

MODEL SYLLABUS

FOR TRAINING OF FRONTLINE STAFF- HIMACHAL PRADESH

(CAPACITY DEVELOPMENT FOR FOREST MANAGEMENT
AND PERSONNEL TRAINING)



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SUBMITTED TO

**State Project Monitoring Unit (SPMU),
Department of Forests, Government of
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**JPS Associates (P) Ltd.
New Delhi**



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ADOPTION OF MODEL SYLLABUS WITH STATE SPECIFIC CHANGES-HP

UNDERSTANDING SYLLABUS

A syllabus usually contains specific information about the course, such as information on how, where and when to contact the lecturer and teaching assistants; an outline of what will be covered in the course; a schedule of test dates and the due dates for assignments; the grading policy for the course; specific classroom rules; etc.

The syllabus serves many purposes for the students, trainees and the teacher, trainer such as ensuring a fair and impartial understanding between them such that there is minimal confusion on policies relating to the course, setting clear expectations of material to be learned, behavior in the classroom, and effort on student's/trainer's behalf to be put into the course, providing a roadmap of course organization/direction relaying the instructor's/trainer's teaching/training philosophy to the students/trainees, and providing a specific angle of the course such that students/trainees may choose early in the course whether the subject material is attractive. The meaning of Syllabus will be clearer from the following definitions.

Slattery & Carlson describe the syllabus as a ***"contract between faculty members and their students, designed to answer students' questions about a course, as well as inform them about what will happen should they fail to meet course expectations"***.

Habaneck stresses the importance of the syllabus as a ***"vehicle for expressing accountability and commitment"***.

Wasley states that ***"the notion of a syllabus as a contract has grown ever more literal"***.

According to Jonathan R. Alger ***"a course syllabus is unlikely to stand as an enforceable contract"***.

In simple words syllabus is a course control document used for every block of instruction within a training course. It includes objectives of instruction block, duration, support material and guidance scope. It is also called as a plan of instruction.

Following are the different types of syllabus;

- 1 Grammatical syllabus
- 2 Lexical syllabus
- 3 Situational syllabus
- 4 Text-based syllabus
- 5 Skill-based syllabus**
- 6 Task-based syllabus
- 7 Learner-generated syllabus
- 8 Mixed syllabus
- 9 Online course syllabus

From the above types of courses, **skill-based syllabus** is the need for frontline staff of forest department. As stated earlier documents, the frontline staff (Forest guard, Forester) have knowledge from their educational qualification or they can acquire the same by reading books, reading materials and following other teaching aids. So far as the enhancement skill is concerned, it needs to impart by experts or who have already completed / proven track record of doing same.

Syllabus play a variety of valuable functions for different groups within an institution such as a communication mechanism, a planning tool for instructors, a course plan for students, a teaching tool or resource, an artifact for teacher evaluation, and evidence for accreditation.

The function a syllabus serves depends on who is using it. While there are some similarities in use, overall students, faculty, administrators, and accreditation personnel all use the document for different purposes.

The syllabus followed / taught to the forest guards and foresters were reviewed by the experts. The purpose of such review is to assess to relevance of the subjects in accordance with current and future needs for frontline staff. On the review, it is noticed that most of the subjects included in the training of front line staff have relevant and providing both the theoretical and practical knowledge on sustainable forest management and development. Details of subject with credit, credit hours and tours & excursions are given below:-



COURSE CONTENTS FOR INDUCTION TRAINING FOR FOREST GUARDS/FORESTERS

A. Subject-wise Allotment of Hours

Sl. No.	Subjects	Classroom session (Theory + Practical) ¹ (hours)	Excursions (days)	Tour & Field Exercises (days)
General Management & Office Procedure				
1	Managerial Skill	9		
2	Office procedure and accounts	13	1	
Basics of Forestry and FD duties				
3.	Silviculture & Forest Management	Total 46 hours		
3.1	General Silviculture	12	1	4
3.2	Silviculture of trees & Silvicultural systems	15	1	4
3.3	Regeneration methods	19	2	4
4.	Introduction to Wildlife & Biodiversity Conservation	29	1	2
5	Forest botany	Total 15 hours		
5.1	Field botany	10	1	2
5.2	Economic Botany	5		
6	Soil and Water conservation	25	1	2
7	Forest survey & GPS	25		
8	Basic Mathematics & Forest Mensuration	19	1	
9	Forest engineering	22	1	
10	Forest utilization	30		
11	Forest law	28	1	2
12	Forest protection	30	1	4
JFM/PFM & people participatory activities related Subjects				
13	Participatory Forest Management	Total 37 hours	4	
13.1	Concept of JFM/PFM	5	-	
13.2	JFM/PFM Stakeholders	2	-	
13.3	CBO ² Building	10	-	
13.4	Forests & Livelihood	5		
13.5	Communication Skills	5		
13.6	Gender issues	2		
13.7	PRA	4	2	
13.8	Micro Plan	4	2	
Skills Common to All Subjects				
14	Computer Application	30	-	-
15	First Aid	2	-	-
16	Current trends in forestry	10	-	-
	Total	Total 370 hours	20	24

- 1 Classroom sessions: Including sessions using such places in the premises as arboretum, nursery, demonstration plots, laboratory, computer room, etc.
- 2 CBO: Community Based Organization (ex: JFPMC, SHG, etc.)

