# Chandrapur Forest Academy of Administration, Development and Management, Chandrapur, Maharashtra

Status, Review, Concept with respect to Proposed Academic and Training Modules and proposed Facilities

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Joint Effort- Wildlife Institute of India and Wildlife and We Protection Foundation

## Maharashtra State Academy of Wildlife Management and Forest Productivity, (MSAWMFP)

Chandrapur, Maharashtra

A State of the Art - 'Center Of Excellence' in Country

Note- as per 'Government of Mahrashtra notification

#### VISION

Establish, Develop and Emerge as one of the leading
'Centre of Excellence'
in Forestry, Environment, Natural Resource
Conservation
and
Sustainable Development in the Country

#### Mission

- Promote, Develop and Institutionalize Comprehensive and Integrated Approaches using innovation in planning and management for conservation, by keeping abreast with emerging trends.
- Assessment of Target Specific Training Needs, development of Training Content, Modulation of Capacity and Competency Based Protocols for Resource Managers in Forestry, wildlife, Environment and allied disciplines.
- Ensure Vertical and Horizontal Integration of Capacity and Competency Building initiatives in Human Resource Development and Management for synergized effectiveness and efficiency in all strata.

### Objectives

- To conduct a Target Specific Training Needs Assessment on a continuous periodic basis.
- To develop Target Specific Long Term, Moderate Term and Short Term Modular Course Pattern in selected targeted disciplines.
- To evolve and develop Learning and Training Content.
- To conduct Capacity and Competency Building Training Programs in Forestry, Wildlife, Environment and Allied Disciplines.
- To develop a Continuous Periodic Capacity and Competency Building Protocol for HRD.
- To imbibe the culture with emphasis on 'Learning and not just 'Training'.
- To develop 'State of the Art' infrastructure for Implementation of various planned initiatives.
- To establish, develop and implement 'elearning, and Management System(LMS)' and Distance Learning

## Strategy-1

- Adoption of Organizational Development Mapping Principals to track the Establishment, Development, Implementation, Management and Monitoring and Evaluation of the Organisation.
- Recourse to outsourcing and hiring expertise to deliver the best possible outputs and ensure the quality organisation.
- Design and Develop Course Modules of various demand based timeframes for main and co-lateral entrants.
- Address Capacity and Competency needs, in concerned and related disciplines, over the entire country, with emphasis on southern India.
- Developing a perspective for Linkages with and become an integral component of 'Organisational Web' over the world.
- Networking with Government of India and State Government Institutions and organizations in Forestry and allied disciplines across the country, through Collaborations and Partnerships.
- Developing a 'Centre of Excellence and State of the Art Wildlife Forensics' Facility comparable to international standards

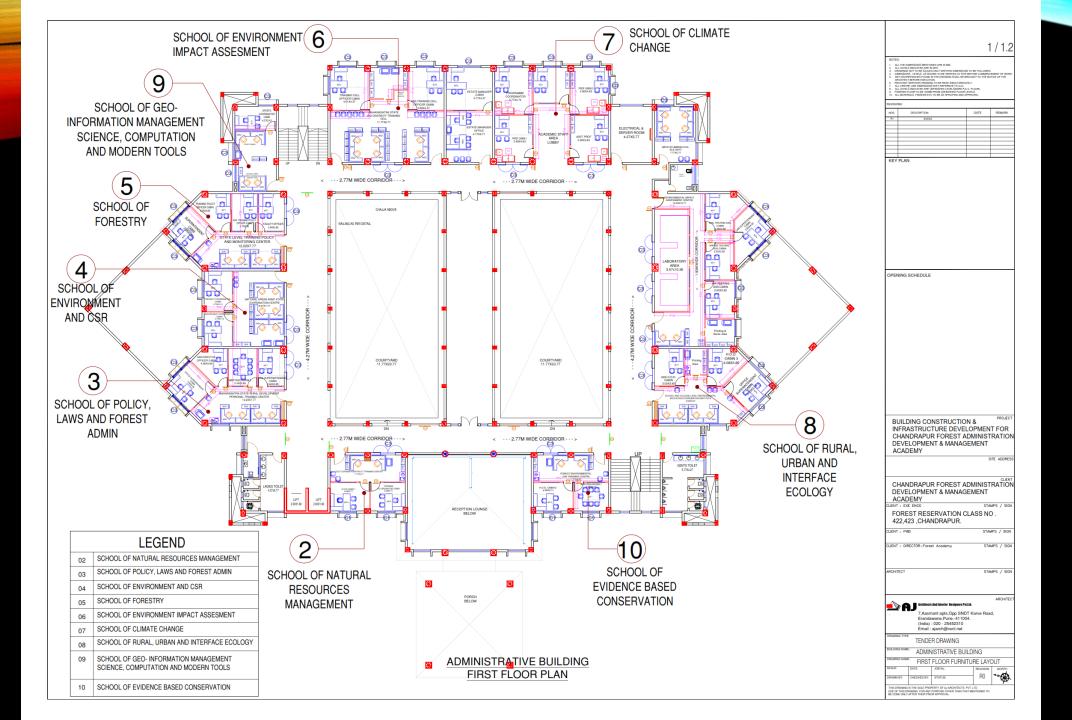
## Strategy-2

- Establishment of an Analytical Laboratory for Toxicology studies to support Investigations in Offence Cases.
- Establishment of a Museum and Demonstrative Facility for Wildlife.
- Development and Management of 'Interpretation and Conservation Education Facility' along with 'Education for Sustainable Development.
- Centre for 'Evidence Based Conservation'.
- Establishment of Wildlife Heath Centre with 'State of the Art' Veterinary Facilities.
- Establishment of a "e-learning-Learning Management System (LMS)" for Webinars, Web Classrooms, Outreach Training Activities, and in-situ Training and Demonstration Programs for Field Functionaries.
- Establishment of a Regional Centre of 'World Conservation Monitoring Centre'
- Establishment 'Research, Training and Education Hub' with a National Level Data Repository for Forestry, Wildlife, Environment and Allied Disciplines to support. Research, Training and Education endeavours of the Academy.
- Empowerment of Youth and Women in Conservation

