List of Revised Courses

Department : Forestry, Wildlife and Environmental Sciences

Programme Name : B Sc (Forestry)

Academic Year : 2024-25

List of Revised Courses

Sr. No.	Course Code	Name of the Course
01.	UFOAMJT1/UFOAMJP1	Silviculture
02.	UFOCMJT1/ UFOCMJP1	Forest Mensuration
03.	UFOEMJT3/UFOEMJP3	Forest Resource Economics & Management

Implementation of NEP/LOCF/CBCS / ECS

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

Academic Year : 2024-25

School : Natural Resources

Department : Forestry, Wildlife and Environmental Sciences

Date and Time : July 19, 2025 11:00 am

Venue : HOD room

The scheduled meeting of member of Board of Studies (BoS) of Department Forestry, Wildlife and Environmental Sciences, School of Studies of Natural Resources, Guru Ghasidas Vishwavidyalaya, Bilaspur was held on dated 19.06.2025 at 11:00 am in HOD room to design and discuss the and design the syllabus of B. Sc. (Forestry) 4 Years (8 semester) scheme as per NEP 2020 guidelines, M.Sc. Forestry and Environmental Sciences curriculum and credit framework/ syllabus as per CBCS guidelines. External Expert has joined the meeting through online mode.

The following members were present in the meeting:

1. Prof. Sanjeev Kumar, External Expert Member, Dean, College of Forestry, Banda University Agricultural and Techology, Banda (UP)
2. Shri Pankaj Sharma, External expert, DGM, Environment Management, NTPC, Sipat, Bilaspur
3. Prof. Dr. S.C. Tiwari, Dean, HoD, Chairperson, BoS, Dept. Forestry, Wildlife and Environmental Sciences
4. Prof. S. S. Dhuria, Member of BOS, Dept. Forestry, Wildlife and Environmental Sciences,
5. Prof. K. K. Chandra, Member of BOS, Dept. Forestry, Wildlife and Environmental Sciences,
6. Dr. Ajay Kumar Singh, Member, BoS, Assistant Professor, Dept. Forestry, Wildlife and Environmental Sciences

Following points were discussed during the meeting

1. Revised ordinance of B. Sc. (Forestry) Four Years (8 Semester) degree program.
2. The BoS has approved the NEP2020 Course curriculum and ordinance of B. Sc. (Forestry) Four Years (8 Semester) degree program with effect from academic session 2024-25.
3. The BoS has approved the NEP2020 Course curriculum and CBCS ordinance of M. Sc. (Forestry) Two Years (4 Semester) degree program with effect from academic session 2025-26.

Following points were discussed during the meeting:

1. New curriculum and credit framework- NEP 2020 for B.Sc. Forestry Four Years (8 Semester) degree program was prepared. The details of course and credits are as follows:

Semester	Course	Course Code	Name of the course	Credit	Hour / week	Marks
I	Major-01	UFOAMJT1	Silviculture	3	3	100
	Major-01 Practical	UFOAMJP1	Silviculture	1	2	100
	Minor-01		Drawn From the University pool	3	3	100
	Minor-01 Practical			1	2	100
	Multidisciplinary-01		Drawn From the University pool	3	3	100
	Ability Enhancement Course (AEC-01)		Drawn from the University Pool	2	2	100
	Skill Enhancement Course (SEC-01)		Drawn From the University pool	3	3	100
	Value added course-01		Drawn From the University pool	2	2	100
	Value added course-02		Drawn From the University pool	2	2	100
	TOTAL			**20**	**22**	**900**
II	Major -02	UFOBMJT1	Fundamentals of Soil Science	3	3	100
	Major -02 Practical	UFOBMJP1	Fundamentals of Soil Science	1	2	100
	VOC -01		Drawn From the University pool	1	1	100
	VOC -01 Practical			3	6	100
	Multidisciplinary-02		Drawn From the University pool	3	3	100

	Ability Enhancement Compulsory (AEC-02)		Drawn from the university pool	2	2	100
	Skill Enhancement Course (SEC-02)		Drawn From the University pool	3	3	100
	Value added course-03		Drawn From the University pool	2	2	100
	Value added course-04		Drawn From the University pool	2	2	100
	TOTAL			**20**	**24**	**900**
	Summer Internship for two weeks (Compulsory for 1 Year Certificate course)			4		100

Semester	Course	Course Code	Name of the course	Credit	Hour / week	Marks
III	Major -03	UFOCMJT1	Fores Mensuration	3	3	100
	Major -03 Practical	UFOCMJP1	Forest Mensuration	1	2	100
	Major -04	UFOCMJT2	Forest Genetics and Tree Improvement	3	3	100
	Major -04 Practical	UFOCMJP2	Forest Genetics and Tree Improvement	1	2	100
	VOC -02		Drawn From the University pool	3	3	100
	VOC -02 Practical			1	2	100
	Multidisciplinary-03		Drawn From the University pool	3	3	100
	Ability Enhancement Course (AEC-03)		Drawn From the University Pool	2	2	100
	Skill Enhancement Course (SEC-03)		Drawn From the University Pool	3	3	100
	Total			**20**	**23**	**900**
IV	Major -05	UFODMJT1	Tree Seed and Nursery Technology	4	4	100

