

Sub: Forest Protection for FSO(P) 3 months Training Syllabus			
Sl.No	Topic	Sub-Topic	No. of Sessions for Theory-Practical
1	Introduction of Forest Protection	1.1. Importance of Forest Protection 1.2. Direct & In-Direct Eco Services	1
2	Protection of Forests from loss and Injury	2.1. Smuggling of Forest Produce- Timber, Sand, Minerals, MFP, etc., 2.2. Poaching 2.3. Encroachment 2.4. Illegal Mining	1
3	Forest Protection Strategies	3.1. Regular Patrolling 3.2. Protection of Forest Boundary Pillar/ Cairas & their Maintenance – formation of CPT, bund stabilization / vegetative barriers 3.3. Beat Inspection 3.4. Preparation of Forest Offence Maps 3.5. Information network, surveillance. 3.6. Raids, Nakabandhi, cordon and search 3.7. Co-ordination within department - Information sharing, Team work with adjoining Beats, Sections, Ranges. 3.8. Coordination with Line Departments viz., Police department, Revenue Department, Transport Department, Survey & Settlement Department, Animal Husbandry etc 3.9. Dog squad 3.10. Base camp, Striking Force, Establishment of Check-posts. 3.11. Wireless Network, Fire Arms.	4
4	Forest Fire	4.1. Causes, Classification & Damage caused by fire 4.2. Fire risk zonation, Use of fire alerts 4.3. Fire control- traditional & modern tools (rakers, blowers, wet twigs, fire dept equipment)	2
5	Protection against injuries by Domestic Animals	5.1. Damage of Forest by grazing animals (Grazing policy, Rotational grazing, Periodical Grazing and Monsoon Closure) 5.2. Browsing animal	1
6		Important Govt orders/ PCCF Circulars	1
		Total	10

Syllabus for Forest Mensuration for FSO(P) 3 months Training

Sl.No	Topic	Sub-Topic	No. of Sessions for Theory-Practical
1	Introduction	1.1. Objectives of FM in forestry 1.2. Systems & units of measurements in FM	1
2	Measurement of Diameter & girth of Tree	2.1. Measurements of Diameter and Girth of trees- DBH measurements & its significance 2.2. Standard rules of DBH measurements, relation of Diameter & Girth 2.3. Instruments used in measurements (calipers, Tapes), Rules of measurements 2.4. Measurement of Bark thickness.	2
3	Measurement of height of Tree	3.1. Measurement of height of tree-technical terms of height 3.2. Methods of measurements of height: Shadow method, single pole method, instrumental methods, Ravi altimeter 3.3. Geometric principles of similar triangles : Methods 3.4. Sources of errors in height measurement 3.5. Measurement of height of leaning tree-cases I, II, III	(2+1)
4	Area Calculations	4.1. Formulas of areas- various shapes, area measurement in trees and timber cross-sectional area(basal area),bole surface area, crown cover 4.2. Measurement of area -(land area)- Calculating, planting area - Inspection path area, calculation of no. of plants / Ha.,	2
5	Measurement of Volume of Tree	5.1. Measurement of volume of trees-object, tree volume, volume of felled trees and formulae for calculation of volume. 5.2. uses of volume table. 5.3. Measurement of branch wood-solid volume of firewood, specific gravity method, conversion factor	(3+1)

		5.4. Volume of standing trees.	
		5.5. Measurement of stacks and calculation of volume	
6	Age and Growth of Trees	6.1. Age of trees-object, methods of determination of age	2
		6.2. Determination of age of felled trees	
		Definition, classification of increment, relation between C.A.I. & M.A.I. Method of determining growth of trees with annual rings	
		Total	

