

# Calendar

Short Term Training Courses

2016



**FOREST RESEARCH INSTITUTE**  
(Indian Council of Forestry Research and Education) DEHRA DUN

# Short Term Training Courses at FRI, Dehradun

Set in the sylvan surroundings of Doon Valley and having a history of about a century of forestry research is an ideal seat for learning in forestry. FRI contributes the research perspectives focusing on different aspects of forestry research to different stake holders. The manifold research programmes related to enhancement of forest productivity through quality seed and planting material, Agroforestry, medicinal & aromatics plants, eco-rehabilitation, afforestation techniques for stress sites, bamboo & bio fertilizers, evaluation & utilization of plantation timber to name a few.

Training as a part of extension is an important function of the institute towards capacity building. The institute organizes Short Term Training Courses (STTC) in seventeen disciplines to keep managerial level officers, supervisory staff and field officers abreast with recent research developments in forestry and to transfer the latest technologies. In addition to this Short Term Low-Cost Training courses will also be organized as provided separately in this brochure.

The faculty to impart these trainings consist highly qualified, experienced and skilled professionals and researchers. The Institute has a well-developed infrastructure of laboratories, computer center, library, herbarium, arboreta, nurseries and experimental field areas for conducting research and training programmes. Excellent boarding & lodging facilities are available at the Scientists Hostel and Officers Rest House of the Institute, with adequate means of recreation.

## Course Contents

1. Nursery & Plantation Management and Techniques: Establishing modern seedling and clonal nurseries, nursery operations, sources of superior germplasm and their management, seed handling and vegetative propagation techniques, planting and aftercare, cultivation technology of important forest trees, protection measures against insect pests and diseases in nurseries and plantations
2. Improved Seed and Nursery Technology: Seed technology & seed certification, Nursery technology & management, Modern Nursery-potting media & containers, Role of medicinal plants in plantation forestry, Fungal disease of nursery & plantation and their management, Bamboo propagation techniques, Insect pests disease of seed, nursery, plantations & their management, Soil fertility management in plantation, Landscape cum bio-aesthetic planning, Plant propagation techniques and infrastructure for clonal propagation.
3. Tree Seed Technology: Demonstration & familiarization of seed testing Lab, Practical demonstration of seed sampling, Purity, Seed moisture & seed weight determination, Seed collection, extraction & processing, Selection of plus trees, Hybridization, Seed dormancy & germination, Seed storage, Seed treatment & testing of germination, viability tests, Seed physiology, Development of modern Nursery, Seed pathology & Seed Entomology.
4. Classification and Grading of Timber: Testing of wood and classification of timbers for different end uses; Defects in wood, their measurement and evaluation; Visual grading of timber; Machine grading of timber.
5. Finger jointing for Efficient Wood Utilization: The Finger jointing technique – uses, design aspects, adhesive aspect, machinery, structural and non-structural usages, glulams, strength aspects, role of moisture and seasoning, finishing aspects, hands-on practice.
6. Plywood Manufacture: Plywood raw materials both wood and adhesive; Manufacture of veneer, plywood, block board and Flush doors, their properties and testing; preparation and testing of adhesives; Plywood, Laminated of adhesives, plywood, Laminated Veneer Lumber (L.V.L.); Impreg and compreg and other in panel products.
7. Wood and Bamboo Preservative and its Utilization: Importance of preservation, seasoning, products, composites, finishing, working properties and appropriate utilization of wood and bamboo.
8. Vegetative Propagation technologies for genetic improvement: Conventional and tissue culture techniques for multiplication of important forest tree species, infrastructure development, maintenance of clonal nursery and propagation complex through insect/disease management, technology transfer in field.