#### Our Enablers

- State of Art Planning and Infrastructure Development
- Optimum Campus Size ensuring future expansion
- A strong commitment of the Government of Maharashtra
- A dedicated team of planners
- Envisioning Capability par excellence
- Assured sustained Funding
- Organisational Structure conducive to Partnerships and Collaborations
- PPP and PPCP
- CSR Based Approaches
- International Cooperation, Collaborations and Partnerships
- Alignment with the National Initiatives and State Initiatives.
- Alignment and Realignment Flexibility and adaptataion with United Nations Programs and Initiatives
- Competent Team of Advisers and Consultants

#### **Proposed Organisational Structure** Director Registrar Dean Extra-Curricular **Estate Officer Admin Officer Hostel Warden Finance Officer** & Hospitality Head Head Head Head Head Head Head Head School of School of Rural, **School of** School of School of School of wildlife School of **Environment** Urban & **Academic Natural** Policy, Laws School of **Environment Sciences Climate Change** Officer **Interface** and Forest **Impact** Resources **Forestry** and CSR **Ecology Admin Assessment** Management Head Head **Controller of** School of Geo-**Examinations** School of informatics, Geo-**Evidence Based** information Conservation Management



## Methodology and Tools

## Currently Proposed Initiatives Multi-Disciplinary Capacity and Competency Building Programs

## 1. School of Wildlife Sciences

#### **Short Courses**

- ☐ Field Techniques and Field Craft
- RS-GIS Applications
- Ecological StatusModeling
- Nature Photography
- ☐ Ecological Census
  Techniques
- Human-WildlifeConflict
- Modern Tools in Wildlife Conservation
- Nature Interpretation and Education
- □ PRA/RRA for Community Participation

#### Certificate Courses

- **□**Wildlife management
- □Eco restoration
- ☐ Monitoring Animal Population
- ☐ Field Techniques in Wildlife Conservation
- ☐ Human-Wildlife Conflict
- ☐Fire Management
- **□**Zoo Management
- ☐ Management of Wildlife in Rescue Centre
- ☐ Rehabilitation of people from Pas
- □Capture, Rescue, Translocation and Wildlife Handling
- **□Wildlife Health**
- ☐ Ecotourism and Interpretation
- **□**Wildlife Crime Management
- ☐ Corridor Management
- ☐ Human dimension in Conservation
- □RS-GIS
- ■Media
- ☐ Ecosystem Analysis

## Post Graduate Diploma

- **□**Wildlife Management
- **□Wildlife Health**
- ☐Ecotourism and Interpretation
- ☐Modern Tools in Wildlife Management
- ☐ Wetlands and Marine
  Protected Area Management

Msc. and Ph.D in Wildlife
Management

## **Priority Courses with Immediate Effect**

#### **Short Courses**

#### **Certificate Courses**

- ☐ Field Techniques and Field Craft☐ RS-GIS Applications
- ☐ Ecological Status

  Modeling
- Nature Photography
- ☐ Ecological Census
  Techniques
- ☐ Human-Wildlife Conflict
- Modern Tools in Wildlife Conservation
- Nature Interpretation and Education
- □ PRA/RRA for Community Participation

Wildlife and We
Protection
Eaundalian
Foundation

<b>□</b> Wildlife management
☐ Ecotourism and Interpretation
<b>□</b> Wildlife Crime Management
□Corridor Management
☐Human dimension in Conservation
☐RS-GIS Applications in Wildlife
Management
□Ecosystem Analysis
☐Wildlife Forensics and its applications
☐Remote Sensing and GIS Applications in
Willdlife Management
☐Field Techniques and Field-Craft in
Wildlife Management

Wildlife Institute of India and Wildlife and We Protection Foundation

## School of Wildlife Sciences

## Maharashtra State Wildlife Forensics Laboratory (MSWFL)

#### What is the need?

- Crime against wildlife is a multibillion-dollar global enterprise that experts say is only increasing as poaching and trafficking networks grow more sophisticated and move into dark corners of the internet.
- When The Crime Victim Is An Animal, This US Forensics Lab Is On The Case
- Tour of USFWS Laboratory
- https://www.fws.gov/lab/

## Vision

Establishment of a 'Centre of Excellence' in Wildlife Forensics Studies and Applications through establishment of a 'State of the Art' Wildlife Forensics Laboratory of national stature, comparable with international standards.

## Scope

Provide support to 'Enforcement Agencies' in Maharashtra and Southern States and supplementing similar efforts elsewhere within the country, if needed, in dealing with 'Wildlife Crimes'.

## Objectives

 To develop protocols for Identification of Species from wildlife parts reported in Wildlife Trade.

To provide support in implementation of Wildlife (Protection)
 Act by the Enforcement Agencies.

 To organize Capacity and Competency Based training courses for dealing in wildlife crimes.