Syllabus for Forest Law for FSO(P) 3 months Training

Sl. No	Topic	Sub-Topic	No. of Sessions for Theory-Practical
1	Introduction and Various Acts and codes for protection of forests and wildlife	1.1. Concept of Forest Law and its usefulness in protection of forests 1.2. Brief details of following Acts, Rules & Codes T.S. Forest Act 1967 and rules made there under Wildlife Protection Act 1972 (dealt in wild life management) Biodiversity Act 2002 Forest (Conservation) Act 1980 WALTA Act-2002 RoFR Act 2006 Environmental Protection Act -1986 IPC (Indian Penal Code)-1860 CRPC (Criminal Procedure Code)-1973 PD Act-1974 Cattle trace pass Act-1861 Indian Evidence Act-1872 Civil Procedure Code	1
2	TS Forest Act 1967 and Rules made there under TS Forest Act 1967 and Rules made there under TS Forest Act 1967 and Rules made there under	2.1. T.S. Forest Act 1967 - All X chapters, special focus on, 2.1.1. Sections 2 to 16 2.1.2. Section 20 Penalties for trespass or damage in Reserve Forest 2.1.3. Protected Forest Section 27 2.1.4. Private Forest sections (28 B & E) 2.1.5. Difference between RF and PF 2.1.6. Powers of Forest Officers (section 20,30,41,44,51,53, 54,58,59,62,63,64,65 ,70). 2.1.7. Cattle Trespass Act 1861. 2.2.Rules made under TS Forest Act: All Rules made under this Act, special focus on the following rules, 2.2.1.Telangana Forest Produce Transit Rules 1970 2.2.2. Telanagana Forest Offences (Compounding and Prosecution rules. 2.2.3. Telangana Wood Based Industries (Regulations) Rules, 2016 2.2.4.Telangana Protected Forest Rules,1970 2.2.5.Telanana Teak wood possession rules, 1970 Application of PD Act to Forest Offences.	3 2
3	Wildlife Protection Act 1972	i) Definitions of terms used in the WP Act ii) Important Sections iii) Investigation of wildlife offences iv) Sample Collection and Submission procedure for identification of WL animals in Lab	
4	Forest Conservation Act 1980	3.1.Definitions of terms used in the FC Act 3.2.Important sections-2,3A & B 3.3 FC Rules 6,7 &8:	1

		3.4. Procedure for permission for using Reserve forest for non forest works i.e. Diversion of Forest Land	
5	RoFR Act 2006	Definition, Important Provisions and Rules Sections 6 and Rules 3 to 8, Committee, Claims, Duties & Responsibilities of Forest Officials & their Claims.	1
5	Biodiversity Act 2002	5.1.Definition, background to CBD Act and importance to forestry 5.2.BDMC Village Level & Mandal Level and their roles 5.3 Important sections-7,54,55,56 and 61 (Offences, powers of forest officers,, fines and Notification for Inquiry Officer) 5.4.Biodiversity Management in community forestry.	1
6	WALTA -2002 Water, Land & Tree Act -2002	6.1.Definitions 6.2.Important sections section -28 to 38 Rules 8-10	1
7	IPC(Indian Penal Code)	7.1. Definitions 7.2. Use of Penal Code for protection of forest i.e., theft IPC 378 R/w 379 7.3. Criminal mis-appropriation Sec 403 7.4. Criminal breach of trust –Sec 405, 41A 7.5. Receiving stolen property Sec 410 7.6. Criminal trespass – Sec. 411 435 IPC 7.7.Abetment Sec 107 7.8. Unlawful assembly Section 327, 329, 330, 331, 332 IPC	1
8	CRPC - 1973 (Criminal Procedure Code)	8.1. Definitions, 8.2. Important Sections 4(2), 468, 469 8.3. Bailable and Non-bailable offences in forests as per schedule 1 Of CrPC. Local Laws and Special laws, Bailable and Non Bailable offences, Cognizable and Non -cognizable offence, Warrant case and Summon case, Charge / complaint, Inquiry and Investigation, Arrest, Search	1
9	Investigation of Forest Offences	9.1. Definition. 9.2. Exhibits to be produced in the Hon'ble Court of law U/s 4 Sub Sec 2 CRPC 1973 9.3. How to conduct Panchanama /Special Proceedings. 9.4. How to Record the Statement of accused persons. 9.5. Recording of POR 9.6. Application of relevant sections under Forest Act 9.7. FORM C 9.8. Procuring of Independence witnesses 9.9. Prosecution orders from competent authority 9.10. Preparing of Remand report to be produced before the Honble Courts along Documents. 9.11. Preparing of Charge Sheet/ Complaint to be filed before the Hon'ble Court as per Law along with documents.. 9.12. Protocol to be followed by the I/O in approaching the Hon'ble court for initiating prosecution of the accused person	(3+2) (3+2)

		9.13.Successful case laws pertains to forests	
		9.14. Dealing of Vehicle Cases	
		9.15.Application of PD Act to Forest Offenses - Practicals	
10	Evidence Act and Miscellaneous Acts	10.1. Evidence Act: Definitions of	1
		10.1.1. Admission	
		10.1.2. Confession	
		10.1.3. Statement recorded U/s 25 of Evidence Act	
		10.1.4. Oral, Documentary evidence	
		10.1.5. Scene of offence	
		10.1.6. Environment Protection Act- 1986	
11	Practicals	Visit for trials in the court of Law Conducting of court trials by the trainees (Mock Exercise)	(1+1)
12	Important Government Orders / PCCF Circulars and Miscellaneous	12.1. Important Government Orders / Circulars	2
		12.2. Writ petitions, Civil suits against Forest Officers	
		12.3. Judgments & Amendments	
		Total	25+5

