notice : ❖ Concept, need, and importance ❖ Component parts of memos / tips / notes / notice ❖ Format of memos / tips / notes / notice ❖ Writing memos / tips / notes / notice ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
6.	Prepare simple report	Preparing simple report: ❖ Concept, need, and importance ❖ Component parts of a report ❖ Format of a report ❖ Writing a report ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
7.	Prepare simple proposal	Preparing simple proposal: ❖ Concept, need, and importance ❖ Component parts of a proposal ❖ Format of a proposal ❖ Writing a proposal	0.1	0.4	0.5

				0.1	0.4	0.5
			❖ Precautions to be taken ❖ Keeping activity records			
8.	Perform internal/ external communication		Performing internal/ external communication: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Performing internal/ external communication ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
9.	Perform horizontal/vertical communication		Performing horizontal/vertical communication: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Performing horizontal/vertical communication ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
10.	Perform oral/ written communication		Performing oral/ written communication: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Performing oral/ written communication ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
11.	Communicate with financial institutes		Communicating with financial institutes: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Communicating with financial institutes ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
12.	Link with media		Linking with media: ❖ Concept, need, and importance	0.1	0.4	0.5

				0.1	0.4	0.5
		❖ Principles, procedures, and application ❖ Linking with media ❖ Precautions to be taken ❖ Keeping activity records				
13.	Disseminate information	Disseminating information: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Disseminating information ❖ Precautions to be taken ❖ Keeping activity records		0.1	0.4	0.5
14.	Write job application	Writing job application: ❖ Concept, need, and importance ❖ Component parts of job application ❖ Format of job application ❖ Writing job applications ❖ Precautions to be taken ❖ Keeping activity records		0.1	0.4	0.5
15.	Prepare resume	Preparing resume: ❖ Concept, need, and importance ❖ Component parts of a resume ❖ Format of a resume ❖ Writing resume ❖ Precautions to be taken ❖ Keeping activity records		0.1	0.4	0.5
16.	Communicate with senior.	Communicating with senior: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Communicating with senior ❖ Precautions to be taken ❖ Keeping activity records		0.1	0.4	0.5
17.	Communicate with juniors.	Communicating with juniors: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Precautions to be taken ❖ Keeping activity records		0.1	0.4	0.5
18.	Deal with customers/stake	Dealing with customers/stake		0.1	0.4	0.5

SN	Tasks or skills/ steps	Related technical knowledge	Th.	Pr.	Tot.
	holders	holders: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Communicating with juniors ❖ Precautions to be taken ❖ Keeping activity records			
19.	Request / purchase tool, supplies, materials and equipment.	Requesting / purchasing tool, supplies, materials and equipment: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Requesting / purchasing tool, supplies, materials and equipment ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
20.	Fill up leave requisition form	Filling up leave requisition form: ❖ Concept, need, and importance ❖ Principles, procedures, and application ❖ Filling up leave requisition form ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
		Total:	**2**	**8**	**10**

Sub module: 6 : Small enterprise development

Description: It consists of the skills and knowledge related to small enterprise development in the related occupation. Each task consists of its steps, related technical knowledge and hour distribution.

Objectives: After its completion the trainees will be able:
- To be familiar with entrepreneurship development
- To prepare a business plan

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

	Th.(4 hrs) + Pr.(16 hrs) = Tot.(20 hrs)		Time(hrs)		
SN	Tasks or skills/ steps	Related technical knowledge	Th.	Pr.	Tot.
	Entrepreneurship development:	**Entrepreneurship development:**			
1.	Be familiar with business / entrepreneurship	Business / entrepreneurship: ❖ Concept, definitions, need, and importance	0.1	0.4	0.5

		❖ Precautions to be taken ❖ Keeping activity records			
2.	Develop qualities of a successful entrepreneur	Qualities of a successful entrepreneur: ❖ Concept and needs ❖ Qualities of a successful entrepreneur ❖ Keeping activity records	0.1	0.4	0.5
3.	Follow professional ethics	Professional ethics: ❖ Concept, need, and importance ❖ Professional ethics ❖ Interpretation ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
4.	Analyze prevailing rules / regulations/ laws /acts related to the profession	Prevailing rules / regulations/ laws /acts related to the profession: ❖ Concept, need, and importance ❖ Prevailing rules / regulations/ laws /acts related to the profession ❖ Interpretation ❖ Precautions to be taken ❖ Keeping activity records	0.1	0.4	0.5
5.	Develop skills of good governance	Good governance: ❖ Concept, need, and importance ❖ Principles and procedures of good governance ❖ Precautions to be taken ❖ Keeping activity re	0.1	0.4	0.5
6.	Be familiar with entrepreneurship development/ factors affecting the growth of entrepreneurship	Entrepreneurship development/ factors affecting the growth of entrepreneurship: ❖ Concept, need, and importance ❖ Entrepreneurship development ❖ Factors affecting the growth of entrepreneurship ❖ Precautions to be taken ❖ Keeping records	0.1	0.4	0.5
7.	Develop an entrepreneurship competency development [ECD]	Entrepreneurship competency development [ECD] program:	0.1	0.4	0.5