B. Course Contents

1. Managerial Skill (9 hours) including management games and exercises		
1. Individual behaviour	- Growth of individual, Individual traits, Attitude, Personality	1 hour
2. Team Building		1 hour
3. Motivation		1 hour
4. Leadership Qualities		1 hour
5. Supervisory Skills		1 hour
6. Public dealing		1 hour
7. Dealing with media		1 hour
8. Time Management		1 hour
9. Stress Management		1 hour
2. Office procedure and accounts (13 hours), excursion 1 day		
1	Definition & Role of Public Servant, duties and obligations, service rules, immunities to PS Conduct Rules, do's & do not's, Disciplinary rules	2 hour
2	Organizational structure of the forest department Duties and responsibilities of FR/FG as outlined in the state forest code	1 hour
3.	Transfer of charge of beats/sections procedure to be followed	1 hour
4.	Preparation and/or maintenance of muster roll, bills, hand receipt, vouchers	3 hour
5.	Beat manual & maintenance of financial records etc.	2 hour
6.	Travelling allowance and leave rules	1 hour
7	Necessary Documents to be maintained (registers, forms & returns, tour diary)	3 hour
	Visit to Range Office & Divisional Office	1 day

3. Silviculture and Forest Management (46 hours) Excursions 4 days, Tour 12 days		
3. 1 General Silviculture (12 hours), Excursions 1day, Tour 4 days		
1. Introduction	Define & Explain Silviculture and Forest Management related terms: Silviculture, Working plan, Working circle regeneration period, Sustained Yield, Rotation, Enumeration and its type, Regeneration Survey, CH files, Age gradation, Age classes and Diameter classes, Site quality	4 hours
2.Growth of Trees	2-1. Various Stages of Growth -Seedling -Sapling -Pole -Tree -Crown	1 hour
3.Factors Governing growth	3-1. Climate 3-2. Topography and aspect	5 hours

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of Forests	3-3. Soil 3-4. Biotic factors	
6.Tree Classification	6-1. Dominant 6-2. Dominated 6-3. Suppressed 6-4. Dead or moribund 6-5. Diseased 6-6. Crown and canopy	1 hours
7.Tending & Thinning	7-1. Definition 7-2. Need 7-3. Weeding and cleaning 7-4. Climber cutting 7.5. Types of Thinning	1 hour
Excursion & Field Study	During the tour and Saturday excursions, growth factors, plant succession, forest types and stages of growth will be observed.	5 days
3.2. Silviculture of Trees & Silviculture Systems (15 hours), Excursions 1 days, tour 4 days		
1. Silviculture of trees	Study of habitat, distribution, soil and climate requirements and phenology of at least 15 economically & ecologically important species of the state concerned. ANNEXURE 1: list of important species	10 hours (+OJT: Silviculturue of species)
2. Introduction to Silvicultural Systems	2-1. High forest and coppice systems 2-2. High forest systems 2-3. Clear felling system 2-4. Selection system 2-5. Shelter wood system 2-6. Coppice Systems	5 hours
Excursion & Field Study	The trainees will be shown the Silvicultural systems and Silviculture of such species that are met with during the tours and excursions	5 days

3.3 Regeneration Methods (19 hours), Excursion 2 days, tour 4 days		
1. Natural Regeneration	1-1. light demanders and shade bearers 1-2 natural regeneration from seed -In clear felled areas- controlled burning. -under shelter wood -in irregular forests 1-3. natural regeneration by coppice -seedling coppice -stool coppice 1-4. assisting natural regeneration -gap planting in barren patches -weeding, cleaning, climber cutting and soil working -thinning -cultural operations -soil and water conservation measures	3 hours