	Major -05 Practical	UFODMJP1	Tree Seed and Nursery Technology	1	2	100
	Major -06	UFODMJT2	Forest Management	4	4	100
	Major -06 Practical	UFODMJP2	Forest Management	1	2	100
	Major -07	UFODMJT3	Forest Ecology and Ecosystem Analysis	3	3	100
	Major -07 Practical	UFODMJP3	Forest Ecology and Ecosystem Analysis	1	2	100
	VOC -03		Drawn From the University Pool	1	1	100
	VOC -03 Practical			3	6	100
	Ability Enhancement Course (AEC-04)		Drawn From the University Pool	2	2	100
	Summer Internship (Compulsory for all)		Attachment to Industries/Institutions/Villages	Non credit		100
	TOTAL			**20**	**26**	**1000**
	Summer Internship (Compulsory for 2 Year Diploma course)			4		100
V	Major -08	UFOEMJT1	Application of RS & GIS in Forest and Watershed Management	4	4	100
	Major -08 Practical	UFOEMJP1	Application of RS & GIS in Forest and Watershed Management	1	2	100
	Major -09	UFOEMJT2	Wood Science and Technology	4	4	100
	Major -09 Practical	UFOEMJP2	Wood Science and Technology	1	2	100
	Major -10	UFOEMJT3	Forest Resource Economics & Management	4	4	100
	Major -10 Practical	UFOEMJP3	Forest Resource Economics & Management	1	2	100
	Minor- 02		Drawn From the University pool	3	3	100
	Minor - 02 Practical			1	2	100
	Internship	UFOEINT1	Compulsory for the two weeks	2	-	100
	S			**21**	**23+**	**900**
VI	Major -11	UFOFMJT1	Forest Protection	4	4	100
	Major -11	UFOFMJP1	Forest Protection	1	2	100

	Practical					
	Major -12	UFOEMJT2	Agroforestry and Tree Outside Forests	4	4	100
	Major -12 Practical	UFOFMJP2	Agroforestry and Tree Outside Forests	1	2	100
	Major -13	UFOFMJT3	Forest Products and utilization	4	4	100
	Major -13 Practical	UFOFMJP3	Forest Products and utilization	1	2	100
	Minor- 03		Drawn From the University pool	1	1	100
	Minor- 03 Practical			3	6	100
	TOTAL			**19**	**25**	**800**
VII	Major -14	UFOGMJT1	World Forestry, Urban Forestry and Community Forestry	4	4	100
	Major -14 Practical	UFOGMJP1	World Forestry, Urban Forestry and Community Forestry	1	2	100
	Major -15	UFOGMJT2	Forest Policies, Acts and Legislation	4	4	100
	Major -15 Practical	UFOGMJP2	Forest Policies, Acts and Legislation	1	2	100
	MOOC -1	UFOGMOC1	Wildlife and its conservation /MOOC	4	4	100
	Minor- 04		Drawn From the University pool	3	3	100
	Minor- 04 Practical			1	2	100
	Seminar	UFOGSMNR	**Seminar (Compulsory)**	1	4	
	TOTAL			**19**	**25**	**700**
				1		100
VIII (4 Year Honours course)	Major -16	UFOHMJT1	Biostatistics and Research Methodology	4	4	100
	Major -16 Practical	UFOHMJP1	Biostatistics and Research Methodology	1	2	100

	Major -17	UFOHMJT2	Forest Business and Entrepreneurship Development	4	4	100
	Major -17 Practical	UFOHMJP2	Forest Business and Entrepreneurship Development	1	2	100
	Minor- 05		Drawn From the University pool	3	3	100
	Minor- 05 Practical			1	2	100
	Minor- 06		Drawn From the University pool	3	3	100
	Minor- 06 Practical			1	2	100
	Seminar		Seminar	3	3	100
			Total	**21**		**900**
VIII (4 Year Honours with Research)	Major -16	UFOHMJT1	Biostatistics and Research Methodology	4	4	100
	Major -16 Practical	UFOHMJP1	Biostatistics and Research Methodology	1	2	100
	Minor- 05		Drawn From the University pool	3	3	100
	Minor- 05 Practical			1	2	100
	Research Project/Dissertation	UFOHRPDSSS1	Research Project/Dissertation	12	-	100
			Total	**21**		**500**
GRAND TOTAL CREDITS				**160**		

