



### List of New Course (s) Introduced

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

**Program Name : B. Sc. (Forestry)**

**Academic Year : 2018-19**

#### **List of New Course(s) Introduced :**

The following new courses were introduced in the of B. Sc. (Forestry) Four year degree programme:

B. Sc. (Forestry)	Bio Statistics and Computer Application
B. Sc. (Forestry)	Forest Institutes and Industrial Visit/training
B. Sc. (Forestry)	Forestry Operations (Working Experience)
B. Sc. (Forestry)	Socio-economic survey - village attachment
B. Sc. (Forestry)	Student Project

### 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 : June 18, 2015 - 11:00 AM**

**Venue : Departmental meeting Hall**

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 B. Sc. (Forestry) 4 Year Degree Program scheme and syllabi.

The following members were present in the meeting:

1. Prof. N. P. Todaria (External Expert Member BoS, Dept. of Forestry, H. N. B. Garhwal, Central University, UK)



2. Prof. S. S. Singh (Member BoS, Dept. of Forestry, Wildlife and Environmental Sciences)
3. Dr S. S. Dhuria (Member BoS, Associate Professor, Dept. of Forestry, Wildlife and Environmental Sciences)
4. Dr. Garima Tiwari (Member BoS, Assistant Professor, Dept. of Forestry, Wildlife and Environmental Sciences)

Following points were discussed during the meeting

- Prof. N.P. Todaria External Examinees sent revised syllabus as per guidelines of CBCS on 18/06/2015 as an expert
- B.Sc. Forestry 4 years 8 semester and M.Sc. Forestry and Environmental sciences 2 Years four semester syllabus has been discussed restructured and finalized as per the need of choice based credit system.
- The entire syllabus of both programmes were revised and made as per the choice based credit system.
- B.Sc, Forestry programme will have a total of 184 credit point and M.Sc. Forestry Programme will have 98 credit points in total.
- B.Sc. Forestry Syllabus will have 40 papers up to VII Semester and VIII Semester will have following training program :
  - Forest Institutes and Industrial Visits.
  - Forestry Operations (Working Experience)
  - Socio-Economic Survey – Village Attachment
- The students will prepare the report based on the above trainings and evaluation will be done by one external examiner and two internal examiners.
- There will be one student project in B.Sc. Forestry program which will be allotted in III Semester and will be evaluated by a panel of two teachers of the department at the end of IV Semester.
- M.Sc. Forestry and Environmental Sciences syllabus will have 18 papers up to III Semester and IV Semester have following:
  - Field Training (Attachment with State Forest Department)
  - Industrial Training
  - Computational Skills
  - Student Project
- The students will prepare the report based on the above trainings and evaluation will be done by one external examiner and two internal examiners.
- Student project will be evaluated by a panel of two teachers of the department.
- There will be two specializations i.e.,
  - Forest Genetic Resources (FGR)



○ Forest Management (FM)

- Above subjects will be offered to the student as per their choice in the III Semester of the M.Sc. program.
- Minimum passing marks for each theory papers, practical, student project and trainings will be 40%.
- Computation of SGPA and CGPA will be done as per the UGC guidelines.
- Credit details, marks distribution and course content have been mentioned in the syllabus of B.Sc. Forestry and M.Sc. Forestry and Environmental Sciences program.
- The study tour to forest operation sites, forest nursery, wildlife habitat and plantation sites will be conducted as per the requirement in each semester.

The following new courses were introduced in the of B. Sc. (Forestry) Four year degree programme:

B. Sc. (Forestry)	Bio Statistics and Computer Application
B. Sc. (Forestry)	Forest Institutes and Industrial Visit/training
B. Sc. (Forestry)	Forestry Operations (Working Experience)
B. Sc. (Forestry)	Socio-economic survey - village attachment
B. Sc. (Forestry)	Student Project

**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

### COURSE SYLLABUS FOR

### B.Sc. FORESTRY

(w. e. f. 2015-16)



"SCHOOL OF NATURAL RESOURCES"