2. Artificial regeneration	<p>Introduction Objectives</p> <ul style="list-style-type: none"> -choice of species (General criteria, informed choices by local) -pure vs. mixed crops -exotics vs. indigenous species -artificial vs. natural regeneration- merits and demerits -use of seedlings, aerial seeding, vegetative propagation and tissue culture - Methods of sowing: Broadcasting, dibbling, Patch sowing, Pelleting -Stump planting <ul style="list-style-type: none"> • Use of seedlings, aerial seeding, vegetative propagation and tissue culture 	5 hours
3. Nursery	<ul style="list-style-type: none"> • Seed collection and storage • Site selection and fencing • Preparation of Compost pit, Vermi Compost • Preparation of mixture to be used in beds and poly pots(potting medium) • Preparation of germination and secondary beds-soil preparation. • Filling polypots • Pre-treatment of seeds, sowing of seeds in beds / dibbling seeds in polypots • Watering regime • Pricking out seedlings in poly pots, Root trainer • Culling and grading • Shifting, root-pruning and hardening • Plant protection • Maintenance of nursery register/ Journal • Hi tech Nursery- Poly house, Green House, Hardening Area, Hedge Garden, Mister, Fogger, Sprinkler, Temperature, Humidity control • Raising of tall plants in nursery. 	5 hours
4. Planting Operations	<ul style="list-style-type: none"> • Site selection • Survey and demarcation, GPS tagging of site, Geo-tagging of site photographs • Aligning according to spacing, staking/marking • Pitting • Transport of seedlings and planting • Manuring • Replacing casualties (Beating up) • Pasture development • Weeding and soil working • Mulching/frost protection • Tending • Thinning • Pollarding 	6 hours
Excursion & Field Study	Entire nursery and planting operations will mainly be trained through field work on two consecutive Saturday excursions including documentation with:	6 days

	<ul style="list-style-type: none"> • Nursery Journal • Plantation Journal 	
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SUMMARY OF CONTENTS:

4. Introduction to Wild Life & Bio-Diversity (29 hours) Excursion 1day Tour 2 Conservation		
4.1 Introduction to Biodiversity		
	<ul style="list-style-type: none"> • Definition and Importance of Biodiversity. • Description of important high bio-diversity areas in H.P. • Technique of conducting survey. • Effect of forest management on bio-diversity. • Various methods of conserving bio-diversity. • Brief idea about eco-development planning in PAN in HP 	5 hours
4.2 Introduction to Wild Life Conservation		
	<p>Definition of wildlife & terms related to PANs.</p> <ul style="list-style-type: none"> • Importance of wildlife including religious sentiments. • Role of wildlife in forest ecology, food chain, food web. • People awareness and extension, wildlife week, environment day 	4 hours
4.3 Status of Wildlife in Hp		
	<ul style="list-style-type: none"> • Distribution of wildlife in HP. • Extent of PAN-detail of W.L sanctuaries. national parks, game reserves, zoological parks, zoo, nature parks, awareness areas. • Brief study of habitat of important wildlife in H.P. • Schedule of animals- endangered species in HP. • Introduction to important species of Wildlife in HP- Annexure 2 	10 hours
4.4 Management of Wild Life		
	<ul style="list-style-type: none"> • Method of census • Collection & identification of field evidence- pug marks, bird tracks, kills, dropping pellets. • Concept of eco-development and people participation in management Wildlife habitat management-salt licks, water holes, towers, tracks/trails hides, food for herbivores. • Brief of important sections of WLPA-1972 . • Captive breeding and zoo management • Control of poaching/trapping of animal- detection and prosecution of offenders. 	10 hours

	<ul style="list-style-type: none"> Elementary knowledge of contagious diseases. Brief idea of wildlife migration Compensation to damage by Wild animals, how to avoid false claims Social implications of wildlife conservation: leopard menace, damage by monkeys etc. Human –animal Conflict & its management 	
Excursion & Field Study		3 days

5. Forest Botany 15 hours Excursion– 1 day Tour-2 days

5.1. Field Botany- (10 hours) Excursion– 1 day Tour-2 days

	<p>1.1 External morphology (bark, branching pattern, phyllotaxy, leaf form, flower & inflorescence, fruit and seeds)</p> <ul style="list-style-type: none"> -parts of a plant -roots types and functions -stem – functions -Leaf parts functions -Inflorescence types -Flowers-unisexual and bisexual-parts and functions -fruits simple, aggregate and multiple <ul style="list-style-type: none"> During JFM/PFM fieldwork, the trainees will learn to identify the local species from the villagers and learn their local names and uses. it is sufficient if the trainee assimilates local and common names of 50 important species. However, the course material should give the botanical names. During on the job training RFO/DFO should teach the PF/FR the botanical names of the important species Identification of plants from morphology will be continued during Saturday excursions and tours/with villagers during collaborative walk during PRA exercise 	10 hours
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5.2. Economic Botany

	<ul style="list-style-type: none"> Local names of 50 Timber and NWFP species, their economic importance and uses. Preparation of herbarium sheet for 10 important species 	5 hours
Excursion & Field Study		3 Days