Minor Courses offered by Department of Forestry Wildlife and Environmental Sciences

Semester	Course	Course Code	Name of the course	Credit	Hour/ week	Marks
I	MINOR-1	UFOAMNT1	Introduction to Wildlife	3	5	100
	MINOR-1 (Practical)	UFOAMNP1	Introduction to Wildlife	1		100
V	MINOR-2	UFOEMNT1	Earth Care Policy	3	5	100
	MINOR-2 (Practical)	UFOEMNP1	Earth Care Policy	1		100
VI	MINOR-3	UFOFMNT1	Commercial Nursery Production	3	5	100
	MINOR-3 (Practical)	UFOFMNP1	Commercial Nursery Production	1		100
VII	MINOR-4	UFOGMNT1	Value addition of	3	5	100

			NTFP			
	MINOR-4 (Practical)	UFOGMNP1	Value addition of NTFP	1		100
VIII	MINOR-5	UFOGMNT1	Urban Forestry and Designing	3	5	100
	MINOR-5 (Practical)	UFOGMNP1	Urban Forestry and Designing	1		100
	MINOR-6	UFOGMNT2	Ecotourism	3	5	100
	MINOR-6 (Practical)	UFOGMNP2	Ecotourism	1		100

Vocational Courses offered by Department of Forestry Wildlife and Environmental Sciences

Semester	Course	Course Code	Name of the course	Credit	Hour/ week	Marks
II	VOC -1	UFOBVCT1	Nursery and Plantation Technology	1	1	100
	V O C - 1 (Practical)	UFOBVCP1	Nursery and Plantation Technology	3	6	100
III	VOC – 2	UFOCVCT1	Environmental audit	1	1	100
	V O C - 2 (Practical)	UFOCVCP1	Environmental audit	3	6	100
IV	VOC-3	UFODVCT1	Industrial Plantation	1	1	100
	V O C - 3 (Practical)	UFODVCP1	Industrial Plantation	3	6	100

Multidisciplinary Courses offered by Department of Forestry Wildlife and Environmental Sciences

Semester	Course	Course Code	Name of the course	Credit	Hour/ week	Marks
I	MULT-01	UFOAMDT1	Know Your Forest	3	3	100
II	MULT-02	UFOBMDT1	Introduction to Indian wildlife	3	3	100
III	MULT-03	UFOCMDT1	Plantation Forestry	3	3	100

Skill Enhancement Courses offered by Department of Forestry Wildlife and Environmental Sciences

Sl. No.	Course	Course Code	Name of the course	Credit	Hour/ week	Marks
I	SEC-01	UFOASCT1	Nursery Technology	2	4	100
	SEC-01 (Practical)	UFOASCP1	Nursery Technology	1		100
II	SEC-02	UFOBSCT1	Wildlife Biology	2	4	100
	SEC-02 (Practical)	UFOBSCP1	Wildlife Biology	1		100
III	SEC-03	UFOCSCT1	Afforestation Techniques	2	4	100
	SEC-03 (Practical)	UFOCSCP1	Afforestation Techniques	1		100

Value Added Courses offered by Department of Forestry Wildlife and Environmental Sciences

Semester	Course	Course Code	Name of the course	Credit	Hour/ week	Marks
I/II	VAC-01	UFOVACT1	Environmental Education	2	2	100
As per university instruction environmental education subject will be taught to the different student of the university.						

MOOC Course offered by the different online platform.

Semester	Course	Course Code	Name of the course	Credit	Hour/ week	Marks
VII	MOOC	UFOGMOC1	Wildlife and its conservation /MOOC	4	4	100
As per university instruction online/offline MOOC subject will be taught to the student if not available on online plateform.						

विभागाध्यक्ष
Head
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Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

SEMESTER – I

PAPER-I: SILVICULTURE **(Major-01)** **CR: 3+1**

Sub Code	L	T	P	Duration	IA (T)	ESE (T)	IA (P)	ESE(P)	Total	Credits
UFOAMJT1 UFOAMJP1	3	-	1	5 hours	30	70	30	70	200	4

Course Objectives:

1. This course will make an introduction of students with silviculture.
2. To provide knowledge about various forest types silvicultural practices and influences of locality factor on forest.
3. To provide knowledge about forest regeneration, natural and artificial and Forest nursery development
4. The subject provides information related to cultural operations like tending operation, pruning, climber cutting etc.
5. To provide information about silvics of some important tree species.

Theory

Unit 1: Definition, objectives and scope of silviculture, status of forest cover of India. Forest tree identification.

Unit 2: Locality factors influencing forest growth and distribution in India. Major forest types of India –forest, composition and structure.

Unit 3: Seed collection, science of storage & testing, Natural and Artificial regeneration. Nursery techniques.

Unit 4: Silvicultural operations and their significance in Forestry.