SUBJECT: Geology & Soil Science for FSO(P) 3 months Training Syllabus

S. No.	Topic	Sub-topic	Sessions
1	Geology	1.1 Definition & relation to Forestry	1
		1.2 Earth Crust, Weathering Process & Its types	
		1.3 Classification of Rocks & Characteristics	1
		1.3.1 Igneous Rocks	
		1.3.2 Sedimentary Rocks	
		1.3.3 Metamorphic Rocks	
		1.3.4 Identification, Places of occurrence in Telangana	
		4.1 Importance of Minerals in forestry	1
		4.1.1 Primary and Secondary Minerals	
		4.1.2 Essential Minerals	
2	Soil Science	4.1.3 Identification, Places of occurrence in Telangana	
		4.1 Soil Formation	2
		4.1.1 Types and properties	
		4.1.2 Soil Profile	
		4.1.3 Soil Testing and Analysis	
		4.1.4 Humus	
		4.1.4 Soil Nutrients	
		4.1.5 Soil Atmosphere	
		4.1.6 Soil Micro Organisms	
		4.2 Soil Erosion	1
3	Watershed Management & Soil Moisture Conservation.	4.2.1 Causes of Soil Erosion	
		4.2.2 Wind Erosion & factors affecting	
		4.2.3 Water Erosion & factors affecting	
		4.2.4 Gravity	
		5.1 Watershed Concept	1
		5.1.1 Hydrological cycle and importance	
		5.1.2 Rainfall Characteristics	
		5.1.3 Four waters concept	
		5.1.4 Stream ordering and delineation of micro watershed	2
		5.2 Soil & Moisture Conservation in Forest Areas	
		5.2.1 Definition & Objectives of Contour lines	

		5.2.2 Characteristics of Contours	2
		5.2.3 Countour Interval	
		5.2.4 Use of A Frame in Countouring	
		5.2.5 Contour Trenches	
		5.2.6 Gully Plugging	
		5.2.7 Check Dams	
		5.2.8 Mini Percolation Tanks & Percolation Tanks	
		5.2.9 Rock Fill dams	
		Total	11

SUBJECT: Silviculture for FSO(P) 3 months Training			
Sl.No	Topic	Sub-Topic	No. of Sessions
1	Introduction to General Silviculture	Definition & Silvicultural Terms	1
		Objectives	
2	Locality Factors	Classification of factors	1
		Climatic Factors: Light, Heat, Temperature, Moisture and Wind	
		Topographic Factors: Configuration of land surface, Altitude, Slope and Aspect & exposure	
		Edaphic Factors, Soil Humus Etc., Biotic Factors, Plants, Insects Wild animal, Domestic Animals	
3	Classification of Forests	Need and importance of classification of forests	1
		Systems of classification	
		Types of forests (Champion & Seth)	
4	Natural Regereneration	By Seed coppice, pollarding and root suckers	1
5	Tending Operations	Weeding, climber cutting, pruning	1
		Thinnings & Types	
6	Management of Bamboo Forest	Categorization based on clump density	2
		Scattered, Dense and Pure Bamboo	
		Working cycle & felling cycle	
		Bamboo improvement & protection management	
		Soil working, Mulching, Decongestion, Mounding, Cleaning	
	Silviculture of Species & Its characters	Bamboo felling rules	
		Definition, Objectives, Description of species	1
		(a) Habit (b) Habitat (c) General Description (d) Identification of characters (e) Seed (Collection, Viability, Treatment, Germination, Percentage) (f) Planting Technique	
		Teak, Bamboo and other Mis. Speices	
		Total	10

SUBJECT: Plantation Forestry Including Nursery & ANR for FSO(P) 3 months Training Syllabus

S. No.	Topic	Sub-topic	Sessions
1	ANR Plantains	(i) Protection Measures of Forests against Bio-tic factors	3
		(ii) Intervention with different activities for rejuvenation degraded forests	
		(iii) Role of Local people for Protection of degraded forests	
2	AR Plantations	i) Site selection criteria for raising of AR Plantations	4
		(ii) Raising of AR Plantations in LI Method	
		(iii) Raising of AR Plantations in SM Method	
3	Avenue Plantations	(i) Raising of Avenue Plantations along various roads	3
		(ii) Selection of species suitable for different soils	
		(iii) Maintenance of Avenue Plantains	
4	Nurseries	Collection of different seeds for Nurseries	7
		(ii) Different Treatment Methods for different seed	
		(iii) Germinations percentage (%) and viability of different seeds	
		(iv) Criteria for selection of new nursery site	
		(v) Collection and composition of Soil Mixture	
		(vi) Different sizes of Polythene bags and size of beds with different sized polythene bags	
		(vii) Conversion of bag plants from smaller to bigger bags	
5	Circulars & Govt.Orders		1
		Total	18