6. Soil and Water Conservation (25 hours), Excursion 1 day, Tour 2 days

1. Rocks and Soil	<p>1-1. Rocks & Minerals</p> <p>1-2. Soil formation</p> <p>1-3. Soil profile and horizons</p> <p>1-4. Soil texture, structure, water and PH</p> <p>1-5. Important soil types and their properties</p>	6 hours (1 hour demo of various types of rock, minerals,
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	1-6 Land Capability Classification	determination of soil pH)
2. Species suitable for different soil types	Important forestry spp. of HP be discussed with reference to major soil types	2 hours
3. Watershed	Concept and definition of watershed Need for SWC for forest development Watershed approach for development	1 hours
4. Hydrology	Hydrological cycle Rainfall distribution and measurement Run off Peak run off Water balance Silt Load	1 hours
5. Soil Erosion	Causes Factors involved Effects of erosion Types of erosion Water and wind erosion	2 hours
6. Soil and Water Conservation Measures	Vegetative measures. <ul style="list-style-type: none"> · Contour ploughing and cultivation · Vegetative barriers / checks · Agroforestry Engineering measures <ul style="list-style-type: none"> · Contour bunding, compartmental bunding and graded bunding · Contour trenches · Contour stone walls · Earthen / nala bund · Sunken gully pits · Silt traps · Terracing River training/Torrent Control <ul style="list-style-type: none"> · Retaining wall · Gabion wall · Revetment · Spur Check dams Temporary <ul style="list-style-type: none"> · Brushwood · Boulder · Loose stone · Log wood Permanent <ul style="list-style-type: none"> · Gabion Structure · Masonry Combating spread of desert <ul style="list-style-type: none"> · Sand dune fixation · Shelterbelts Water harvesting <ul style="list-style-type: none"> · Percolation ponds. · Farm ponds. 	11 hours

	<ul style="list-style-type: none"> · WHS Land slide control · Bioengineering species (BES) , region wise, collecting planting material and planting · Wattling Use of local Grasses/Trees in erosion prone areas Rehabilitation of Mined Areas/ Power Project sites/road 	
7. SWC Measures For different rainfall regions	Indigenous methods of SWC/ WH Linking SWC/ WH with MNREGA	1 hour
8. Case study	Watershed Management based projects, CAT Plan in HP - Success Stories	1 hour
Excursion & Field Study	Study of available SWC measures during tours/excursions.	3 days

7. Forest Survey & GPS ((25 hours)		
1. Introduction	1-1. Need for survey 1-2. Types of survey · Chain / Tape · Chain and compass	1 hours
2. Chain and Compass survey	<ul style="list-style-type: none"> · Prismatic compass-parts-handling-testing · Errors and their correction · Precautions to be observed -testing the chain -traverse- closed and open -forward and backward bearing. -local attraction and its correction -method of traverse -recording in the field book -plotting the survey -closing error and adjusting it -area calculation 	4 hours
3. Contour and map reading	<ul style="list-style-type: none"> -definition - scale, RF -methods of contouring -instruments used -contour intervals -Contour map reading -Use of 'A-Frame', 	2 hours
5. GPS		
1. Basics of GPS	Component of GPS Working of GPS receiver Advantages and limitations of GPS Use of GPS in the field	4 hours
Field Study (Practicals)	Practice of chain and compass survey Practice of GPS- waypoints, tracks, area Application of GPS to check area of plantation, combating forest offences, use in forest protection	14 hours

8. Basic mathematics & Forest Mensuration (19 hours), excursion 1 day		
1. Basic mathematics , (Elementary geometry and Arithmetic)	<ol style="list-style-type: none"> 1. Units of measurement of length, area, volume, weight, capacity and density under British and metric systems and their conversation factors 2. Perimeter, area of circle, square, rectangle; volume of cylinder, cones, cubes, trapezoids; 3. Fractions, decimal system, percentages, ratios; 4. Calculate area, calculate volume, 5. Slope / gradient, area on slopes, related calculations, use of table 6. Angles, triangles, circles 	10 hours
2. Girth/diameter and height measurement	<ul style="list-style-type: none"> -breast height -use of tape- ordinary/ diameter type and callipers and their advantage and disadvantages - measurement of height using altimeters - diameter-height-volume relationship in trees, 	3 hours
3. Volume measurement	<ul style="list-style-type: none"> -form factor -volume of standing trees -volume of logs using quarter girth formula -stacked volume of firewood (stone, aggregate etc) and use of reducing factor 	3 hours
4. Yield assessment	<ul style="list-style-type: none"> -volume/ out-turn tables -use of wedge prism and point sampling -Use of Abney's level - know about volume tables of common species 	2 hours
5. Enumeration of growing stock	<ul style="list-style-type: none"> -total enumeration -partial enumeration 	1 hours
Excursion	Practice of Use of Instruments- Calliper, Abney's level, Haga altimeter, Wedge prism etc.	1 Day

9. Forest Engineering (22 hours), excursion 1 day		
1. Building materials & their measurements	<ul style="list-style-type: none"> -stone -bricks-size-number/M3 -lime, cement sand and metal -mortar -concrete-cement-RCC 	4hour
2. Building construction	<ul style="list-style-type: none"> -Site selection -Ground tracing -Foundation -DPC -Brick Masonary -Stone Masonary -Plastering -Painting -Roofing -Flooring -Doors and windows 	10 hour
3. Water supply	- Sanitary fitting	1 hour