	program	❖ Concept, need, and importance ❖ Entrepreneurship competency development [ECD] ❖ ECD program development ❖ Precautions to be taken ❖ Keeping records			
8.	Be familiar with identification / selection/appraising/gaining instructional a support of a project • Be familiar with identification of a project • Be familiar with selection of a project • Be familiar with appraising of a project • Be familiar with gaining instructional a support of a project	Identification / selection/appraising/gaining instructional a support of a project: ❖ Concept, need, and importance ❖ Identification of a project ❖ Selection of a project ❖ Appraising of a project ❖ Gaining instructional a support of a project ❖ Precautions to be taken ❖ Keeping records	0.1	0.4	0.5
9.	Be familiar with the preparation of a comprehensive business plan for starting / acquiring /running a business	Be familiar with the preparation of a comprehensive business plan for starting / acquiring /running a business: ❖ Preparation of a comprehensive business plan for starting a business ❖ Preparation of a comprehensive business plan for acquiring a business ❖ Preparation of a comprehensive business plan for running a business ❖ Precautions to be taken ❖ Keeping records	0.1	0.4	0.5
10.	Be familiar with marketing of products	Be familiar with marketing of products: ❖ concept of product, price, place, promotion ❖ marketing of products ❖ Precautions to be taken ❖ Keeping records	0.1	0.4	0.5
			Sub total**:**	**1**	**4**	**5**
	Business plan:	**Business plan:**			
11.	Collect related information / data	Collecting related information /	0.4	1.6	2

			data:			
			❖ Concept, need, and importance of data and information ❖ Difference between data and information ❖ Principles and procedures for collecting related information / data ❖ Collecting related information / data ❖ Precautions to be taken ❖ Keeping records			
12.	Prepare production plan		Preparing production plan: ❖ Concept, need, and importance ❖ Component parts ❖ Format ❖ Principles and procedures ❖ Precautions to be taken ❖ Keeping records	0.4	1.6	2
13.	Prepare cost plan		Preparing cost plan: ❖ Concept, need, and importance ❖ Component parts ❖ Format ❖ Principles and procedures ❖ Precautions to be taken ❖ Keeping records	0.4	1.6	2
14.	Prepare financial plan		Preparing financial plan: ❖ Concept, need, and importance ❖ Component parts ❖ Format ❖ Principles and procedures ❖ Precautions to be taken ❖ Keeping records	0.4	1.6	2
15.	Prepare marketing plan		Preparing marketing plan: ❖ Concept, need, and importance ❖ Component parts ❖ Format ❖ Principles and procedures ❖ Precautions to be taken ❖ Keeping records	0.4	1.6	2
16.	Prepare a business plan		Preparing a business plan:	0.6	2.4	3

			❖ Concept, need, and importance ❖ Component parts ❖ Format ❖ Principles and procedures ❖ Precautions to be taken ❖ Keeping records			
17.	Appraise business plan		Appraising business plan: ❖ Concept, need, and importance ❖ Principles and procedures ❖ Precautions to be taken ❖ Keeping records	0.4	1.6	2
			Sub total:	3	12	15
			Total:	4	16	20
			Common module total:	14	56	70
			All total:	**110**	**350**	**460**

List of tools, materials and equipment

	Instructor selected tools, materials and equipment for: • Introduction to banana/banana fibres • Manufacture of banana fibers • Banana fiber extraction • Banana fiber yarn production • Producing banana fiber cloth • Producing marketable banana fiber products • Marketing of banana fiber products • Occupational health and safety • First aid/ HIV/AIDS • Communication • Small business management	Tools/materials/equipment selection procedure: • Obtain curriculum • Study the curriculum • Make list of tasks/skills • Sequence and analyze the related tasks • Make list of necessary tools, materials and equipment necessary for carrying out each of the task/skill • Select the necessary tools, materials and equipment necessary for carrying out the task/skill specified in the curriculum • Give priority to select locally available tools, materials and equipment as far as possible • Make comprehensive list of necessary tools, materials and equipment	

Reading materials

	• Handbook of agriculture -ICAR, New Delhi • Related materials from net search	• Instructor selected textbooks/ reference books / manuals/ journals and articles available in the marker • Instructor prepared books, handouts, notes and manuals	

Facilities

	• Well equipped enough class/ office rooms • A / V room • Demonstration banana farm • Land for banana cultivation • Well equipped banana fibre processing workshop/lab.	• Transportation facilities/ Vehicle/Library • OHP/computers with CD ROM attachment / pictures • Multimedia presentation set /slide presenter • Hostel/canteen /drinking water/ electricity	