Unit 5: Silvics of important forest tree species- *Cedrus deodara, Pinus roxburghii, Shorea robusta, Tectona grandis, Terminalia species, Dalbergia species, Bamboo species*

Practical

Study of composition of nearby forest areas to know the different species, Phenological study of some important tree species, Seed identification and sowing methods. Regeneration survey, Application of silvicultural operations, Nursery operations, Survey of the local vegetation.

Suggested Readings:

1. Champman, G.W. and Allan, T.G. (1978). Establishment Techniques for Forest Plantation F.A.O Forestry Paper No.8. F.A.O Rome.
2. Dwivedi, A.P. (1993). A Text Book of Silviculture, International Book Distributors, Dehradun.
3. Khanna, L. S. (1984). Principles and Practice of Silviculture, Khanna Bandu, Dehra Dun.

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4. Negi, S.S. (1983), General Silviculture, Bisen Singh Mahendra Pal Singh, 23 A Connaught Place Dehradun.

5. Ram Prakash and L.S. Khanna. (1991) Theory and Practice of Silvicultural systems. International Book Distributors, Dehra Dun.

6. Chandra KK and Rajesh Kumar (2022) Forestry Practical (A complete practical solution for students), Scientific Publishers, Jodhpur, India, ISBN 97893914118366

Course Outcomes:

CO1: Course will enrich the knowledge of students related to forest nursery production and forest types, different tree species and forest survey.

CO2: The course makes students to identify forest and tree species, their distribution, and vegetation structure.

CO3: Students will be able to conduct experiment on seed dormancy, forest regeneration survey and its analysis for vegetation / composition.

CO4: Student will be able to perform cultural operations like tending operation, pruning, and climber cutting etc. in a forest stand.

CO4: Student will learn the growth and life history of tree species.

Course Outcomes and their mapping with Program Outcomes:

CO	PO								PSO			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO1	3	2	3	-	-	2	3	3	3	3	3	2
CO2	3	2	3	-	-	2	3	3	3	3	3	2
CO3	3	2	3	-	-	2	3	3	3	3	3	2
CO4	3	2	3	-	-	2	3	3	3	3	3	2
CO5	3	2	3	-	-	2	3	3	3	3	3	2

Weightage:1-Sightly;2-Moderately;3-Strongly

PAPER-II: MINOR PAPER (Minor-01) CR: 3+1
Drawn from the University pool

PAPER-III: MULTIDISCIPLINARY (MTD-01) CR: 3
Drawn from the University pool

PAPER-IV: ABILITY ENHANCEMENT COURSE (AEC-01) CR: 2
Drawn from the University pool

PAPER-V: SKILL ENHANCEMENT COURSE (SEC- 01) CR: 3
Drawn from the University pool

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PAPER-IV: ABILITY ENHANCEMENT COURSE (AEC-02) CR: 2
Drawn from the University pool

PAPER-V: SKILL ENHANCEMENT COURSE (SEC- 02) CR: 3
Drawn from the University pool

PAPER-VI: VALUE ADDED COURSE (VAC-03) CR:2
Drawn from the University pool

PAPER-VII: VALUE ADDED COURSE (VAC- 04) CR:2
Drawn from the University pool

SUMMER INTERNSHIP CR: 4

SEMESTER – III

PAPER-I: FOREST MENSURATION (Major- 03) CR: 3 + 1

Sub Code	L	T	P	Duration	IA (T)	ESE (T)	IA (P)	ESE(P)	Total	Credits
UFOCMJT1 UFOCMJP1	3	-	1	5 hours	30	70	30	70	200	4

Course Objectives:

1. To acquaint students about tree/forest measurements and increment.
2. To develop skills for estimating the growing stock, volume, and age of the trees.
3. To understand the different methods and recent techniques of forest inventory.
4. To have the basic knowledge on forest surveying tools and techniques.
5. To know engineering aspects of forest building, road and bridge constructions.

Theory

Unit 1: Measurement of tree parameters: girth, diameter, height and form factor. Estimation of volume, growth and yield of individual tree and forest stands.

Unit 2: Stump analysis and stem analysis for determining past growth. Preparation of volume table, yield table, stand table & its application in forestry

Unit 3: Forest inventory, sampling methods adopted in forestry. Growth and yield prediction models – their preparation and applications.

Unit 4: Basic survey tools of forestry: Chain survey, plane table and compass survey.

Unit 5: Forest Engineering: Building materials, forest roads, culverts and bridges.

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Practical

Measurement of girth and diameter of plantation and forest, Determination of tree height and form factor, volume calculation of felled and standing trees. Estimation of tree age, Volume table preparation, Application of sampling procedures, Handling of GPS, preparation of yield and stand table. Application of different sampling methods; Quantification of regeneration and stand establishment; Measurement of crown density, Dendrochronological studies.