4. Road	-Types of forest roads -Alignment in plains and hills -hair pin bends -Camber, super elevation, gradient -side drains and their maintenance Inspection Path/Bridle path	3 hour
4. Estimate	- making simple estimates of structures i.e. retaining wall, breast wall, check dams etc	3 hour
Practical	Study of parts of a building in the campus	1 hour
Excursion	Study of various types of forest roads and their parts during tour/ excursions	1 day

10. Forest Utilization (30 hours)

10.1 Forest Products and their Importance

	<ul style="list-style-type: none"> ▪ Definition of forest produce ▪ Classification of NTFPs and timber products ▪ Availability of NTFPs and timber products in HP. ▪ The social, economic and ecological importance of forest land products ▪ Explain the importance of NTFP and timber products, in HP. 	4 hours
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10.2 Non Timber Forest Products

	<ul style="list-style-type: none"> ▪ Species producing important NTFPs e.g. grasses, medicinal herbs, shrubs, spices, dyes, fruits, bamboo etc. ▪ Uses of the part of plants yielding products. ▪ Social economic & ecological importance. ▪ Stakeholders analysis. ▪ Bottlenecks and scope for co-operative processing and marketing of NTFPs. ▪ Case studies of indigenous "scientific" management of NTFPs. ▪ Raising NTFPs as revenue source in PFM through village co-operatives ▪ Resin Tapping- Enumeration, Rill Method, Bore Hole Method and maintenance of record (preparation of damage bill) ▪ List of most frequently used species Indicate parts of the species mostly used & describe & Explain their propagation & exploitation Describe the process of collective management by User groups Explain the present marketing bottlenecks and scope for improvements/rationalization. 	10 hours
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10.3 Timber Forest Products		
	<ul style="list-style-type: none"> ▪ Important uses of timber products in HP. ▪ Parts of the trunk & branches yielding products. Social, economic & ecological importance. Stakeholder's analysis. ▪ Bottlenecks and scope for co-operative processing and marketing of Timber products ▪ Case studies of indigenous "scientific" management of timber products Utilizing timber products as revenue source in PFM through village co-operatives ▪ Explain the industrial & other basic uses of wood. 	6 hours
10.4 Logging, Tools & Implements		
	<ul style="list-style-type: none"> ▪ Use of logging process, kinds of tools and implements- their required use saws, axe, cable puller, wedge, bill hook Tool maintenance ▪ Brief idea of modern logging tools such as cable puller, power chain saw ▪ Explain the proper use of logging process, tools and implements. ▪ Calculate The Diameter, Girth, Height And Volume of A Standing Tree Use A Conversion Table 	2 hours
10.5 Felling, Conversion & Transportation Methods		
	<ul style="list-style-type: none"> ▪ Different methods of felling, conversion & transportation of the products & Extraction of charcoal, katha and resin by traditional methods. ▪ Maintenance of record of yield of charcoal, katha, resin ▪ Explain the proper method for harvesting & transportation of the products. 	3 hours
10.6 Depots		
	<ul style="list-style-type: none"> ▪ Definition, kinds & their basic utilization ▪ Defects in Timber- ▪ Identification of important Timber species ▪ Maintenance viz lot preparation, protection from fire, termites, ▪ Stacking, lay out, timber passing ▪ Maintain a record ▪ Calculation of Volume of charcoal, fuelwood, and khairwood w.r.t the technical orders 	5 hours

	<ul style="list-style-type: none"> ▪ Use a conversion table Rules and field record for marking and enumeration. ▪ Explain the term depots, kinds and their maintenance Prepare lots maintain a record. 	
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11. Forest Law (28 hours), excursion 1 day, tour 2 days

1. Definition and legal Classification of forests	-forests, forest officer, forest produce cattle, vehicles, seizure and confiscation -Reserved forests: reserved lands, protected forests, village forests, private forests, revenue forests and unclassified forests.	2 hour
2. Acts & rules related to forests	Study of the important sections of the following acts: -Indian forest act or state forest act as the case may be -Forest conservation act, 1980 - FRA,2006 - IPC -Criminal procedure code, -LPA 1978, -HP PPA,1971 - Biodiversity Act - EPA ,1976 -HP Non Biodegradable act -Mining rules -Timber Distribution rule ,2013 - Fire rules -special forestry- related acts/ rules of the state concerned like sandalwood/ red sanders possession	15 hours
3. Detection of offences	-powers of forest officer -detection, investigation, custody of seized produce. -preparation and filing of offence report/ first information report. -preparation of seizure report -arrest of the accused - detention of accused (Human Right Issues) -compounding/ prosecution of the case -custody of seizures -non-bail able warrants -punishment for various violations	3 hours
4. Forest produce - Transit rules, 2013	-transit of forest produce, Transit Pass, Confiscation of tools, Saw Mill Regulation Rule, River Rules, Sale of Timber Act, 1968	3 hours
5. Practical	A mock session will be conducted in apprehending a forest offender and following the procedure, step by step, till the case is disposed of	2 hours