SUBJECT: FOREST SURVEY for FSO(P) 3 months Training			Sessions
S. No.	Topic	Sub-topic	
1	Forest Survey	Role and importance of FS in forests. necessity of scale in drawing map or plan - Types of scales – fixed proportion and representative fractions Characteristics of a Good scale Classification and construction of scales: -Plain scale.	2
2	Linear measurement	Methods of measuring distances 1. Direct method with chain or tape 2. Indirect method by calculating as in triangulation Types of Direct method Pacing, Ocular estimation, speedometer, wheel pedometer, Odometer, Passometer, Recording time and chaining Measuring with chain (plain ground): Chain - types of chains Advantages and Dis-advantages of chain 1. Folding and Unfolding and Testing of the chain with test guage 2. Adjusting and standardising the chain length Arrows 1. Errors in length and area due to incorrect chain – correction with formulae Measuring plain ground with chain 1. Ranging out Survey line and Measuring i. Direct Ranging ii. Indirect or Reciprocal Ranging Measuring with chain (Slopy ground): i. Direct (Stepping) Method ii. Indirect (Calculation) methods: Uniform and undulating slopes 1.Types of tapes cloth tapes, metallic tapes, steel tape and Invar tape 2.Usage of tapes in Forest Survey 3.Instruments for marking stations: pegs, ranging rods, ranging poles and whites	1
3	Chain surveying	Introduction Chain triangulation Equipment required for chain survey Common terms used in chain survey: 1.well conditioned & ill – Conditioned triangles 2. survey stations, selection of stations, station lines 3. Skeleton or frame work of survey 4.Base line or check or proof line and Tie line 5.Offsets-perpendicular and oblique offsets 1. Instruments for setting out right angles for taking offsets and their usage: Wooden cross staff, Open cross staff and trench cross staff Method of using a cross staff Execution of a chain survey : Reconnaissance survey, Marking stations, Chaining and Offsetting, Field book recording Obstacles in chaining and measuring procedure: i) Chaining free but vision obstructed ii) Chaining obstructed but vision free iii) Chaining around the obstacles is not possible iv) Chaining and vision both obstructed	2
4	Chain and Prismatic Compass surveying	Prismatic Compass Parts and usage in Forest Survey Common terms used in Prismatic Compass Survey Traversing : Open traverse or un closed Traverse & Closed traverse Methods of Traversing: by chain angles, (chain alone), by chain and cross staff, and by chain & prismatic compass Method of traversing by chain & prismatic compass Using of prismatic compass: Centering, Leveling, Focusing the prism, Observing the bearing Common errors in prismatic compass observations: a. Instrumental errors b. Errors of manipulations at sighting c. Errors due to external influence Precautions in the use of prismatic compass including local attraction identification and its correction Prismatic compass survey- briefing on field work and field work (two rounds)	1
5	Plotting and Computation of	List of drawing materials, Conventional Signs Mounting a drawing paper on drawing board	1

	Areas	Plotting a traverse survey : meridian through each station b. By circular protractor method c. By included angles Closing error d. Closing error adjusting by graphical method	a. By parallel 1
		Methods of computation of areas 1. Grphical method 2. Triangulation method	
6	Levelling Survey	Importance of Levelling survey in forest Instrumentation of Dumpy level Dumpy Level Levelling survey using Dumpy level	1
7	Demarcation of Forest Boundaries & Revenue Terminology	1. Revenue terminology with reference to Forest 2. Reservation files - Area Statements, Notifications, Reservation Maps 3. Correlating Reservation Maps with village maps 4. Field book conversion from British to Metric 5. Fixing location of Missing pillars. 6. Geo-referencing the Forest Boundaries 7. Reconciliation of Forest Records w.r.t. Revenue records 8. Joint inspection w.r.t. Forest Blocks	4
8	Important Government /PCCF Circulars	Circulars on Forest boundary survey and joint inspections etc.	1
		Total	19

SUBJECT: Social Forestry & Extension Education for FSO(P) 3 months Training Syllabus		
Sl.No	Topic	No. of Sessions for Theory-Practical
1	Introduction to Idea of Social Forestry	1
2	Farm Forestry, Avenue plantations in view of TKHH	1
3	Preservation and maint of ecological balance in cities urban forestry and Palle Prakruthi Vanam	2
4	State pollution Control Board and its significance	1
5	TSPR Act 2018-Role of Panchayat Raj Institutions in Community Forestry	1
6	Principle of extension adoption process by formers and constrains in the implementation of the programmes 1 Philosophy & Principles of Extension 2 Adoption process and its relevance to community forestry 3 Audio-visual aids-types, suitability for extension activities 4 Skills for using Audio-Visual aids 5 Preparation of simple aids	2
7	Communication process and problems, publicity and propaganda 1.Concept and Principles of Communication 2.Methods of Communication 3.Barriers to effective communication and how to overcome/ remove them	2
8	Motivating people for taking up of social forestry in the field	1
9	Resolutions of Different summits	1
	Total	12