Survey of forest and plantations using chain/ plane table/ compass, total station, measurement of road camber and road profile, Identification of building materials and its field testing, visit of different types of bridges in forest areas.

Suggested Readings

1. Chaturvedi A N and Khanna L S. 1994. Forest Mensuration. International Book Distributor. Dehradun, India
2. Masani, NJ. 1995. Forest Engineering without tears, Natraj Publisher, Dehradun
3. Manikandan K and Prabhu S. 2012. Indian Forestry, Jain Brothers, New Delhi
4. Ram Parkash 1983. Forest Surveying. KhannaBandhu Book Publisher India.
5. Sharpe GW, Hendee CW & Sharpe WE. 1986. Introduction to Forestry. McGraw-Hill.
6. Simmons CE. 1980. A Manual of Forest Mensuration. Bishen Singh Mahender Pal Singh, Dehradun.
7. Ram Parkash 1983. Forest Engineering. International Book Distributor, Dehradun, India.

Course Outcomes:

1. Students will achieve knowledge of tree measurement.
2. Students will develop skills for estimating the forest growing stock, volume, and age of the trees.
3. Students will learn tool & techniques of forest inventory.
4. Students will be able to plan construction of forest building, road and bridges.

Course Outcomes and their mapping with Program Outcomes:

CO	PO								PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	1	1	1	1	2	3	3	3	3
CO2	3	3	2	1	3	1	3	3	3	3	1
CO3	3	3	1	1	3	1	2	3	3	3	3
CO4	3	3	2	1	3	1	2	3	3	3	3
CO5	3	3	2	1	3	1	2	3	3	3	3

Weightage: 1-Sightly; 2-Moderately; 3-Strongly

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PAPER-III: Forest Resource Economics & Management (Major-10) CR: 4+1

Sub Code	L	T	P	Duration	IA (T)	ESE (T)	IA (P)	ESE(P)	Total	Credits
UFOEMJT3 UFOEMJP3	4	-	1	6 hours	30	70	30	70	200	5

Course Objectives:

1. To know the basic elements of forest economics for income generation.
2. The students will be able to gather knowledge on basic economic principles.
3. To develop the concept of production forestry.
4. To provide wider vision related to price and income elasticity in forestry.
5. To depart knowledge on marketing chains in global markets.

Theory

Unit 1: Basic concept of economics, nature and scope of economics and its relationship with other sciences, micro and macroeconomics, problems in forest economics and management, application of microeconomics in solving forest resource problems, economically important forest products, types of forest goods and services.

Unit 2: Concept and types of demand, law of demand, measures of demand elasticity, Concept and types of supply, law of supply, measures of supply elasticity, emphasis on forest products demand and supply analysis, types and theory of utility, diminishing law of utility, equi-marginal utility and Hicks-Allen approach for determining consumer equilibrium, concept of revenue and uses, law of diminishing marginal returns.

Unit 3: Factors of production, their definition and characteristics, Marginal productivity theory, risk taking and uncertainty bearing theories of profit

Unit 4: Introduction to market, forest-based product market, classification and price determination under different market situations, forest produces in India and Chhattisgarh, forest land valuation, quantification and valuation of NTFPs.

Unit 5: National income and its concepts, concept and types of inflation, Carbon Credits, E-marketing

Practical

Estimation of demand elasticity with respect to price and income, Estimation of Supply elasticity with respect to price and income, utility measurement- total utility, marginal utility and average utility, revenue measurement- total revenue, marginal revenue and average revenue, market classification- visits to different markets of forest-based products, price determination under different market conditions

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Suggested Readings:

1. Edwin S. Mills (1975) Economic Analysis of Environmental Problems. New York: Columbia University Press
2. Fisher, A.C (1979) Resource and Environmental Economics. New York: John Wiley & Sons.
3. Nautiyal, J. C., (2011), Forest Economics, Principle and Applications, Natraj Publishers, Dehradun. New Delhi.
4. Orris C. Herfindahl (1969) Natural Resource Information for Economic Development. Baltimore: The Johns Hopkins University Press
5. Sharma, L.C., Forest economics planning & management.
6. Subba S Reddy (2012) Agricultural Economics. Oxford and IBH publishers.
7. Girish B Shahapurmath, S. S. Inamati. (2020), Marketing and Trade of Forest Produce,I SBN: 9789388020671, Satish Serial Publishing House

Course Outcomes:

CO1: Students will get knowledge about the implementation of economics in forestry and its allied subjects.

CO2: Students will be able to know about the demand and supply of forest-based industries and its diversification.

CO3: Student will be able to use various production factors and its utility in their own business

CO4: Student will understand the forest market and able to handle marketing channels

CO5: Student will be aware about the marketing trends of forest products condition and international market price of carbon credits.