6. Other Acts	Right to Information Act Background, Genesis, Salient feature, PIO, Appeal, Record Maintenance, Quiz, Exercises, Case studies	2 hour
	Labour Laws and Minimum Wages Act	1 hour
Excursion & Field Study		3 Days

12. Forest Protection (30 hours), excursion 1 day, tour 4 days

1.Introduction	1-1. Overview of the forests of the state 1-2.Why Forest protection -Uses and importance of Forest (Tangible and intangible) -Present Status of Forests - Future needs : Importance in Changing Climatic scenario 1.3. Factors responsible for degradation of forests. -cattle, -fire -flood -natural calamities (frost , drought) - Man made causes: Livelihood dependence on forest, industrial/ development projects. 1.4.Forest Protection vis- a – vis livelihood dependence of people 1.5. Duties, responsibilities and power of the field staff in protection of the forests.	5 hours
2.Forest fires	2.1 causes, types and effect on forests. 2.2 prevention measures -fire lines -control burning 2.3combative measures -watch towers -fire watchers -use of fire fighting equipment -counter firing 2.4.fire occurrence and damage reports 2.5dealing fire offences	4 hours
3.Grazing and browsing	-effects of grazing and browsing: extent in HP -regulation of grazing: fencing i.e. stone wall, barbed wire, social fencing, Cattle proof trench, Live fencing -rotational grazing, controlled, deferred, stall feeding etc.	3 hour
4.Human interfaces and their control	4.1.Illicit felling: Cause, extent, prevention & control - Enforcement: Beat systems, DRs & Premises, Forest CPs, Flying Squads, Van Thannas - Incenctives: under JFM/PFM	9 hours

	<p>4.2 Means to tackle and address issues of forest protection :</p> <ul style="list-style-type: none"> -Knowing vulnerable points, regular patrolling , Group patrolling - Local networks, information on smugglers, rewards and incentives. -Good relation with public (Fairness in TD sanction/ record) <p>4.2. encroachments:</p> <ul style="list-style-type: none"> -Cause, extent, prevention & control -Boundary Registers, RFs &DPFs, BPs (construction repair and location with GPS) -Issues in Demarcation and Use of GPS - Introduction to revenue terminology and revenue documents <p>4.3. Willful setting of fires.</p> <p>4.4 Traditional Approach of protection: Success & failures</p>	
5. Injuries by plants	<ul style="list-style-type: none"> -climber -weeds -parasites 	1 hour
6. Injuries due to wild animal, pests and diseases	<ul style="list-style-type: none"> - debarking, girdling , fungal and insect attack of important species in forests and nursery wrt HP - Control & preventive methods of important diseases 	3 hour
7. Injuries due to natural calamities	<ul style="list-style-type: none"> -flood and land slide -drought -frost -snow -soil erosion 	1 hour
9. Protecting Forest Plantation	Grass sharing method, maintenance by local women/ SHGs, Good Mix of NTFP Trees, involvement in conflict resolution.	2 hour
10. Issues with exotic and Invasive species	<p>Invasive Alien Species ,threats of IAS and dealing with IAS</p> <ul style="list-style-type: none"> -Indigenous that control IAS, Finding use of IAS, - Involving children, schools, people, other departments about issues of exotics, -Lantana eradication technique & rehabilitation -Monitoring the spread of IAS 	2 hour
Excursion & Field Study	Observation of fire lines etc.	5 Days

Participatory Forest Management (37 Hours) Excursion 4 Days

JOINT FOREST MANAGEMENT	SUGGESTED COURSE CONTENT
<p>Objectives: To Understand</p> <ol style="list-style-type: none"> 1. What Is JFM/PFM? Why Was It Required? Brief History 2. Current JFM/PFM Rules / Regulations In Practice 3. FDA, Structure & Functioning; 4. Problems & Issues In Implementing 	<ol style="list-style-type: none"> 1. Brief History, Forest Policy of 1988 & JFM/PFM Resolution, Adoption By States, What Led To Idea Of JFM/PFM? 2003 & FDA; 2. Brief History Of JFM/PFM In HP, DFID, SVY, PFM Regulations, FDA & its Guidelines; Structure Of JFM/PFMCs &

