



### List of Revised Courses

**Department : Department of Forestry, Wildlife and Environmental Sciences**

**Program Name : PhD (Forestry and Environmental Sciences)**

**Academic Year : 2018-19**

### **List of Revised Courses**

Sr. No.	Course Code	Name of the Course
01.	Paper-I	Research Methodology
02.	Paper-II	Forest Ecosystem Management
03.	Paper-III	Forest Measurements and Tree Improvement



## Minutes of Meetings (MoM) of Board of Studies (BoS)

**Academic Year : 2018-19**

**School : School of Natural Resources**

**Department : Department of Forestry, Wildlife and Environmental Sciences**

**Date and Time : April 29, 2019 - 11:00 AM**

**Venue : E-Class Room**

The scheduled meeting of member of Board of Studies (BoS) of Department of Forestry, Wildlife and Environmental Sciences, School of Studies of Natural Resources, Guru Ghasidas Vishwavidyalaya, Bilaspur was held to design and discuss the PhD(Forestry and Environmental Sciences) Programme and syllabi.

The following members were present in the meeting:

1. Prof. S. S. Singh (Member BoS, Dept. of Forestry, Wildlife and Environmental Sciences)
2. Dr. S. C. Tiwari (HOD and Chairperson, Associate Prof., Dept. of Forestry, Wildlife and Environmental Sciences -cum Chairman, BOS)
4. Dr K. K. Chandra (Member BoS, Associate Professor, Dept. of Forestry, Wildlife and Environmental Sciences)
5. Dr. Gunjan Patil (Member BoS, Assistant Professor, Dept. of Forestry, Wildlife and Environmental Sciences)

Following points were discussed during the meeting

1. The syllabus of PhD in Forestry and Environmental Sciences course work was framed as per the ordinance 2018. The draft syllabus was sent to external expert through email for his comments. The comments received from external expert were incorporated in the revised syllabus.
2. The committee after in cooperating the comments of members has approve the syllabus of PhD in Forestry and Environmental Sciences course work for implementation with effect from academic session 2018-2019.



The committee discussed and approved the scheme and syllabi. The following courses were revised in the of PhD (Forestry and Environmental Sciences) degree programme:

Paper-I	Research Methodology
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The following new courses were introduced in the of PhD (Forestry and Environmental Sciences) degree programme:

Paper-II	Forest Ecosystem Management
Paper-III	Forest Measurements and Tree Improvement

**विभागाध्यक्ष**  
**Head**

वानिकी, वन्यजीव एवं पर्यावरण विभाग  
Department of Forestry, Wildlife and Environmental Science  
गुरु घासीदास विश्वविद्यालय, बिलासपुर (छ.ग.)  
Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

Signature & Seal of HoD



## Scheme and Syllabus

DEPARTMENT OF FORESTRY, WILDLIFE AND ENVIRONMENTAL SCIENCES  
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)

Course Structure of Ph.D. Program in Forestry and Environmental Sciences

Paper	Title of the Paper	Marks	Credit	Hours/Week
Paper I	Research Methodology	100	04	04
Paper II	Forest Ecosystem Management	100	04	04
Paper III	Forest Measurements and Tree Improvement	100	04	04
Total		300	12	12

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Paper - II Forest Eco-system management

Unit-I

- Indian and world Forestry systems, evolution of forest and bio-diversity assessment and conservation techniques.
- Criteria and indicators of sustainable forest management, community forest management.
- Conservation forestry- National Parks, biosphere reserves, centuries, arboretum, arboretum management, animal census, wildlife crime mitigation measures, forensic probes in wildlife litigation cases, human animal conflicts mitigation measures.

Unit-II

- Wood formation in trees, composite and improved wood, certification of wood.
- Natural resources economics and policy, value addition and marketing of important commercial non-wood forest products (Lemon grass, Khas grass, tendu

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leaf, Lac and medicinal plants (*Celastrus peniculata*, *Santalum album*,  
*Pterocorpu santalinus*)

#### Unit-III

- Forest services, environment and climate change, national action plan on climate change, green India mission, international negotiation and treaties on climate change, ISFR reports, carbon stocks in India's forest and soil, goals of sustainable development, soil, plant and liter analysis.
- Forest soils and tree growth, sustainable management of soil resources.

#### Unit-IV

- Forest protection- disease and pest in forest trees, forest fire, integrated pest management, bio-control methods.

#### Paper - III Forest Measurements and Tree Improvement

##### Unit- I

- Forest genetics and tree breeding, selection and breeding for tree improvement, forest genetic resources of Chhattisgarh.
- Seed viability and its testing, cryopreservation, transgenic trees, molecular markers.

##### Unit- II

- Carbon fixation, water absorption and transport, ascent of sap, nitrogen fixation, water stress and mineral stress physiology.

##### Unit-III

- Measurements of diameter, height, canopy, volume, biomass, mapping of vegetation, land use and land cover, and water bodies through RS & GIS, carbon stock assessment in soil and vegetation.

##### Unit- IV

- Ectomycorrhizal and mycorrhizal technology, Nursery practices of Shisham, Eucalyptus, *Termanilia*, Bamboo, Lemon grass, Khas grass and medicinal plants (van tulsi, Alo-vera, Safed musli).

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