Course Outcomes and their mapping with Program Outcomes:

CO	PO								PSO			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	1	3	3	3	3	3	3	3	3
CO2	3	3	3	1	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	2	3	3	2	3	3	2	2	3	2	2

Weightage:1-Sightly;2-Moderately;3-Strongly

PAPER-IV: MINOR PAPER **(Minor- 02)** **CR: 3 +1**

Drawn From the University pool

PAPER-V: WINTER INTERNSHIP (UFOEINT1) **CR: 2**

List of Revised Courses

Department : Department of Forestry, Wildlife and Environmental Sciences

Program Name : M. Sc. (Forestry and Environmental Sciences)

Academic Year : 2024-25

List of Revised Courses

Sr. No.	Course Code	Name of the Course
01.	PGFOAT4/ PGFOAP4	Forest Soil and Watershed Management
02.	PGFOCT1/ PGFOCP1	Wood Science and Technology
03.	PGFOCT2/ PGFOCP2	Forest Protection

Implementation of NEP/LOCF/CBCS / ECS

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

Academic Year : 2024-25
School : Natural Resources
Department : Forestry, Wildlife and Environmental Sciences
Date and Time : July 19, 2025 11:00 am
Venue : HOD room

The scheduled meeting of member of Board of Studies (BoS) of Department Forestry, Wildlife and Environmental Sciences, School of Studies of Natural Resources, Guru Ghasidas Vishwavidyalaya, Bilaspur was held on dated 19.06.2025 at 11:00 am in HOD room to design and discuss the and design the syllabus of B. Sc. (Forestry) 4 Years (8 semester) scheme as per NEP 2020 guidelines, M.Sc. Forestry and Environmental Sciences curriculum and credit framework/ syllabus as per CBCS guidelines. External Expert has joined the meeting through online mode.

The following members were present in the meeting:

7. Prof. Sanjeev Kumar, External Expert Member, Dean, College of Forestry, Banda University Agricultural and Techology, Banda (UP)
8. Shri Pankaj Sharma, External expert, DGM, Environment Management, NTPC, Sipat, Bilaspur
9. Prof. Dr. S.C. Tiwari, Dean, HoD, Chairperson, BoS, Dept. Forestry, Wildlife and Environmental Sciences
10. Prof. S. S. Dhuria, Member of BOS, Dept. Forestry, Wildlife and Environmental Sciences,
11. Prof. K. K. Chandra, Member of BOS, Dept. Forestry, Wildlife and Environmental Sciences,
12. Dr. Ajay Kumar Singh, Member, BoS, Assistant Professor, Dept. Forestry, Wildlife and Environmental Sciences

Following points were discussed during the meeting

1. Revised ordinance of B. Sc. (Forestry) Four Years (8 Semester) degree program.
2. The BoS has approved the NEP2020 Course curriculum and ordinance of B. Sc. (Forestry) Four Years (8 Semester) degree program with effect from academic session 2024-25.
3. The BoS has approved the NEP2020 Course curriculum and CBCS ordinance of M. Sc. (Forestry) Two Years (4 Semester) degree program with effect from academic session 2025-26.

New curriculum and credit framework- CBCS for M.Sc. Forestry Two Years (4 Semester) degree program was prepared. The details of course and credits are as follows:

Semester	Course Opted	Course Code	Name of the Course	Credit	Hours/ week	Marks
Ist SEM	Core-01	PGFOAT1	Advances in Silviculture	3	3	100
	Core-01 Practical	PGFOAP1	Advances in Silviculture	1	3	100
	Core -02	PGFOAT2	Forest Management	3	3	100
	Core -02 Practical	PGFOAP2	Forest Management	1	3	100
	Core-03	PGFOAT3	Forest Mensuration	3	3	100
	Core-03 Practical	PGFOAP3	Forest Mensuration	1	3	100
	Core -04	PGFOAT4	Forest Soil and Watershed Management	3	3	100
	Core -04 Practical	PGFOAP4	Forest Soil and Watershed Management	1	3	100
	OE-01	PGFOAOT	Essentials of Environmental Sciences	3	3	100
	OE-01 Practical	PGFOAOP	Essentials of Environmental Sciences	2	3	100
	TOTAL			**21**	**30**	**1000**
IIst SEM	Core -05	PGFOBT1	Remote Sensing and GIS	3	3	100
	Core -05 Practical	PGFOBP1	Remote Sensing and GIS	1	3	100
	Core -06	PGFOBT2	Advances in Agroforestry	3	3	100
	Core -06 Practical	PGFOBP2	Advances in Agroforestry	1	3	100
	Core-07	PGFOBT3	Forest Products & Utilization	3	3	100
	Core-07 Practical	PGFOBP3	Forest Products & Utilization	1	3	100
	Core -08	PGFOBT4	Climate Smart Forestry and Forest Policy	3	3	100