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<p>JFM/PFM</p> <p>5. Role of Panchayats And Gram Sabha; Implications of FRA, 2006</p> <p>6. Understanding Local Priorities In Forest Management</p> <p>7. The HP Experience of JFM/PFM and Lessons Learned (e.g. Working In Degraded Forests?)</p>	<p>Functioning;</p> <p>3. Coming Of FDA, its Structure, Society Format, How It Works, Weaknesses;</p> <p>4. Tried only degraded forests, few returns, waged work format, structure & functioning of JFM/PFMCs, domination by elite men, no social audit or follow up; poor record keeping;</p> <p>5. new guidelines of Gol for FDA, JFM/PFMCs constituted / elected by gram sabhas, elements of the FRA, 2006 & implications for JFM/PFM; individual and community rights;</p> <p>6. Different priorities in different sections of village society, how to reconcile? JFM/PFM for more forest dependent interests, fulfillment of local needs a priority;</p> <p>7. choosing the right communities, working with them, enhancing returns from JFM/PFM, working in better forests, stress on NTFPs / grasses / firewood;</p>
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13. Participatory Forest Management (37 hours) Excursion 4 days		
13.1 Concept of JFM/PFM (5 hours)		
1. Definition	<p>1.1 what is JFM/PFM, CFM?</p> <p>1.2 learn definition of JFM/PFM in state and national JFM/PFM guidelines (latest versions):</p> <ul style="list-style-type: none"> ▪ what is common to all? ▪ what is different? ▪ if different, why? ▪ what is specific to your own state? 	1 hour
2. Concept	<ul style="list-style-type: none"> ▪ why from the conventional management of forests did JFM/PFM/PFM evolve? ▪ what was the status of: protection, harvest and provision of benefits in: <ol style="list-style-type: none"> 1. conventional forest management 2. Social forestry 3. JFM/PFM/PFM <p>Accept and describe the need for JFPM. Explain the <i>broad outline of Natural Forest Policies, State Forest policy</i>, scope opportunities for JFPM approach in HP</p>	1 hour
3. Key principles	<p>3.1 What is management of resources?</p> <ul style="list-style-type: none"> ▪ what are the resources available to be managed in the forests? ▪ why the resources are to be managed? ▪ what is the difference of carrying 	1 hour

	<p>capacity of forests with canopy? -visualize canopy wise availability of resources. (between 0.1 and 0.4, more than 0.7) 3.2 what is joint management of resources?</p>	
4.Present status	<ul style="list-style-type: none"> ▪ what are the achievements so far? ▪ what are the drawbacks? ▪ vis-à-vis goals set by state JFM/PFM guidelines 	1 hour
6.Scope and limitations	<ul style="list-style-type: none"> ▪ what will be the measures to fill gaps? ▪ what will be possible limitations? 	1 hour
13.2 JFM/PFM stakeholders (2 hour)		
1.Roles and responsibilities of different stakeholders	<p>Do the exercise as described below in terms of production, protection, harvest and provision of benefits.</p> <p>1.FD</p> <ul style="list-style-type: none"> ▪ enumerate functions of FD and in particular those of field staff. ▪ compare the outcomes with the description in JFM/PFM guidelines. <p>2.JFMC/VFDC/EDC (joint forest management committee/village forest development committee/eco development committee)</p> <ul style="list-style-type: none"> ▪ enumerate functions of FD and in particular those of field staff. ▪ compare the outcomes with the description in JFM/PFM guidelines. <p>3.SHG</p> <ul style="list-style-type: none"> ▪ enumerate functions of FD and in particular those of field staff. ▪ compare the outcomes with the description in JFM/PFM guidelines. <p>4.NGO</p> <ul style="list-style-type: none"> ▪ Enumerate functions of FD and in particular those of field staff. ▪ compare the outcomes with the description in JFM/PFM guidelines. 	2 hours
13.3. CBO building (10 hours)		
1.Roles and responsibilities	<ul style="list-style-type: none"> ▪ discuss and determine the following for each of the actors: 1. roles 2.Responsibilities 3.rights: 4.accountable to: <p>(FD)</p> <ul style="list-style-type: none"> ▪ FRO ▪ FR ▪ FG ▪ (JFMC/VFDC/EDC) ▪ president 	2 hours

	<ul style="list-style-type: none"> ▪ vice president ▪ secretary ▪ treasure ▪ executive committee members ▪ members ▪ (others) ▪ SHGs ▪ NGO workers (or any person assuming the same functions) <p>Allocate above enumerated roles, responsibilities and rights to each of the stages figured out in the previous session on stakeholders</p>	
2.MOU and Registration	<ul style="list-style-type: none"> ▪ why MOU is necessary? ▪ examine the prototype of MOU and consider the above outcomes. ▪ what will be the measures to make each of stakeholders assimilate MOU? ▪ what will be the local specifics to be considered and integrated to MOU? 	1 hour
3.Record keeping	<ul style="list-style-type: none"> ▪ what will be basic records to be kept to monitor the progress of JFM/PFM? ▪ what will be the benefits of each record? ▪ who maintains which record? ▪ for how long? ▪ What training will be needed to keep these records? ▪ list up available records presently according to the norm set by JFM/PFM guidelines-who maintain actually? ▪ how to disseminate information maintained in the records to all the stakeholders? 	1 hour
4.Conducting meetings	<ul style="list-style-type: none"> ▪ list up possible meetings of JFM/PFM? ▪ describe purpose of each meeting. ▪ who convenes which meeting? ▪ is notice necessary to convene meeting? What will be the norms for notice determined in the bylaws? ▪ what are the requirements for a meeting to be legally valid? ▪ how to set agenda for a meeting? ▪ what are the protocols to be observed during a meeting? ▪ who keeps the record? How to record? What items to be recorded? ▪ how to arrive at a conclusion? Decision? In case of debate. ▪ is follow-up necessary? ▪ how to follow up? Who is follow-up? 	1 hour
5.Fund Management	<ul style="list-style-type: none"> ▪ what is income? Expenditure? Savings? Fund? ▪ examine the prototype of bylaws and consider the above outcomes. 	1 hour