Syllabus for ACCOUNTS & OFFICE PROCEDURES for FSO(P) 3 months Training

Sl.No	Topic	Sub-Topic	No. of Sessions for Theory-Practical
1	Introduction, Classification of Forest Revenue and Expenditure in different sub-heads	1.1. Introduction to Accounts 1.2. Sources of Revenue 1.2.1 Compounding fee, 1.2.2 fines & forfeitures 1.2.3 Sale of forest produce 1.2.4 Rates & Rents, 1.2.5. other receipts 1.2.6 Remittance of receipts and their maintenance 1.2.7 Maintenance of receipts Register	1
2	Execution of forest	2.1.Execution of works and methods of execution	2

	works	2.2. Preparation of Estimates using FSR & SSR 2.3. Sanctioning Authority 2.4. Items of expenditure including work Payments 2.5. Muster Roll-Writing muster roll, 2.6. first and final bill, 2.7. Hand Receipts, 2.8. Running account bills	
3	Maintenance of measurement books(M-Book)	3.1. Definition. 3.2. Importance & maintenance of M Book 3.3. Procedure of recording M.Book 3.4. Check Measurement & Test checking	(2+1)
4	Maintenance of Cash Book	4.1. Definition, 4.2. Procedure to write 4.3. Submission of cash accounts to FRO 4.4. VSS accounts 4.5. Reconciliation of Receipts & Payments	(3+1)
5	Permit stock Register	5.1. Permit stock Register 5.2. Form I Depot to sale depot destination 5.3. Form II sale depot/other places to destination 5.4. Form III B.T Godowns to destination 5.5. Form IV – Within Municipal limits	1
6	Timber Accounts	Timber Accounts as per Forest code and DET Manual, Collection of Beedi Leaf and Disposal (Permits)	
7	Forest Organization & Duties of FSOs and FBOs	7.1. Forest Department - objectives and organogram 7.2. Duties and responsibilities of FSOs and FBOs 7.3. Records to be maintained by FSO - Section information book, SMC Register, Plantation Journal, Nursery Journal, Reservation Records etc., 7.4. kit to be carried by FSO while on duty	1
8	Submission of periodicals (Including Proformae)	8.1. Weekly Tour Diaries 8.2. Beat inspection report. 8.3. Fire Report 8.4. Bamboo flowering report 8.5. Natural calamities	3
9	Service Matters	9.1 Conduct Rules 9.2 CCA Rules 9.3. Annual property statement, 9.4. (TA, TTA, LTC rules) 9.5. Leave Rules 9.6. GIS/TSGLI, GPF & CPS 9.7. Fundamental Rules (Joining, Transfer of Charge) 9.8. Recovery of advances	
10		Important Govt. Orders and PCCF Circulars	1
		Total	14-2

Syllabus for Working Plan for FSO(P) 3 months Training

Sl.No	Topic	Sub-Topic	No. of Sessions for Theory-Practical
1	Introduction	Introduction, Definition, Use for reference and execution of works, working plan period	10
		Objectives of Working Plan	
		National Working Plan code - 2014 and its importance	
		Constitution of Working circles and prescriptions	
		Forest Inventory & Stock Mapping	
2	Forest Inventory (In Details Theory & Practicals)	a) Plot layout	
		b) Data Collection - Field forms	

	works	2.2. Preparation of Estimates using FSR & SSR 2.3. Sanctioning Authority 2.4. Items of expenditure including work Payments 2.5. Muster Roll-Writing muster roll, 2.6. first and final bill, 2.7. Hand Receipts, 2.8. Running account bills	
3	Maintenance of measurement books(M-Book)	3.1. Definition. 3.2. Importance & maintenance of M Book 3.3. Procedure of recording M.Book 3.4. Check Measurement & Test checking	(2+1)
4	Maintenance of Cash Book	4.1. Definition, 4.2. Procedure to write 4.3. Submission of cash accounts to FRO 4.4. VSS accounts 4.5. Reconciliation of Receipts & Payments	(3+1)
5	Permit stock Register	5.1. Permit stock Register 5.2. Form I Depot to sale depot destination 5.3. Form II sale depot/other places to destination 5.4. Form III B.T Godowns to destination 5.5. Form IV – Within Municipal limits	1
6	Timber Accounts	Timber Accounts as per Forest code and DET Manual, Collection of Beedi Leaf and Disposal (Permits)	
7	Forest Organization & Duties of FSOs and FBOs	7.1. Forest Department - objectives and organogram 7.2. Duties and responsibilities of FSOs and FBOs 7.3. Records to be maintained by FSO - Section information book , SMC Register, Plantation Journal, Nursery Journal, Reservation Records etc., 7.4. kit to be carried by FSO while on duty	1
8	Submission of periodicals (Including Proformae)	8.1. Weekly Tour Diaries 8.2. Beat inspection report. 8.3. Fire Report 8.4. Bamboo flowering report 8.5. Natural calamities	3
9	Service Matters	9.1 Conduct Rules 9.2 CCA Rules 9.3. Annual property statement, 9.4. (TA, TTA, LTC rules) 9.5. Leave Rules 9.6. GIS/TSGLI, GPF & CPS 9.7. Fundamental Rules (Joining, Transfer of Charge) 9.8. Recovery of advances	
10		Important Govt. Orders and PCCF Circulars	1
		Total	14-2