DEPARTMENT OF FORESTRY, WILDLIFE

& ENVIRONMENTAL SCIENCES

GURU GHASIDAS VISHWAVIDYALAYA

BILASPUR-495009, CHHATTISGARH

(A Central University established by the Central University Act.2009 No. 25 of 2009)

1 Singh 29-6/15  
Sachin 29/6/15  
Kumar 29/6/15



B.Sc. VII <sup>th</sup> Semester					
S.No.	Title of Paper	Lecture	Tutorial	Practical	Credits
01.	Bio Statistics and Computer Application	3	1	1	5
02.	Forest Engineering & Surveying	3	--	1	4
03.	Wood Products & Utilization	3	--	1	4
04.	World Forestry Systems	2	1	1	4
05.	Entrepreneurship Development and communication skills	2	1	--	3
<b>Total Credits</b>					<b>20</b>

B.Sc. VIII <sup>th</sup> Semester		
S.No.	Title of Paper	Credits
01.	Forest Institutes and Industrial Visit/training Project report writing, Presentation & Viva-voce	8
02.	Forestry Operations (Working Experience) Project report writing, Presentation & Viva-voce	9
03.	Socio-economic survey - village attachment	8
<b>Total Credits</b>		<b>25</b>

Grand Total of Credits = 184

- The student project will be allotted in III semester and will be evaluated at the end of IV semester. Students may choose any project related to their curriculum. There will be no supervisor for this project.
- Visits to forest operation sites, forest nursery, wildlife habitat and plantation sites will be conducted as per the requirement of curriculum.

*Handwritten signatures and dates:*  
 Singh 29.5.15  
 Jash 29/6/15  
 S.H. 29/6/15  
 Kaur 29/6/15



SEMESTER - VII

PAPER I. BIostatistics AND COMPUTER APPLICATION

Cr.5 (3+1+1)

Definition and application of statistics, types and source of data, classification and tabulation of data, frequency distribution, graphical representation of data, (Bar diagram, pie chart, histogram, frequency polygon) measures of central tendency ( mean, median, mode) measures of Dispersion ( range, standard deviation, Mean deviation, Quartile deviation, variance, coefficient of variation), Probability, Test of signification: basic concepts,( Z- Test,  $X^2$ -Test, t-Test, F-test,). regression. Correlation : (scatter diagram, correlation co-efficient, its properties).Computer application: Introduction to computers and personal computers, basic concepts, operating system, MS Office, Excel, Power Point, introduction to Multi-Media, application of Statistical software's in Forestry.

36

Blingl  
29.6.15

Sh  
29/6/15  
Lodhwar

SEMESTER - VIII

❖ FOREST INSTITUTES AND INDUSTRIAL VISIT/ TRAINING. CR.8 (8)

Works to be undertaken:

- > Study the nature of industrial and business organization- structure
- > Raw material- Collection and processing of raw material.
- > Production and management process.
- > Marketing and financial management.

❖ FORESTRY OPERATIONS (WORKING EXPERIENCE) CR.9 (9)

Visit to modern forest nurseries, Herbal garden and watersheds. Study the felling and logging operations, timer lots and important industrial products. Study working plan, Enumeration, volume and yield calculation and component history file. Study the CAT(Catchment area treatment plan) and FDA(Forest development agencies). Use of Forestry equipments/instruments. Study the regeneration and management of important Forestry tree species. Sample plots, layout studies, stump analysis, preparation of local volume table.

❖ SOCIO-ECONOMIC SURVEY- VILLAGE ATTACHMENT. CR.8 (8)

Data collection with respect to village profile in respect of socio-economic and cultural status, farm technology used etc. Bench mark survey of plant resources ( cropping pattern, yield system etc). Schedule development, tabulation, analysis and preparing plan of work. Understanding local Forestry and other village level institutions ( Panchayat, village forest community, corporations, youth/women groups etc.). People's participations in development programmes with special reference to Forestry. Exercise on the use of extension methods and teaching aids for transfer of technology.