## **Functions**

- 1.Undertake research work to develop protocols for identifying species from varied wildlife parts of wildlife in the trade using different disciplines of forensic science such as morphology, DNA finger printing, wildlife toxicology and chemical finger printing,
- 2. Undertake wildlife offences sent by the different enforcement agencies like police, customs, forest and other agencies and provide report to them for implementation of the Wildlide (Protection) Act 1972
- 3. Identify cause of death specially due to wildlife poisoning cases
- 4. Identifying poaching hot spots using spatial DNA profiling of key species such tiger, leopard, blackbuck, gaur, and lesser known endangered and threatened species as listed in Traffic and Cities

## Functions contd.

- 5. Maintain chain-of-custody of wildlife offences cases
- 6. Developing competency to Appear in the court to testify evidence

- 7. Organised Hands-on-Training program for officers of enforcement agencies on "Wildlife Crime Scene Management" and collection of evidences
- 8. Establish repository of reference samples for dealing with wildlife crimes.

### **Functions**

- Providing scientific support to organizations like the CITIES,
   TRAFFIC and National and State Wildlife Crime Control Boards
  - Answering the 5 Basic Questions
    - the species involved;
    - the geographic origin of a specimen;
    - the wild or captive/cultivated source of a specimen;
    - the individual origin of a specimen;
    - the age of a specimen.
- India is a Signatory to various International, Conventions, Agreements s arrangements. Wildlife Forensic Facility at the Academy is its contribution.
- Offshoot Discipline- Forensic Timber Identification

## **Established emerging Applications**

- Forensic Laboratory Bridges the Gap between Conservation Genetics and Law Enforcement
- Establishment of Functionality of Wildlife Corridors and ascertaining the perspective of HWC and its" Evidence Based Solutions'
- In compliance with eth National Wildlife Action Plan and a National and International Obligation towards Conservation
- Efficient System of Multi- Agency Communication using Forensics as Evidence Base/
- Supporting Evidence Based Conservation through DNA Marking and DNA Mapping of Wildlife Habitats.
- Assessment of 'Isolated Wild Populations' or 'Vulnerable Wild Population Syndrome'
- Developing Evidence Base for Human Wildlife and Wildlife Wildlife Conflcit

## Established emerging Applications

Describing new Species

Defining Sibling Species

Predator Prey Relationships

Molecular Ecological Studies

Evaluating Diversity of Species

#### Some additional Deliverables

 Evidence Base for Threatened and Endangered Species Conservation, Protection and Management

 Identification of Species Populations, Geographic Origin, Familiy relatedness

Developing Reference Datasets

#### CAUTION

Scientisists ascertain the need to act impartially.

 Genetic Identification Methods are validated prior to Forensics use

 Genetic Analysis is performed in Quality Assured Environment with controls on Sample Integrity, test performance, data interpretation, and eveidence presentation

#### **WAY FORWARD**

 Greater Coordination and exchange of validated population data, reference samples and protocols

 Establishment of Network of Accredited Wildlife Forensics Laboratories

 Directed research towards wider applications in wildlife conservation

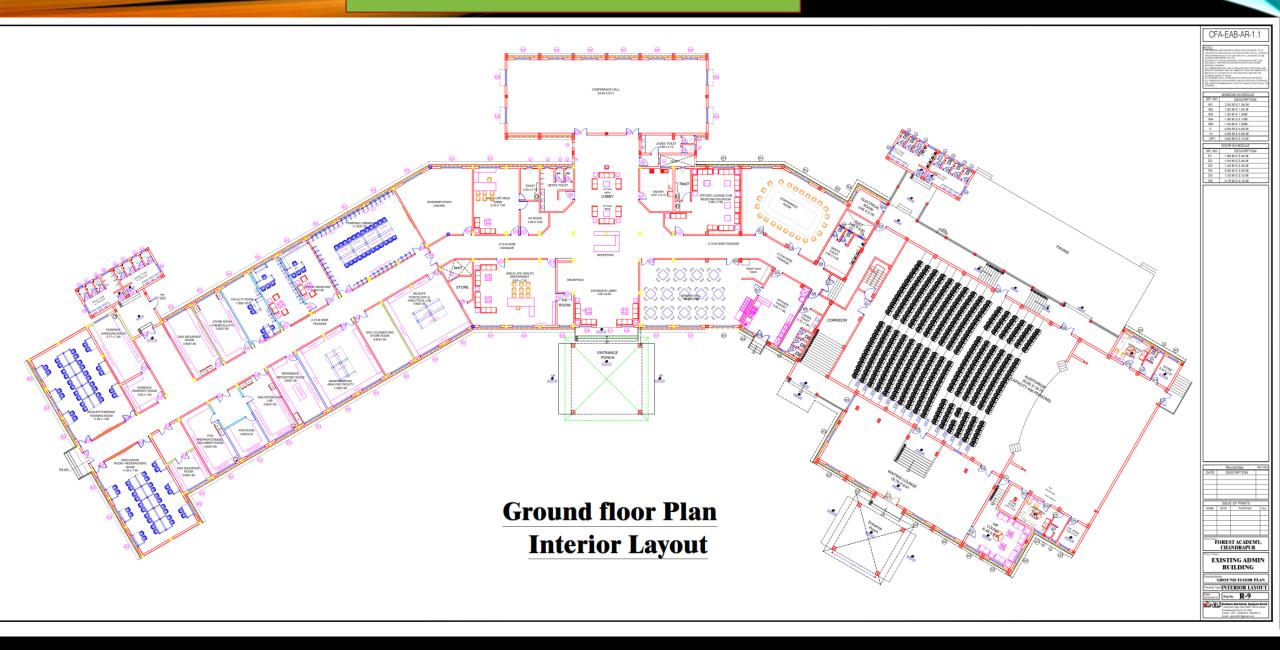
## Main Components of the forensic laboratory

- Morphometry: This is science where different items are identified based on the morphological features such as skins, bones, hair, antler, marine species, turtle shells etc.
- Wildlife DNA Forensics: Items which are not identified based on the morphometry are taken based on DNA finger printing specially like meat cases etc. Dedicated space is needed for each step of DNA finger printing and to be done in separate room.
- Wildlife toxicology: Under retaliatory killing, a number of species are killed due to poison. So there is need to identify to have wildlife toxicology facility. Main purpose is to identify different poisons and their lethal doses to determine the cause of death like tiger, leopard other species.
- Chemical Fingerprinting: Use chemical characteristics in cases where identifying species using Morphometry or DNA is not possible like items made of antler, ivory, marine species and shed and plucked peacock feather etc.