Syllabus for Working Plan for FSO(P) 3 months Training

Sl.No	Topic	Sub-Topic	No. of Sessions for Theory-Practical
1	Introduction	Introduction, Definition, Use for reference and execution of works, working plan period	10
		Objectives of Working Plan	
		National Working Plan code - 2014 and its importance	
		Constitution of Working circles and prescriptions	
2	Forest Inventory (In Details Theory & Practicals)	Forest Inventory & Stock Mapping	
		a) Plot layout	
		b) Data Collection - Field forms	

		c) Growing stock	
		d) Concept of Biomass survey	
		e) Carbon sequestration	
	Compartment History	Compilation of Compartment History and Description	
		Total	
		10	

Subject: Forest Produce & Livelihoods for FSO(P) 3 months Training Syllabus			
Sl. No	Topic	Sub Topic	No. of sessions
1	NTFP Management & Value addition	1.1 Definition, various NTFPs 1.2 Yield extraction, Storage and marketing b. Gum tapping c. Katha manufacture d. Grasses, Bamboos, canes and their usage e. Beedi leaf collection f. Toy making (Nirmal Toys) g. Mahua (Madhuca Indica) h. Chironji i. Charcoal - making process 1.3 Sustainable harvest methods – post harvesting process (Cleaning, drying, grading, storage, packing etc.), Value addition-GCC 1.4 Livelihood Enhancement Strategies (Case Studies in Telangana State - short films, videos etc)	1 1 1 1
2	Minor Forest Products & Medicinal plants	a. Fibres and flosses - fibre yielding plants b. Distillation and extraction of products. Grass oils etc., c. Oil seeds - collection, processing and storage d. Tannins and dyes f. Gums - tapping, processing and storage g. Animal, mineral and miscellaneous products i. Miscellaneous products(Soap nut, leaves(Bauhinia spp, Borassus spp.), Marking nuts (Semicarpus anacardium) etc.	1
3	Felling, Logging Conversion	a. Scope for forest utilization b. Basic tools for felling, logging and conversion	1
4	Timber classification at GTD	a. Timber Classification and grading of timber	1
5	Preservation of Timber	a. Factors effecting durability b. Classification of wood in orders of durability c. Properties of wood preservatives d. Wood preservatives – Types – Oil type (cresote method), water soluble (As Cu method) and organic soluble.	1
6	Wood based industries	a. Important wood based industries (Saw Mills) and their products, alternatives to wood	1
		Total	10

SUBJECT: FOREST ENGINEERING FSO(P) 3 months Training Syllabus			
S. No.	Topic	Sub-topic	Sessions
1	Building Material	Concept of Forest Engineering and its importance 1.1 Stone Characteristics of Good quality of stones Different sizes of metals/ gravel 1.2 Bricks Types, Sizes, classification of bricks Characteristics of Good quality of bricks 1.3 Sand Qualities of Good sand Classification of Sand 1.4 Tiles Types of Tiles Characteristics of Good Tiles 1.5 Cement Definition, types Uses of Cement 1.6 Mortar Definition-ingredients Types of Mortar 1.7 Concrete	1 1 1 1

		Definition and uses of concrete Ingredients of concrete Properties of Good Concrete Fullar's Formula for concrete	
		1.8 Reinforcement (R.C.C) Definition & advantages of R.C.C Different sizes of steel and its weights Location of Reinforcement : Beams, Columns and centering, shuttering	
2	Building Construction	2.1 Choices of Site selection for Forest building construction Foundation 2.1.1 Selection of site 2.1.2 Definition, types of foundation 2.1.3 Safe bearing Capacity 2.1.4 Definition of Footing, Damp Proof Course, Plinth beam, Sub structure and Super Structure 2.2 Marking building plan. 2.3 Walls 2.3.1 Definition of Wall and Scaffolding 2.3.2 Different types of bonds 2.3.3 Technical terms related to brick wall 2.3.4 Calculation of No. of bricks per one cu.mt of wall- 2.4 Definition of sills, lintels and its types Brief notes on Plastering, Pointing, types of Flooring 2.5 Roof 2.5.1 Definition, Types of Roofs & coverings 2.5.2 Formwork for roof construction 2.5.3 Roof leakage treatment	1
3	Forest Roads	3.1 Definition, types of Forest Roads 3.1.1 Permanent Roads 3.1.2 Temporary Roads 3.2 Technical terms used in Roads	1
4	Culverts	Definition and types Selection of site for culverts	1
5	Estimates (Construction & Maintenance)	Preparation of building Estimates (3) Quantity calculations(2+1 demo) Repairs to buildings Construction of boundray pillar	2
6	Circulars & Govt.Orders	In Relation to Civil Works	1
			10