	Core -08 Practical	PGFOBP4	Climate Smart Forestry and Forest Policy	1	3	100
	Core -9	PGFOBT5	Wildlife and its Conservation/MOOCS	3	3	100
	Core -9 Practical	PGFOBP5	Wildlife and its Conservation/MOOCS	1	3	100
	Core -10	PGFOBT6	Forest Genetics and Tree improvement	3	3	100
	Core -10 Practical	PGFOBP	Forest Genetics and Tree improvement	1	3	100
	Internship	PGINTBI	**Summer Internship (Two weeks)**	**Non-credit**		
	TOTAL			**24**	**36**	**1200**
III[rd] SEM	Core 11	PGFOCT1	Wood Science and Technology	3	3	100
	Core 11 Practical	PGFOCP1	Wood Science and Technology	1	3	100
	Core-12	PGFOCT2	Forest Protection	3	3	100
	Core-12 Practical	PGFOCP2	Forest Protection	1	3	100
	Core 13	PGFOCT3	Forest Ecology and Biodiversity Conservation	3	3	100
	Core-13 Practical	PGFOCP3	Forest Ecology and Biodiversity Conservation	1	3	100
	Core 14	PGFOCT4	Industrial Safety, EIA and Environmental audit	3	3	100
	Core-14 Practical	PGFOCP4	Industrial Safety, EIA and Environmental audit	1	3	100
	Core -15	PGFOCT5	Forest Statistics and Research Methodology	3	3	100
	Core -15 Practical	PGFOCP5	Forest Statistics and Research Methodology	1	3	100
	TOTAL			**20**	**30**	**1000**

IVth SEM		PGFODD1	Dissertation	**19**	**36**	**400**
Grand total				**84**	**132**	**3600**

The NEP 2020 based scheme is recommended for B. Sc. (Forestry) Four Years (8 Semester) degree program from academic session 2025-26, and M.Sc. Forestry & Environmental Sciences (session 2025-26).

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Signature & Seal of HoD

PAPER IV. FOREST SOIL AND WATERSHED MANAGEMENT CR.4 (3+1)

Course Objectives:

1. To understand the properties of forest soils and management of fertility and productivity.
2. To learn about the problems associated with tropical forest soils and their management.
3. To understand the concept of watershed and sustainable approaches for watershed management for improving the forest health.
4. To develop the knowledge of soil water conservation.
5. To know the soil water and plant relationship with reference to the nature.

Theory

UNIT 1: Definition and importance of forest soils; classification and nomenclature of soils; physical, chemical and biological properties of forest soil. Difference between forest soil and other arable soils, Soil profile.

UNIT 2: Soils of the major forest biomes, soils under different forest types/plantations/land use systems, Soils and plant roots interactions, Soil degradationand its impact on forest ecosystem.

UNIT 3: Concept of soil fertility, impact of soil fertility onforest regeneration and forest composition.Soil organic matter, Humus formation, mineralization and immobilization, nutrient cycling, significance of C:N ratio. Microbial transformations of carbon and nitrogen.

UNIT 4: Biological Nitrogen Fixation and Mycorrhizal Associations in Forest. Fertilizers and Manures, Biofertilizers.

UNIT 5: Concept of watershed and watershed management. Characteristics of a watershed and their role in watershed management. Importance of watershed management, Ideo-types of watershed development plans and activities for the watershed. Criterion for watershed size determination.Integrated Watershed Management Programme (IWMP), Benefits of IWMP.

Practical

Determination of soil moisture, texture, porosity, bulk density; Determination of pH, EC, organic C &N, Soil aggregate analysis - dry and wet method, Estimation of MBC and MBN, Study of forest soil profile, Studies on types of fertilizers, biofertilizers and FYM uses in forest nursery, studies on drainage maps, characterization and delineation of watersheds, visits to nearby forest nursery and watershed areas.

Suggested Readings

S I Bhuyan 2022. Advances in Soil & Forest Research, Publisher: Pencil (One Point Six Technologies Pvt Ltd, ISBN-13: 978-9356103481

Khan Towhid Osman. Forest Soils: Properties and Management 2013, Springer International Publishing, ISBN3319025406, 9783319025407

A K Mani; R Santhi and K M Sellamuthu. 2008.*Fundamentals of Forest Soils*, Satish Serial Publishing HouseISBN-10: 8189304518; ISBN-13: 978-8189304515Dhuruva Narayana, V.V., Sastry, G. and Patnaik, V.S. 1990. *Watershed management.*ICAR Publication, New Delhi.

Murty, J.V.S.1995. *Watershed management in India.*Wiley Eastern, New Delhi.

Singh, P.K. 2000.*Watershed management: Design and Practices*. E-media publications,Udaipur, India.

N.C. Brady 1990.*The Nature and Properties of Soils*: Macmillan Publishing Company, New York (10th Edition).