## Proposed Facilities at SGNP and Chandrapur Academy- Not a Duplication or at Cross Roads but Complimentary to each other

 Proposed DNA facility at Sanjay Gandhi National Park (SGNP) has a different mandates. The proposed facility here is planned to use DNA technology in tracking tiger/leopard individuals using faecal (scat) DNA. Working with faecal (scat) DNA also requires space which should be away from the main forensic facility so as to avoid any contamination of the samples. Hence this facility at SGNP has altogether different mandates than proposed dedicated facility at CFA, Chandrapur and aimed to maintain chain-of-custody of the evidence property..

#### **School of Wildlife Sciences**



## Maharashtra State Wildlife Forensics Laboratory 3.85X7.85 EVIDENCE PCR ROOM 3.85X4.00 PCR PREPARATIONAGEL DOCUMENT ROOM 3.85X7.85 **Ground floor Plan Interior Layout**

## Currently Proposed Initiatives Multi-Disciplinary Capacity and Competency Building Programs

## 2. School of Natural Resources Management

#### **Short Courses**

- ☐ High density plantation and conservation
- ☐ Commercial plantation and conservation
- Interpretataion and Nture EducationNature Education
- Education for Suatainable Devlopment
- Development of Sustainability Indicators
- Assessment of Ecosystem Tipping Points

#### Certificate Courses

- Ecological Solutions and Planning options for green infrastructures
- Evidence based conservations
- Landscape conservation planning
- ☐ Reclamation of mines
- Watershed Management
- NRM-Public Interphase
- ☐ RS\_GIS Applications
- ☐ Renewable energy and conservation
- Waste Management
- Industrial pollution and conservation
- Solid Waste Management

#### Post Graduate Diploma

Natural Resource Management

Water shed Management

**RS-GIS Applications** 

Industrial Pollution and

conservation

**Solid Waste Management** 

Msc. and Ph.D in Natural Resourecs Management

## Priority Courses with Immediate Effect

#### **Short Courses**

- ☐ High density plantation and conservation
- Commercial plantation and conservation
- ☐ Interpretataion and Nture EducationNature Education
- Education forSuatainable Devlopment
- Development of Sustainability Indicators
- Assessment of Ecosystem Tipping Points

Specialized Theme-Based Short Courses

- □ Water-Shade Management- GIS Application
- Watershed Management and GIS Applications
- Mine ReclamationMeasures for

Conservation

- ☐ Techniques and Practices in Solid Waste
  - Management
- Development of Sustainability Indicators
- Applications of Bioremediation in Water Pollution

## Currently Proposed Initiatives Multi-Disciplinary Capacity and Competency Building Programs

3. School of Policy, Law and Forest Administration

#### **Short Courses**

- Cross Dept integration in conservation
- Legal Issues for Retrospective Measures in Conservation Planning
- □ Networking for Strengthening Legal Framework for Conservation

#### **Certificate Courses**

- Policy Research and Political ecology
- Implementation of IFA, WPA, FCA, BA and other internation treaties
- Legislations Allied to Environmental Laws
- ☐ Infrastructural
  Strengthening of
  Environmental Legal
  Framework
- ☐ Law Implementation Fieldcraft

Post Graduate Diploma

Environmental Poliy and Law

## Priority Courses with Immediate Effect

#### **Short Courses**

Field Techniques and Field
Craft(WNW)
RS-GIS Applications(WNW)
<b>Ecological Status Modeling(WNW)</b>
Nature Photography
Ecological Census Techniques(WNW)
Human-Forest Interface
Management
<b>Emerging Trends in Forest</b>
Conservation
Nature Interpretation and
Education
<b>Development of Medicinal Plants</b>
Conservation Areas(WNW)
<b>Human Dimensions in Forest</b>
<b>Protection and Conservation</b>
<b>Practices in Forest Conservation Act</b>
 for Developmental Agencies(wnw)
Protection, Conservation and
Management of Coastal
Ecosystems(wnw)

#### Specialized Theme-Based Short Courses

Field Forest Botany and Taxonomy
Nature Photography
Human-Forest Interface
Management
Development of GreenBlets for
Protection and Conservation
Applications and Techniques in
Assessment of Ecosystem Services E
Grassland Development
Horticultural Management and
Development
Agri-Sivi Integrated Framing
System(Wadi Model)-BAIF
Sustainable Practices in NTFP
Conservation (BAIF)
Participatory Village
Development(BAIF)
Productive Livestock
Management(BAIF)
Non Conventional Sources of Energy
Surya-Mitra Model (MITCON
Plant Tissue Culture, Hi-Tech
Nurseries and Green

#### Specialized Theme-Based Short Courses

Watershed Management (BAIF)
<b>Ecological Status Modeling</b>
Nature Photography
Fodder and Grassland Development (BAIF)
Human Dimensions in Forest Protection and Conservation
Social Forestry and Agro Forestry (CFA)
Mali/Gardening Course (PKV) Akola