Syllabus - Wild Life Management for FSO(P) 3 months Training

SL.No.	TOPICS	Sub-topics	No of Sessions
1	Introduction:	<ul style="list-style-type: none"> • Introduction of Wildlife • Broad Conservation Policy of the Government (Central and State) • Role and Responsibilities of FSO in protection and conservation of Wildlife 	2
2	Wildlife classification	<ul style="list-style-type: none"> • Grazing, browsing, fruit & flower eating animals (Deer, Antelopes, Bovines) • Pollinators, seed dispersers. • Predators (Cat and Dog family) • Omnivores • Scavengers and Carrion feeders. <p>Terrestrial, Arboreal, Burrowing, Aquatic, Amphibious Aerial animals.</p>	1
3	Social Behavior:	<ul style="list-style-type: none"> • Solitary and Group Living. • Territorial and mixed living. • Diurnal and Nocturnal animal, Crepuscular. • Pecking order, group leadership (Patriarchal, Matriarchal, Oligarch). • Cannibalism. 	1
4	Organization of Animal Kingdom:	<ul style="list-style-type: none"> • Vertebrates and their characteristic features (Mammals, Birds, Reptiles, Amphibians, Fishes). • Invertebrates and their importance (Butterflies, Moths, Bees, Beetles, Ants, Maggots, Worms etc.) • Microorganisms in the decomposing, fermenting, digesting, nitrogen fixing etc. • Description of important Wild animals of Telangana like Tiger, 	1

		Leopard, Wild Dog, Sloth Bear, Deers, Antelopes, Bovines.	
	Ex-Situ Conservation: Zoos, Deer Parks, Rescue Centers, Orphanages.	<ul style="list-style-type: none"> • Conservation breeding and re-introduction into wild • Nature Education and awareness. • Housing of animals, requirement of space, ventilation, aeration, exposure to sunlight. • Veterinary care, symptoms and treatment of diseases. • Important contagious diseases of Wild animals (Rinderpest, foot & mouth, anthrax, rabies) need to report, disposal of carcass etc. 	2
6	In-situ Conservation: Wildlife Sanctuaries, National Parks and Tiger Reserves in the state.	<ul style="list-style-type: none"> • Management Plan of Protected Areas • Zonation in Protected Areas (conservation zone & tourism zone) • Implementation of prescriptions of management plan. • Habitat improvement, water management including gridwise mapping of water bodies, fire management, grassland management. • Protected Areas of Telangana and their significance 	2
7	Field techniques for wildlife census	<p>Identification of Wildlife evidences, collection and recording of evidences like:</p> <ul style="list-style-type: none"> • Foot prints (Pugmarks, Hoofmarks etc.) • Feeding signs (grasses, leaves, branches, roots, fruits etc.) • Wildlife remains (carcasses, bones, antlers, quills, feathers, etc.) • Droppings (pellets, scats) • Shelters (borrows, dens, caves, rocks, shrubs, grasses, clumps) • Scent flags:- What are they, recognizing when fresh (scats, urine spray, scrapes, rakes, rubs on bark etc). • Identifying Wildlife calls, types of calls (mating, warning, alarm, distress) • Maintaining Field Notes 	2
8	Monitoring of Tiger, Co-predators, Prey and Habitat (Protocol laid out by Government of India):	<ul style="list-style-type: none"> • Sign Encounter Rate Surveys: Conducting carnivore trail walk. • Ungulate Encounter Rate Surveys: Conducting herbivore transect walk. • Documenting human disturbance and Cattle pressure • Vegetation study including crown density, shrub density, ground flora, grasses. • Ungulate pellet count. Phase – IV monitoring, M-stripe model of patrolling, Camera Trapping. • Laying of pressure impression pads (PIP) and recording measurements. 	2
9	Managing Man Animal Conflicts as per Govt. of India Guidelines:	<ul style="list-style-type: none"> • Constituting primary and secondary response teams. • Coordination with other line Departments, Media and village heads, crowd control. • Capture methods like trapping, netting, tranquilizing etc. • Construction of machan, hideouts etc. • Rescue of Various animals • Management of captured animals and rehabilitation. • Dealing with loss of livestock, human injury and death, crop and property damage due to wild animal attack. • Guidelines for payment of compensation. • Trauma Management: First-Aid, Animal Attack and other common problems in Forests - 	1
10	Promotion of Eco-Tourism, Education and Extension:	<ul style="list-style-type: none"> • Use of Eco – Tourism as a tool for wild life conservation. • Creation of simple low cost tourism facilities like trek paths, safari drive, bird watching, watch tower etc. • Govt. of India guidelines on eco – Tourism in Tiger Reserves, Protected Areas and RFs. • Dos and Don'ts for visitors. 	1
11	Environmental Acts and Laws :	<ul style="list-style-type: none"> CZA, NTCA, WCCB. • Application of Biodiversity Act for WL offences Sec.7 • Notification of ESZ and Wetlands. • Convention on Bio- Diversity (CBD). • Ramsar Convention on Wetlands 1971. Ramsar sites in India. • CITES. 	2
		Total	18