❖ STUDENT PROJECT CR.1 (1)

Blingl  
29.6.15

40

Sh  
29/6/15  
Lodhwar



### List of New Course (s) Introduced

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

**Program Name : B. Sc. (Forestry)**

**Academic Year : 2018-19**

#### **List of New Course(s) Introduced :**

The following new courses were introduced in the of B. Sc. (Forestry) Four year degree programme:

NR/FR/CC/01/L	English Communication
NR/FR/EC/01/01/P	ECA Extracurricular activity, Field visit/ NSS/ Swachhta/ Physical Education/ Plantation Activities
NR/FR/EC/02/02/P	ECA Extracurricular activity, Field visit/ NSS/ Swachhta/ Physical Education/ Plantation Activities
Summer internship	Swayam Swachhta/NSS/Industrial visit/UBA/ Others



## 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 : July 26, 2018 - 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 B. Sc (Forestry) Four Years Degree Programme and syllabi.

The following members were present in the meeting:

1. Prof. Lalji Singh (External Expert Member BoS, Dept. of Agroforestry, IGKV, Raipur)
2. Prof. S. S. Singh (Member BoS, Dept. of Forestry, Wildlife and Environmental Sciences)
3. Dr. S. C. Tiwari (HOD, Associate Prof., Dept. of Forestry, Wildlife and Environmental Sciences -cum Chairman, BOS)
4. Dr S. S. Dhuria (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 B. Sc. Forestry (4 years/ 8 Semesters) framed as per the guidelines of CBCS pattern recommended by UGC has been discussed thoroughly and was passed by the committee for the implementation from academic session 2018-19.
2. The course curriculum of M. Sc Forestry and Environmental Sciences was discussed and it was resolved that this course is well framed and contemporary with the course curriculum of other forestry institution in the country. Since it is at Forestry, Wildlife and Environmental Sciences at par with the needs of the current scenario so presently needs no revision.
3. The committee also resolved that the syllabus of M. Sc. Forestry and Environmental Sciences will be the syllabus for VRET examination of PhD programme in forestry.





The following new courses were introduced in the of B. Sc. (Forestry) Four year degree programme:

NR/FR/CC/01/L	English Communication
NR/FR/EC/01/01/P	ECA Extracurricular activity, Field visit/ NSS/ Swachhta/ Physical Education/ Plantation Activities
NR/FR/EC/02/02/P	ECA Extracurricular activity, Field visit/ NSS/ Swachhta/ Physical Education/ Plantation Activities
Summer internship	Swayam Swachhta/NSS/Industrial visit/UBA/ Others

**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**

**B.Sc. Forestry (4 -Year / 8- Semester) CBCS Programme**

Semester	Course Opted	Course Code	Name of the course	Credit	Hour / week
I	Core-01	NR/FR/CR/01/01/L	Principles and Practices of Silviculture	4	4
	Core-01 Practical	NR/FR/CR/01/01/P		2	4
	Core-02	NR/FR/CR/01/02/L	Fundamentals of Soil Science	4	4
	Core-02 Practical	NR/FR/CR/01/02/P		2	4
	Core-03 G.E.O. Ability Enhancement Compulsory (CC-01)	NR/FR/CC/01/L	English Communication	4	4
	Extracurricular Activity (EC-01)	NR/FR/EC/01/01/P	ECA-Extracurricular activity Field visit/ NSS/ Swachhta/ Physical Education/ Plantation Activities	2	2
	<b>TOTAL</b>				<b>24</b>
II	Core-04 G.E.O. Practical	NR/FR/CR/02/04/L NR/FR/CR/02/04/P	Introductory Botany	4 2	4 4
	Core-05	NR/FR/CR/02/05/L	Forest Ecology and Biodiversity Conservation	4	4
	Core-05 Practical	NR/FR/CR/02/05/P		2	4
	Core-06	NR/FR/CR/02/06/L	Fundamentals of Wildlife	4	4
	Core-06 Practical	NR/FR/CR/02/06/P		2	4
	Ability Enhancement Compulsory (CC-02)	NR/FR/CC/02/L	Environmental Studies	4	4
	Extracurricular Activity (EC-02)	NR/FR/EC/02/P	ECA-Extracurricular activity/ Field visit/ NSS/ Swachhta/ vocational Training/ Sports/ Plantation activities	2	4
	<b>SUMMER (NC) Internship: 15 days</b>				<b>2</b>
<b>Total</b>				<b>26</b>	<b>132</b>
III	Core-07	NR/FR/CR/03/07/L	Forest Mensuration	4	4
	Core-07 Practical	NR/FR/CR/03/07/P		2	4
	Core-08	NR/FR/CR/03/08/L	Cytogenetics and Plant Breeding	4	4
	Core-08	NR/FR/CR/03/08/P		2	4