9. Bamboo propagation and clonal nursery management: Introduction to Bamboos and their utilization in rural and urban society, Germplasm collection, Establishment and maintenance of genetic resources of bamboos, Infrastructure development for bamboo propagation, Mass multiplication of important bamboos through low cost clonal technologies, Farmers friendly technologies for bamboo multiplication, Management of bamboo clonal nursery etc.
10. Hands on training on tissue culture of forestry species, medicinal plants and bamboos: Plant Tissue Culture principles, fields of application, progress and prospects with special reference to tree crops; Advantage of tissue culture, tissue culture a non-conventional means of mass multiplication, necessity of plant tissue culture etc.
11. Extraction, Quality, Assessment and Applications of Natural Dyes and Fragrant Oils: Overview of natural dyes and fragrant oils; Introduction to dye and essential oil yielding plants; Techniques for extraction of natural dyes and their application on different fabrics; Evaluation and quality assessment of dyed fabric; Techniques for extraction of fragrant oils; Quality assessment of fragrant oils; Applications of fragrant oils; Live demonstration on extraction of natural dyes and fragrant oils.
12. Nursery Diseases and their Management: Ideal nursery practices; Soil health and its importance; Improved planting material; important nursery diseases and their identification; disease management methods including cultural, chemical and biological.
13. Cultivation, Value addition and Marketing of Medicinal Plants: National Scenario of Medicinal Plants, Seedling production and vegetative propagation of selected Important Medicinal Plants in nursery and their management, Post harvesting management and value addition and marketing field visit.
14. Importance of Soil for sustainable production: Introduction of soil: Soil fertility and management for production; Soil degradation and its reclamation; Importance of soil Organic matter for fertility enhancement; Mineralogical approach in enhancing soil quality; Introduction to soil health and Soil quality; Soil diagnosis (Introduction to soil nutrient).
15. Handmade Paper making: Introduction and history of Handmade paper; Raw materials for handmade paper, their fibre composition, anatomy, chemistry; Raw material preparation, pulping, washing, screening, beating/refining, preparation of handmade paper sheets, handmade paper conversion, machining, equipment and project cost.
16. Application of remote sensing and GIS in forest resource assessment: Remote Sensing (RS): Principles of remote sensing; Indian Remote Sensing Satellite Programs; Selection and procurement of satellite data, Digital image processing, interpretation and classification; Hardware and software issues; Recent technological trends.  
  
Geographical Information System (GIS):Introduction to GIS; Spatial and non-spatial database for GIS analysis; Spatial(Vector and Raster) and Non-spatial (Hierarchical, Network and RDBMS) data models; Coordinate systems, datum and projections; Digital elevation models and their applications; Recent technological trends in GIS.  
  
Global Positioning System (GPS):Overview and principles of GPS and other Navigation Systems: Surveying methods and field data integration with GIS.  
  
Application of RS/GIS: Forest Inventory; Land use and Land cover mapping; Soil survey and mapping; Ecosystem analysis; Biodiversity characterization and management; Watershed characterization; Change detection and monitoring; Forest fire monitoring.  
  
Hands on training on: Geo-referencing and geocoding; Sub setting and mosaicking; Digitization of boundaries of important features; Entry of spatial and non-spatial data; Land use and land cover classification; Multistage sampling for change detection; Transfer of GPS data in GIS database and Map composition.
17. Forest Ecosystem Monitoring under Climate Change Scenario: Introduction to climate and climate change; Research needs of Indian Himalayan Region (IHR); Monitoring carbon assimilation and carbon released by plant and soil system; Monitoring eco-hydrological attributes; Assessment of river behavior; Plant response to changing climatic scenarios; Insect pest management under climate change; Agro forestry weeds under climate change; Carbon, water and energy dynamics using micrometeorological approach; Cooling effects of various tree species – Concept; Remotes sensing and GIS application in climate change research; Hands on training under controlled and forest ecosystems; Hands on training to monitor eco-hydrological attributes in watershed area; Methodology with site visit; Monitoring cooling effect at experimental site in FRI.

# Calendar of Short Term Training Courses - 2016

NAME OF THE COURSE	NAME OF COURSE DIRECTOR & DIVISION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1. Nursery & Plantation Management	Dr. Dinesh Kumar, Silviculture Ph. No. 0135-2224610						13-17						
2. Improved Seed & Nursery Technology	Ms. Manisha Thapliyal Silviculture Ph. No. 0135-2224467										03-07		
3. Tree Seed Technology	Dr. Ombir Singh Silviculture Ph. No. 0135-2224469									19-23			
4. Classification & Grading of Timber	Dr. Y.M. Dubey Forest Products Ph. No. 0135-2224395											21-25	
5. Finger Jointing for Economic and Efficient Wood Utilization	Dr. Sachin Gupta. Forest Products Ph. No. 0135-2224443										17-21		
6. Plywood Manufacture	Sh. D.P. Khali Forest Products Division Ph. No. 0135-2224451										24-28		
7. Wood and Bamboo Preservative and its Utilization	Dr. Sadhna Tripathi Forest Products Division Ph. No. 0135-2224445								08-12				
8. Vegetative Propagation technologies for genetic improvement.	Dr. Meena Bakshi Botany Ph. No. 0135-2224410							18-22					
9. Bamboo propagation and clonal nursery management	Dr. Meena Bakshi Botany Ph. No. 0135-2224410						06-10						