Information Technology for FSO(P) 3 months Training Syllabus

S.no	Topic	Sub Topic	No.of Sessions	
			Theory	Prac t.
1	Maps and map reading	i) Maps and map reading a) Symbology & Spatial patterns b) Scales, Accuracy c) Map indexing systems, SOI maps d) Themes in SOI maps	2	1
2	Information technology	Introduction to Information Technology in forestry a) Basic concepts of software, Hardware & Opereting System b) Application software – MS Office (MS Word, MS Excel, MS Power Point)	2	2
3	Geographical Information Systems	i) Introduction, Concepts, Definitions ii) General capabilities, data models iii) Database creation and attribute linking, Data Quality iv) GIS analysis v) Hands on exposure on Arcview/ ArcMap and its extensions/modules a) Spatial database creation and attributing; b) Map making c) GIS analysis (2+3) d) Plotting of field book (distance & bearings)	2	3
4	Global Navigational Satellite Systems	i) concepts of GNSS, Surveying, Mapping, Navigation, measurements, accuracy & errors ii) Applications and use of GNSS iii) Organization & Instrumentation – exposure to various GNSS instruments, Accuracy iv) Concept of DGPS a) Almanac, Data Dictionary, DOP b) Satellite Based Augmentation Systems v) Hands on experience including mapping a) Surveying, Mapping, Navigation using options (waypoints, routes and tracks) b) Data downloading & uploading, exporting c) DGPS data processing, exporting to GIS d) extraction of themes, attribute linking, map making e) GPS/ GNSS readings and calculations, generation of field books	2	4
5	Geomatics Applications	i) Site suitability Analysis for Water Harvesting Structures a) Guidelines, criteria for selection of sites for construction of WHS structures b) map reading and navigation to suitable sites, ground truthing c) Monitoring of WHS structures ii) Vegetation canopy density & type a) mapping and monitoring, b) ground truthing and accuracy assessment iii) Forest fire risk zonation and management a) Ground truthing of fire alerts	2	

		b) Use of Fire Risk maps in fire management and prevention of fire occurrence		
6	Other Applications	i) Hands on with GoogleEarth/ Bhuvan etc	2	2
		a) Overlay of data in GoogleEarth*		
		b) Creation of new features and exporting*		
		c) Time Series Analysis*		
		ii) Hands on with Mobile Applications*		
		iii) Packages – FMIS, eGreenWatch		
		Total	16	12

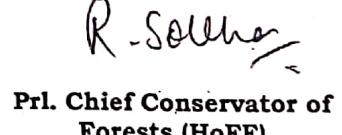
Syllabus for Forest Research for FSO(P) 3 months Training			No. of Sessions for Theory- Practical
Sl.No	Topic	Sub-Topic	
1	Composting	Compost - Aerobic, Anaerobic method of Composting	2
		Berkeley method of preparation	
		Vermi compost and its advantages	
2	Seed Technology	Characteristics of good seeds	3
		Seed Maturity test	
		Seed periodicity	
		Seed Collection planning, Storage of Seed- Seed production areas, seed orchards and plus trees.	
		Seed cleaning, seed grading.	
		Post harvest care	
		Seed germination: Problems in seed germination, germination substratum	
3	Plant Propagation	Dormancy - Treatment methods	2
		Propagation , Types	
		Propagation through seed & Vegetative propagation	
		Vegetative propagation through Rhizome, Stem cuttings, Branch cuttings, leafy cuttings.	
		Grafting & Layering	
		Layering- Ground layering, Air layering.	
		Preparation of Rooting hormone, precautions to be taken in rooting of cuttings. Factors affecting rooting of cuttings.	
4	Tree Improvement	Infrastructure for Vegetative propagation - Mist chambers, Low cost mist chambers, Polyglobules, construction of propagating units.	3
		Raising of Clonal multiplication areas and its management.	
		Tree improvement – Objectives	
		Selection of plus trees	
Total			10


**Dy. Director/
Course Director**


**Dy. Director
(Trainings)**


**Addl. PCCF/
Director (FAC)**


**Chairman,
Board of Control, TSFA**


**Pr. Chief Conservator of
Forests (HoFF)**