Department of Forestry, W-10, Gandhinagar, Bilaspur (C.G.)  
 G-70, Gaudinagar, Bilaspur (C.G.)  
 Bilaspur (C.G.)

*Olivan*  
24/07/18

*Wahid*  
26/07/18

*Singh*  
24/07/18



2. Language and thought: Higher Algebra, Book place, New Delhi.

### ENGLISH COMMUNICATION

CR: 4

Introduction: Theory of Communication, Types and modes of Communication. Language of Communication: Verbal and Non-verbal (Spoken and Written) Personal, Social and Business, Barriers and Strategies, Intra-personal, Inter-personal and Group communication, Speaking Skills: Monologue, Dialogue, Group Discussion, Effective Communication/ Mis- Communication, Interview, Public Speech. Reading and Understanding: Close Reading, Comprehension, Summary Paraphrasing, Analysis and Interpretation, Translation (from Indian language to English and vice-versa), Literary/Knowledge Texts. Writing Skills: Documenting, Report Writing, Making notes, Letter writing

#### Suggested Readings:

1. Fluency in English - Part II, Oxford University Press, 2006.
2. Business English, Pearson, 2008.
3. Language, Literature and Creativity, Orient Blackswan, 2013.
4. Language through Literature (forthcoming) ed. Dr. Gauri Mishra, Dr. Ranjana Kaul, Dr Brati Biswas

अतिवाम  
26/07/18  
SSingh  
26/7/18  
26/07/18



### List of New Course (s) Introduced

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

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

**Academic Year : 2018-19**

#### **List of New Course(s) Introduced**

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



## 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 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

### COURSE SYLLABUS FOR

### B.Sc. FORESTRY

(w. e. f. 2015-16)



### "SCHOOL OF NATURAL RESOURCES"

DEPARTMENT OF FORESTRY, WILDLIFE

& ENVIRONMENTAL SCIENCES

GURU GHASIDAS VISHWAVIDYALAYA

BILASPUR-495009, CHHATTISGARH

(A Central University established by the Central University Act.2009 No. 25 of 2009)

1 Singh 29-6/15  
Sachin 29/6/15  
Kumar 29/6/15  
Sachin 29/6/15



## Syllabus

### Ph.D. Course Work of Forestry and Environmental Sciences

#### Paper I Research methodology

##### Unit-I

- Data entry and computation, statistical analysis (LSD, Correlation, regression, ANOVA), Statistical software (SPSS), RS & GIS softwares (ERDAS, ArcGIS, QGIS, 21<sup>st</sup> Century).

##### Unit-II

- Types of survey, inventory making, sampling designs.
- Instrumentation- Working principles and functions of surveying and analytical instruments used in forestry and environmental sciences research, (CHNS, Spectrophotometer, Nitrogen Analyzer, Air pollution monitoring systems, Whether monitoring station) working plan and resources survey.

##### Unit- III

- Identification of research problems, preparation of synopsis, review of literature, research paper writing, study of scientific databases, citation index.
- Experimental designs, methods of data collection, tabulation, data analysis and interpretation.

##### Unit-IV

- Environmental impact assessment, Air pollution tolerance index assessment, Meteorological data collection, Wildlife census, tranquilizer drugs, radio collaring, forensic test of parts of wildlife.

#### 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, sanctuaries, 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

2  
29/4/19  
29/04/19  
29/04/19





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 tulsī, Alo-vera, Safed musli).

29/4/19 3  
29.4.19

29/04/19

29/04/19