# Forest Research Institute, Dehradun

NAME OF THE COURSE	NAME OF COURSE DIRECTOR & DIVISION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
10. Hands on training on tissue culture of forestry specie, medicinal plants and bamboos.	Dr. Ajay Thakur G&TP Ph. No. 0135-2224493												19-23
11. Extraction, Quality Assessment and Applications of Natural Dyes and Fragrant Oils	Dr. V.K. Varshney Chemistry Ph. No. 0135-2752671							11-15					
12. Nursery Diseases and their Management	Dr. Y.P.Singh & Dr. Shailendra Kumar Pathology Ph. No. 0135-2752672							11-15					
13. Cultivation, Value addition and Marketing of Medicinal Plants	Dr. A.K. Sharma NWFP Ph. No. 0135-2224499												26-30
14. Importance of Soil for sustainable production.	Dr. Parul Bhatt Forest Soil and Reclamation Ph. No. 0135-2224406												05-09
15. Handmade Paper making	Dr. S.P. Singh Cellulose and Paper Ph. No. 0135-2224391										17-21		
16. Application of remote sensing and GIS in forest resource assessment	Sh. Manoj Kumar, Forest Informatics Ph. No. 0135-2224370									05-09			
17. Forest ecosystem monitoring under Climate change scenario	Sh. Sandeep Kujur Climate Change & Forest Influence Ph. No. 0135-2224332							25-29					



# Low-Cost Training Courses For Field Staff, Farmers & Artisans

The following Low-cost short term training courses for State Government and NGOs sponsored field staff, farmers, artisans, JFM/VFP committees, SHG members, etc. shall be conducted at Shatabdi Van Vigyan Kendra, City Campus of FRI during 2016. These courses are designed as per the requirements of the sponsoring agencies.

- 1. Hands on Propagation of Medicinal Plants**  
Course Director : Dr. A.K. Sharma, Non-Wood Forest Products Division  
Ph. No. : 0135-2224499  
Dates : 11th to 13th July, 2016  
Course contents : National Scenario of Medicinal Plants, Seedling production and vegetative propagation of selected Important Medicinal Plants in nursery and their management, Practical demonstration of FRI write technique an alternative of air layering for production of tall medicinal plants, field visit.
- 2. Low-cost clonal/ propagation**  
Course Director : Dr. Meena Bakshi, Botany Division  
Ph. No : 0135-2224410  
Dates : 08th to 12th August, 2016  
Course contents : Infrastructure, development for clonal propagation of important forest tree species; Mass multiplication for production of superior planting stock of Shisham, Eucalyptus, Casuarina, Grewia, Teak, Terminalia and Medicinal plants; Maintenance of clonal material in nursery; Transportation of reproductive and planting material; Infrastructure development and maintenance of propagation complex, Technology transfer in the field.
- 3. Organic Manuring**  
Course Director : Dr. Devendra Kumar, Silviculture Division  
Ph. No. : 01352224466  
Dates : 08th to 12th August, 2016  
Course contents : Overview of application of fertilizers and organic manures, and fertilizer policy in India. Soils, types of Soils, and soil properties and their reclamation. Soil fertility, major and minor plants nutrients, soil organic matter, Role of Soil organic matter. Introduction of Fertilizers, Nitrogenous fertilizers, Phosphatic fertilizers and potassic fertilizers and their requirement and impacts of chemical based cultivation practices. Soil and environment pollution due to application of chemical fertilizers, excess use of it, the fertility of soil and health also deteriorate. Introduction of organic manures, compost, vermi-compost, sources of organic manures, Types of organic manures, preparation of organic manures, compost, vermi-compost etc. and benefits of organic manures etc. Introduction of Bio-fertilizer, Method of application of bio-fertilizers and benefits of bio-fertilizers and ecofriendly farming, Agro forestry. Organization of field tour to demonstrate:
- 4. Nursery & Plantation Management and Techniques:**  
Course Director : Dr. Dinesh Kumar, Silviculture Division  
Ph.No. : 01352224610  
Dates : 26th to 30th September, 2016  
Course contents : Establishing modern seedling and clonal nurseries, nursery operations, sources of superior germplasm and their management, seed handling and vegetative propagation techniques, planting and aftercare, cultivation technology of important forest trees, protection measures against insect pests and diseases in nurseries and plantations
- 5. Agroforestry and land management**  
Course Director : Dr. Charan Singh, Extension Division  
Ph. No. : 01352224355