## Currently Proposed Initiatives Multi-Disciplinary Capacity and Competency Building Programs

## 4. School of Environment and CSR

#### **Short Courses**

- EnvironmentalOrientation ofDevelopmental Agencies
- Enviroenmental Alignment of CSR for Coprorates
- ☐ Socio-Economy Oriented Environmental CSR

#### **Certificate Courses**

- ☐ Environment oriented CSR
- ☐ Cross sectorial participation
- Bioremediation and Phytoremediation
- Sensitization for Environment Conservation
- Emerging Trends in Enviroenmental CSR

Post Graduate
Diploma

None

## Currently Proposed Initiatives Multi-Disciplinary Capacity and Competency Building Programs

#### 5. School of Forestry

#### **Short Courses Field Techniques and Field Craft RS-GIS Applications Ecological Status Modeling Nature Photography Ecological Census Techniques Human-Forest Interface** Management **Emerging Trends in Forest** Conservation **Nature Interpretation and Education Development of Medicinal Plants Conservation Areas Human Dimensions in Forest Protection and Conservation Practices in Forest Conservation Act** for Developmental Agencies **Protection, Conservation and Management of Coastal Ecosystems**

#### Certificate Courses **Vermicompost and Green Manurung Medicinal Plant farming Social Forestry Sustainable Harvest Forest Restoration Commercial Plantation Traditional Forestry Practises in Modern Era Invasive species management Net Present Value Assessment Forest Economics Ecosystem Assessment and** evaluation **Protection, Conservation and Management of Coastal Ecosystems Agri-Silvi-Culture**

#### **Post Graduate** Diploma **Forestry Wood Science Technology Paper and Pulp Technology Bamboo Conservation, Development and** Management as an Industrial Resource **Plantation Technology Nursery techniques** Forest production **Monitoring and Evaluation of**

**Forestry practices** 

B.Sc., M.sc. and Ph.D in Forestry

## 6. School of Environment Impact Assessment

# Short Courses Field Techniques in EIA RS-GIS Applications in EIA Ecological Status Modeling for EIA Emerging Trends in EIA Wildlife Mitigation Plans and FCA Clearance vis-a vis EIA Methods and Practices in EIA

### **Certificate Courses**

- Principals and Practices on Environment Impact Assessment
- Assessment of Environmental Pollution and management

#### Post Graduate Diploma

- ☐ Impact Assessment and Mitigation Measures of Development
- Conservation OrientedDevelopment for DevelopmentalAGENCIES

## Priority Courses with Immediate Effect

#### **Short Courses**

Field	<b>Techniq</b>	ues in	<b>EIA</b>

- ☐ RS-GIS Applications in EIA
- ☐ Ecological Status Modeling for EIA
- Emerging Trends in EIA
- □ Wildlife Mitigation Plans and FCA Clearance vis-a vis EIA
- Methods and Practices in EIA

## 7. School of Climate Change

### **Short Courses**

- ☐ Field Techniques and Field Craft
- ☐ RS-GIS Applications
- ☐ Theory and Practices in Climate Change Adaptations
- ☐ Emerging Trends in ClimateChange Mitigations
- Managing Forests and Wildlife for Climate Change Adaptataion

## **Certificate Courses**

- ☐ Principals and PracticesClimate Change
- Climate ChangeAdaptation
- Assessment of Carbon Sequestration

## Post Graduate Diploma

☐ Diploma Course In Climate Change Adaptations

## Priority Courses with Immediate Effect

## **Short Courses**

- Field Techniques and FieldCraft
- □ RS-GIS Applications
- ☐ Theory and Practices in Climate Change Adaptations
- ☐ Emerging Trends in Climate Change Mitigations
- Managing Forests and Wildlife for Climate Change Adaptataion

# 8. School of Rural, Urban and Interface Management

#### **Short Courses**

- ☐ Field Techniques and Field Craft
- RS-GIS Applications
- ☐ Theory and Practices in Climate Change Adaptations
- ☐ Emerging Trends in Climate Change Mitigations
- Managing Forests for Climate Change Mitigation

#### **Certificate Courses**

- Principals and PracticesClimate Change
- ☐ Climate Change Adaptation
- Assessment of Carbon Sequestration

#### Post Graduate Diploma

☐ Diploma Course In Rural-Urban Interface Management

## **Currently Proposed Initiatives**

Multi-Disciplinary Capacity and Competency Building Programs 9. School of Geoinformatics

9. School of Geoinformatics and Geoinformation Management( Computation, RS & GIS

#### **Short Courses**

- ☐ Field Techniques and Field Craft in Geoinformatics
- RS-GIS Applications
- ☐ Theory and Practices in Ecological Status Models
- ☐ Emerging Trends in Modern
  Tools and Technologies in
  Forestry and WL
- ☐ Goeinformation Management
- Map Visualization

#### **Certificate Courses**

- Principals and Practices
   Remote Sensing and
   Geographical Information
   System
- GeoinformationManagement
- Ecosystem Analysis using RS and GIS
- Applications of RS and GIS in Forestry and Wildlife Management

#### Post Graduate Diploma

Geoinformatics

**Geoinformation Management** 

## 10. School of Evidence Based Conservation

**Short Courses** 

None

Certificate Courses

- Principals and PracticesEvidence BasedConservation
- ☐ Conducting Synthesis of Review
- Developing Policy Briefs
- □ Applications of Evidence Based Conservation in Forestry ,Wildlife Management & Natural Resources Management