Negi S.S., 2000. *Forest Soils*, International Book Distributors, .

D. Binkley and R.F. Fischer (2000).*Ecology and Management of Forest Soils* (fifth addition Willey & Blackwell Publisher)

S.A: Wilde 1995.*Forest Soils and Forest Growth, Periodicals* Express Book Agency, New Delhi, International Book Distributors, Dehradun.

Course Outcome:

1. Student will acquire sound knowledge on the physico-chemical and biological properties of forest soils.
2. Students will gain information on the nutrient transformation pattern in forest ecosystem.
3. Students will learn about the soil-plant-microbe interactions in forest ecosystem.
4. Students will be able to run different instruments used in soil analysis of forest soils.
5. Students will be enabled to prepare watershed map and management plan.

CO	PO					PSO		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	3	3	1	1	1	3	3	1
CO2	3	3	2	1	1	2	3	3
CO3	3	3	1	1	3	1	1	1
CO4	3	3	1	1	3	1	2	2
CO5	3	3	1	1	3	3	3	1

Weightage: 1-Sightly; 2-Moderately; 3-Strongly

CO	PO					PSO		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	3	3	1	1	1	3	3	1
CO2	3	3	3	1	3	3	3	3
CO3	3	3	2	3	3	3	3	3
CO4	1	1	3	3		1	3	3
CO5	2	2	2	1		2	2	1

Weightage: 1-Sightly; 2-Moderately; 3-Strongly

SEMESTER-III

PAPER I. WOOD SCIENCE AND TECHNOLOGY **CR.4 (3+1)**

Course Objectives:

1. To acquaint the students with the wood identification, microscopic examination and wood properties.
2. To adhere with strength and mechanical characteristics of wood and its suitability for different applications.
3. To enrich students on understanding wood seasoning and preservation aspects.
4. To impart knowledge regarding the scope and processes for developing composite, engineered and modified woods.
5. To acquire knowledge on effective sawing methods and wood working.

Theory

Unit 1: Wood formation, kinds of wood, Microscopic anatomy of wood. Physical properties of wood. Wood density, specific gravity and methods of their determination. Wood moisture content and its measurement. Acoustic and thermal properties. Electrical properties.

Unit 2: Mechanical properties-elastic constants, plasticity, Hook's Law, Poisson's ratio, modulus of elasticity, Strength and elasticity; impact of defects on wood quality. Standard tests of timber specimen's-compression, tensile strength, Mechanics and Rheology of wood, abrasion, brittleness and hardness.

Unit 3: Wood water relationship, wood drying, Refractory and non- refractory wood, Wood seasoning, types- air, kiln and special seasoning methods. Seasoning and defects. Wood preservations, types of preservatives and its application.

Unit 4: Wood modification, its need and scope. Engineered wood: Plywood, laminated. Wood adhesives – types, characteristics and applications.

PAPER II. FOREST PROTECTION

Cr.4 (3+1)

Course Objectives:

1. To identify the degrading agents of forest, pest and diseases.
2. To understand the prevention control measures of diseases associated with trees
3. To learn about integrated pest management techniques for ecofriendly management of forests pandemic.
4. To develop the knowledge of disease control and pest management.
5. To understand the host specific insect pest in the specific plants.

Theory

Unit I: General concept of forest protection. Abiotic and biotic forest damaging agencies. Forest fire and its impact on overall forest health. Forest fire monitoring systems.

Unit II: Forest pathology classification damaging types and its cure. Biodegradation of wood - microscopic and chemical effects of white rot, brown rot, soft rot and wood discoloration. Heart rots - factors affecting heart rots, damage caused, compartmentalization of decay in trees and management of heart rots.

Unit III: forest entomology classification damaging types and its cure. Different types of the damage and its prevention.

Unit IV: Important diseases on forest trees- Teak, Sal, Shisham, *Acacia, Dalbergia*, Deodar, Pines

and *Casuarina*. Biological control of insect pests and diseases of forest trees Nature of disease resistance.

Unit V: Principles and methods of integrated pests management; Insect attractants and repellents. Important insect pests of nurseries, plantations, avenue trees and their management. Insect pests of seeds of forest trees and their management.

Practical

Collection, identification and preservation of important insect pests and disease specimens of forest plants. Preparation of culture media and methods of inoculation. Vegetative and reproductive study of pathogens. Detection of insect infestation and seed borne mycoflora. Assessment of losses due to diseases, insect pests etc. Fire control methods and devices, Preparations of different pesticides; Preparation of fungicidal solutions; In-vitro efficacy and In vivo efficacy assessments.

Suggested Readings

Bakshi BK. 1976. *Forest Pathology*. Controller of Publications, GOI.
Jha LK &SenSarma PK. 1994. *Forest Entomology*. Ashish Publ. House.