- Dates : 19th to 23rd September, 2016  
 Course contents : Concept and status, Selection of tree – crop combinations, Handling of seed and plant material, Geometry of plantations, Tree-crop interaction, Agroforestry models, Marketing and extension
6. Practical Resin Tapping  
 Course Director : Dr. B.P. Tamta, Non-Wood Forest Products Division  
 Ph. No. : 0135-2224498  
 Dates : 05th to 07th October, 2016  
 Course contents : Resin production scenario in India, Resin Tapping Technologies, Hands on experience in resin tapping from Pinus roxburghii using FRI rill & borehole methods, Techniques of enhancement of resin tapping, Collection & storage of resin & Field visit.
7. Cultivation of edible mushrooms  
 Course Director : Sh. Suresh Chandra & Dr. Shailendra Kumar, Pathology Division  
 Phone No. : 01352224258  
 Dates : 26th to 28th October 2016  
 Course contents : Awareness about mushrooms; their nutritional value; selection of substrate, techniques of cultivation, precautions; value addition and marketing. Various steps of mass production of Oyster and Shitaki mushrooms for the small growers and SHGs.
8. Keera- Jari (Ophiocordiceps sinensis): Its medicinal uses and ecological concerns  
 Course Director : Dr. Amit Pandey, Pathology Division  
 Phone No. : 01352224314  
 Dates : 16th to 18th November 2016  
 Course contents : Introduction to the habitat and natural conditions of Cordyceps sinensis, its areas of collection in Uttarakhand, Isolation pure culture preparation, maintenance and preservation of cultures, taxonomic identification based on microscopic characters and DNA fingerprinting method, Chemical characterization of bioactive principles, growing Cordyceps sinensis mycelium on solid substrate Jhangora (Echinochloa frumentacea) grains in laboratory. Environmental issues and challenges with reference to biosphere reserves
9. Diagnosis of soil for production systems  
 Course Director : Dr. B.M. Dimri, FR&LR Division  
 Ph. No. : 01352224  
 Dates : 07th - 09th November, 2016  
 Course contents : Introduction of soil; Soil fertility management; Soil diagnosis; Significance of soil organic matter in productivity enhancement; Soil erosion and conservation.

### COURSE FEES

- ❑ The course fees for STTC (including boarding & lodging charges) per participant is as follows:
  - ★ Rs. 10,000 for Indian nationals, Rs. 22, 000 for SAARC countries, and
  - ★ Rs. 40,000 for other foreign nationals.
- ❑ Course fee for “Low-cost short term training courses only for farmers, artisans, etc. is Rs. 5,500 course.
- ❑ Institutional charges @20% on course fees will be charged extra for each course.
- ❑ The minimum number of participants for each course must be 10 (ten).

### NOMINATIONS

- Nomination letters for the above courses may be addressed to  
 Head, Extension Division  
 Forest Research Institute  
 P.O. New Forest, Dehradun – 248 006 (Uttarakhand)  
 Phone: 0135 – 2758606 Fax: 0135 - 2756865 E-mail: [headext@icfre.org](mailto:headext@icfre.org)
- ❑ The requisite course fees (through demand draft drawn *in favour of* the Director, Forest Research Institute, Dehradun, and payable at Dehradun) should reach on the above address at least 30 days before the commencement of the respective courses.
  - ❑ Participants are advised to commence their journey for the training only after getting confirmation about the course programme from the concerned Course Director at the telephone numbers.  
 Website : <http://fri.icfre.gov.in/> [www.icfre.org](http://www.icfre.org)





Training on Silviculture- Forestry for Eco Task Force



Training on Agroforestry and land management in Uttarakhand



Training on Agroforestry and land management in Punjab



Training under VVK and KVK Networking