Post Graduate Diploma

None

## Proposed New Facility for the Academy

Wildlife Health

Conservation Education and Interpretation

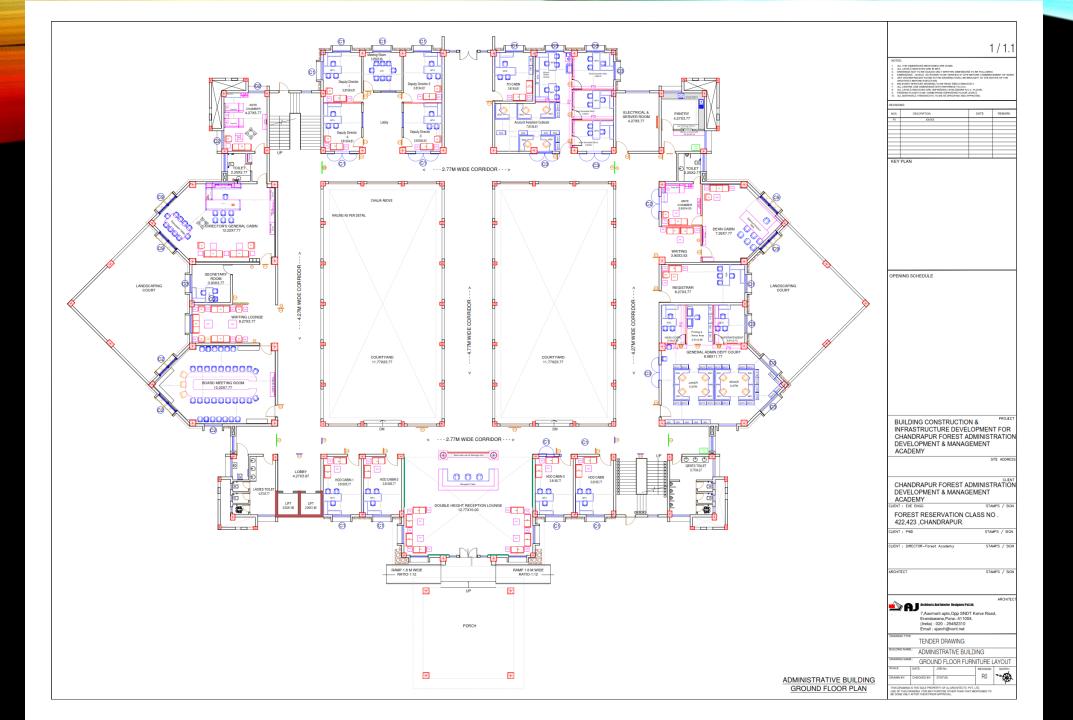
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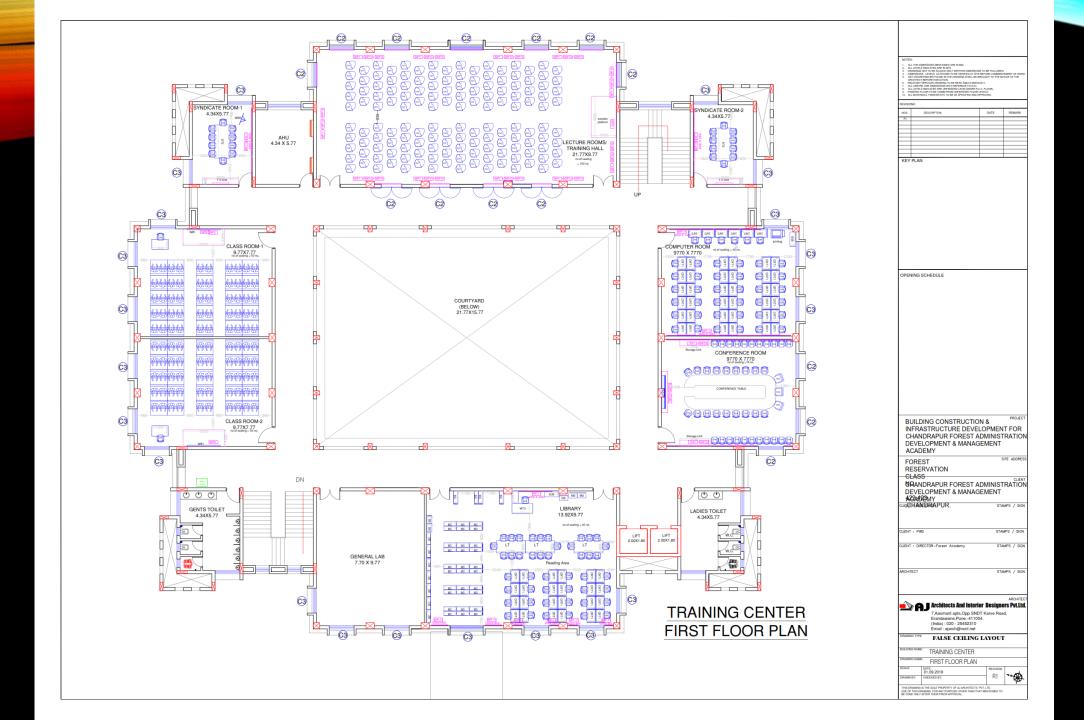
Coverage under the 'Evidence Act' 1872