	<ul style="list-style-type: none"> ▪ what will be the measures to make each of stakeholders assimilate bylaws? ▪ what will be the local specifics to be considered and integrated to bylaws? 	
6. JFMC/VFDC/EDC and Legal Issues	FDA Himachal Pradesh Society Registration Act 2006 Panchayati Raj Act/PESA Act1996	4 hours
13.4 Forests & Livelihood (5 hours)		
	<ul style="list-style-type: none"> • Introduction, poverty & its effects on forestry, dependence of rural people on forests . • Common property resource management, rural forestry needs and forest based problems • Rural development through forestry, alternative sources of income generation (NTFP) Eco tourism and Rural Development. • Facilitate the sustainable socio-economic development of rural people, main relation to forestry and with the help of line departments. 	5 hours
13.5 Communication Skills (5 hours)		
	<ul style="list-style-type: none"> • Introduction, different ways and means of communicating, transactional analysis. • Listening skills, application (tools), non-verbal communication, communication gap-local culture & language, presentation (skills- role plays, case studies etc • Communicate within FD and with communities in a better way to establish good rapport with local people and perform the job of an effective extension worker facilitator. 	5 hours
13.6 Gender Issues (2 hours)		
	<ul style="list-style-type: none"> • Introduction to gender bias, role of men & women in forestry case studies how to resolve the gender biases and conflicts. • Analyse the role of women in effective planning, management and sustainable of forest land resources and associate them in meaningful participation for planning and management. 	2 hours

13.7 PRA (4 hours), excursion 2days		
1.Social map	-concept of PRA . -Explain the process of JFM/PFM group formation Assist in the preparation and implementation of need based site specific micro plans involving the local people in planning and implementation process -definition of social map and its use	4 hours
2.Resource Mapping	-Definition of resources map and its use -practice	
3.Transect	-definition of transect and its use -practice	
4. Time line	-Definition of timeline and its use -Practice	
5. Trend Analysis	-Definition of trend analysis and its use -Practice	
6.Seasonal Diagram	-definition of seasonal diagram and its use -practice	
7. Matrix Scoring/Ranking	-Definition of matrix Scoring/Ranking and its use -Practice	
8.Venn Diagram	-definition of Venn diagram and its use -practice	
Excursion	Apply PRA for resource mapping. Also apply forest botany.	2 days

13.8 Micro Plan (4 hours), excursion 2days		
1.Planning process	-plan and action plan -micro plan & “macro” plan -planning process	4 hours
2.process and steps of MP	-who to make -what to describe	
3.methods	-use of PRA -integration of silviculture of trees and botany -simple statistics	
4.treatment plan and management plan	-treatment plan -management plan -use of local resources for IGA in JFM/PFM	
5.roles and responsibilities for planning and implementing MP	-roles and responsibilities of stakeholders during planning and implementation -description of roles & responsibilities of stake holders in MP	
Excursion	Sample MP making in a village	2 days

14. Computer application (30 hours) Theory & Practical		
1.OS	Basics of OS (windows)	30 hours
2.Internet	Email and net browsing	
3.Word processor	MS word	

4. Spread sheet	MS Excel	
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15. First Aid (2 hours)		
1. Different First Aid Exercises		2 hours

16. Current trends in Forestry 10 hours		
1. Climate Change & Global Warming 2. REDD+ 3. CDM 4. Any other current issues		10 hours

ANNEXURE- 1

LIST OF BOTANICAL SPECIES

Trade / Local name	Botanical name
Deodar	<i>Cedrus deodara</i>
Spruce	<i>Picea smithiana</i>
Chir pine	<i>Pinus roxburghii</i>
Blue pine	<i>Pinus wallichiana</i>
Ban oak	<i>Quercus leucotricophora</i>
Silver fir	<i>Abies pindrow</i>
Khair	<i>Acacia catechu</i>
Amla	<i>Embllica officinalis</i>
Harar	<i>Terminalia chebula</i>
Behra	<i>terminalia bellerica</i>
Sissoo	<i>Dalbergia sissoo</i>
Bamboo	<i>Dendrocalamus strictus</i>
Sal	<i>Shorea robusta</i>
Mulberry	<i>Morus alba</i>
Teak	<i>Tectona grandis</i>
Tooni	<i>Toona ciliata</i>

Other important Medicinal & Bioengineering species

List of Wildlife Species

1. Leopard
2. Snow Leopard
3. Black & brown bear
4. Monkeys & langoors
5. Sambar, barking deer, nilgai
6. Pheasants (Western Tragopan, Cheer , Monal , Peafowl, Red jungle fowl)