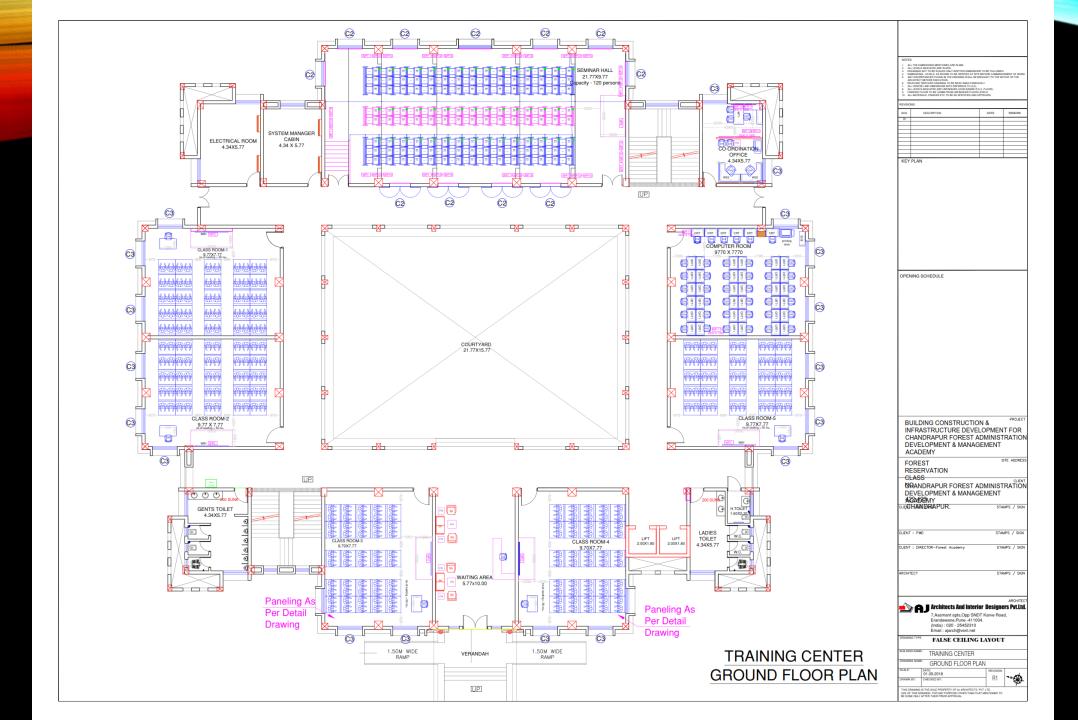
 Notification of the Government of India from the Ministry of Law and Justice under the Cr.P.C. for the Laboratory

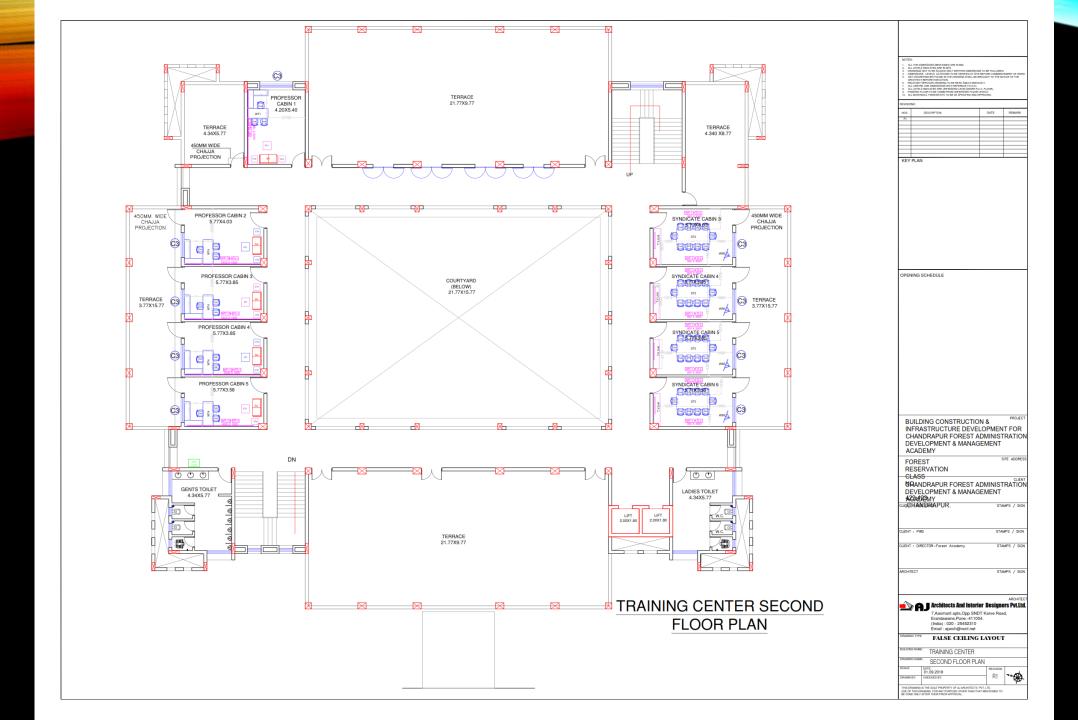
## Mandatory Permanent Staffing

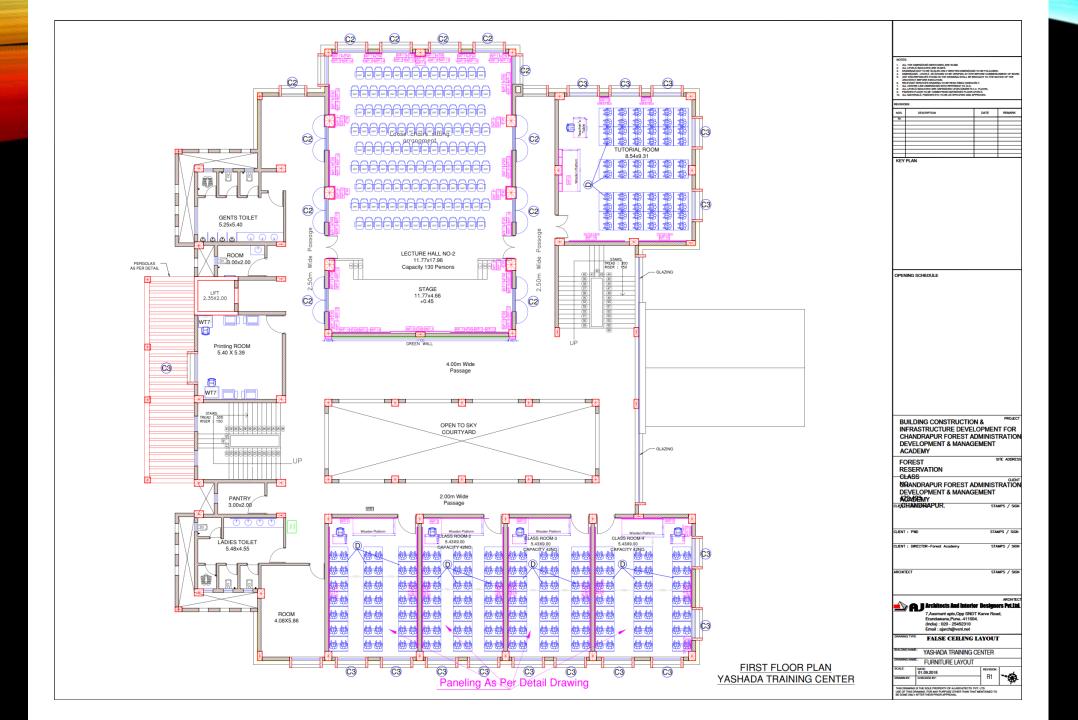
- Deputy Directors (MSc /Ph.D in relevant discipline.(3)
- Office Assistant/ Manager(2)
- Contractual Research Associates, Senior and Junior Research Fellows.(6)
- Office Attendants (2)

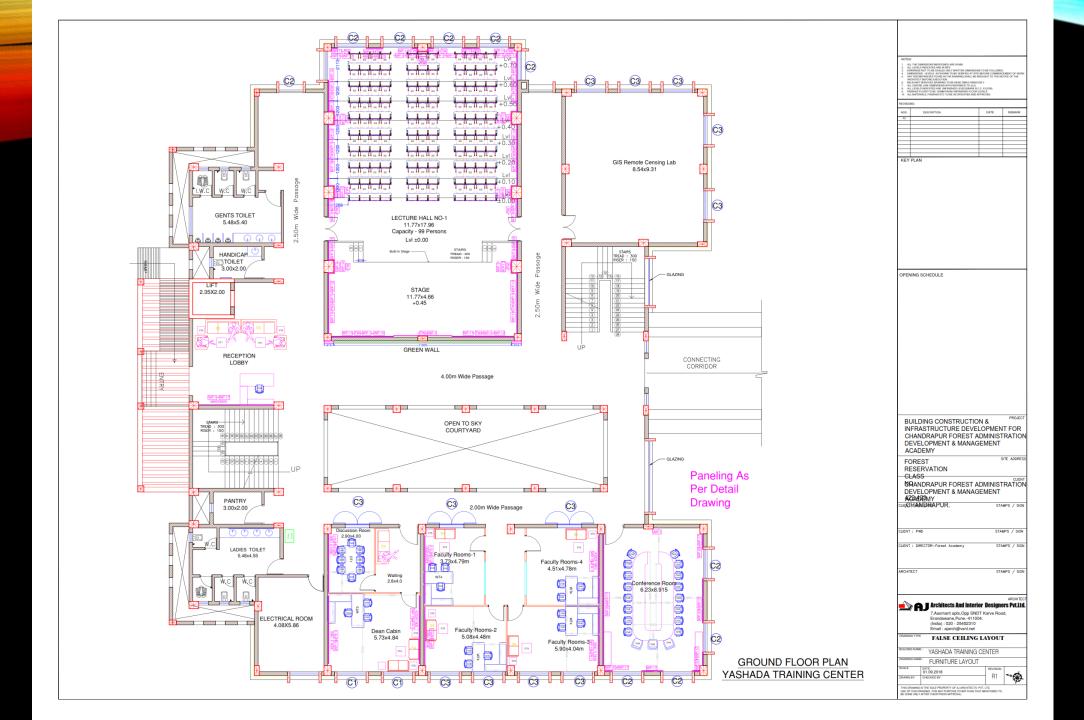


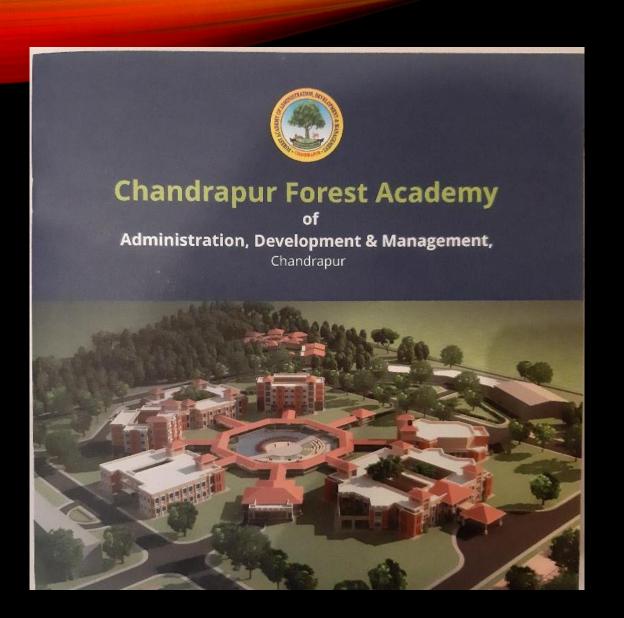












## **THANK YOU**