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

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 on dated 26.07.2018 at 11:00 am for academic session 2018-19 to design and discuss the B. Sc (Forestry) Four Years Degree Program 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 program in forestry.

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

1.NR/FR/SC/03/01/L	Nursery Practices and Plantation Management
2. NR/FR/CR/04/10/L	Fundamentals of Wood Science
3.NR/FR/CR/04/12/L	Application of Remote Sensing and GIS in Forest and Watershed Management
4. Summer internship	Swayam Swachhta/NSS/Industrial visit/UBA/ Others

विभागाध्यक्ष
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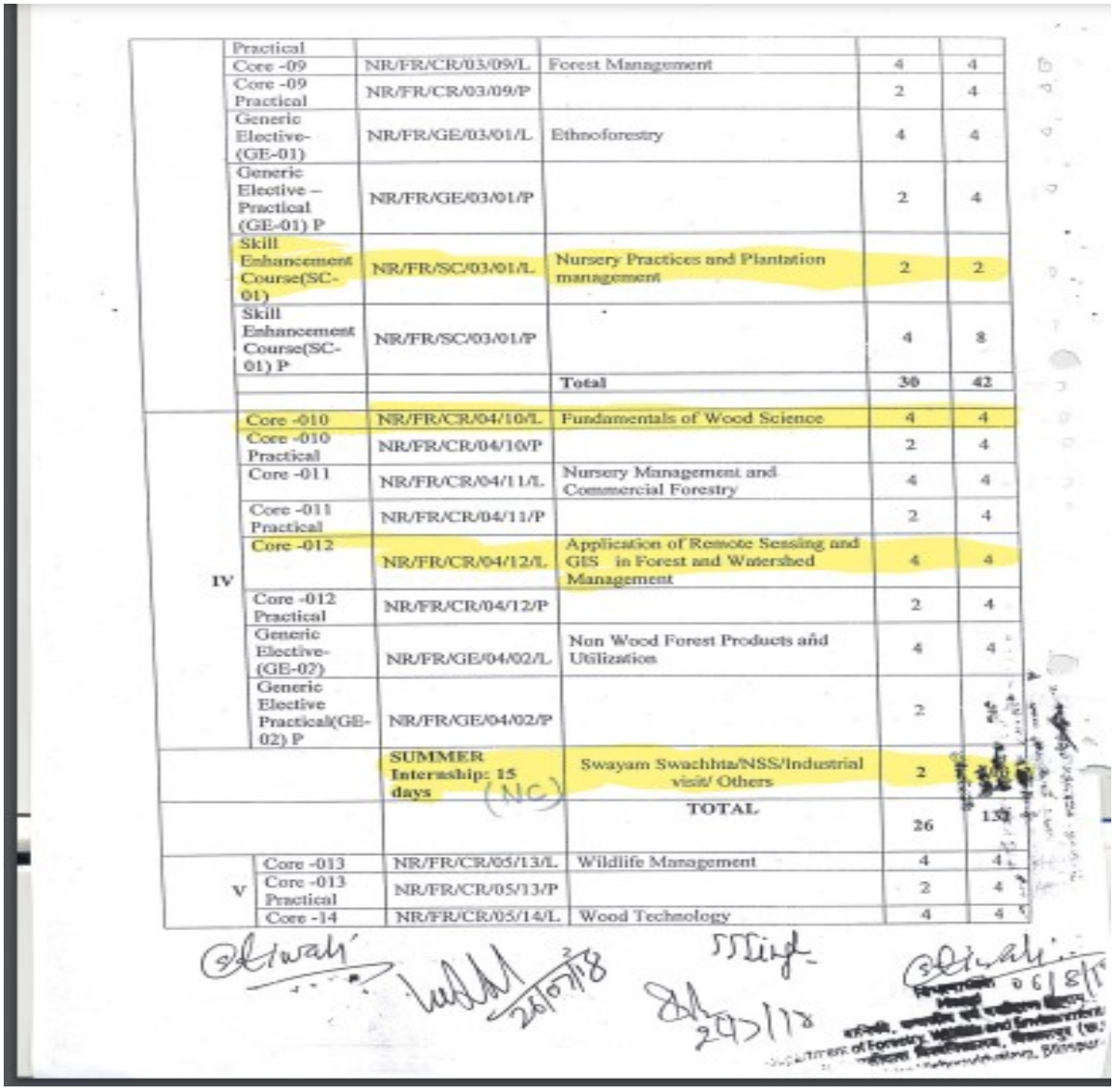
Signature & Seal of HoD

Scheme and Syllabus



	Practical				
	Core -09	NR/FR/CR/03/09/L	Forest Management	4	4
	Core -09 Practical	NR/FR/CR/03/09/P		2	4
	Generic Elective-(GE-01)	NR/FR/GE/03/01/L	Ethnoforestry	4	4
	Generic Elective – Practical (GE-01) P	NR/FR/GE/03/01/P		2	4
	Skill Enhancement Course(SC-01)	NR/FR/SC/03/01/L	Nursery Practices and Plantation management	2	2
	Skill Enhancement Course(SC-01) P	NR/FR/SC/03/01/P		4	8
			Total	30	42
IV	Core -010	NR/FR/CR/04/10/L	Fundamentals of Wood Science	4	4
	Core -010 Practical	NR/FR/CR/04/10/P		2	4
	Core -011	NR/FR/CR/04/11/L	Nursery Management and Commercial Forestry	4	4
	Core -011 Practical	NR/FR/CR/04/11/P		2	4
	Core -012	NR/FR/CR/04/12/L	Application of Remote Sensing and GIS in Forest and Watershed Management	4	4
	Core -012 Practical	NR/FR/CR/04/12/P		2	4
	Generic Elective-(GE-02)	NR/FR/GE/04/02/L	Non Wood Forest Products and Utilization	4	4
	Generic Elective Practical(GE-02) P	NR/FR/GE/04/02/P		2	4
		SUMMER Internship: 15 days	Swayam Swachhta/NSS/Industrial visit/ Others	2	
			TOTAL	26	132
V	Core -013	NR/FR/CR/05/13/L	Wildlife Management	4	4
	Core -013 Practical	NR/FR/CR/05/13/P		2	4
	Core -14	NR/FR/CR/05/14/L	Wood Technology	4	4

NURSERY PRACTICES AND PLANTATION MANAGEMENT CR: 2 + 4

Nursery, introduction, objectives and scope, types of nursery, choosing nursery site, design and layout of the nursery, preparation of nursery beds, producing plant from seed, seed handling, dormancy and treatments, methods of sowing, time and season, potting mixtures, transplanting of young seedlings, plant containers, compost and mulches, nutrient and soil management, disease and pest control, sale and marketing.

Plantation: traditional and high tech plantation, layout of nursery design, different types of pits, site selection, calculation of plant requirement, pit filling, nutrient and pest management, post plant care, tree architects.

Practical

Site selection and its assessment, preparation of different types of nursery bed, study of plant containers, seed treatment, seed sowing, preparation of potting mixtures, application of mulches, application of weedicides, Compost preparation, Tools and instruments, nursery record. Assessment of plantation site, visit of nursery and plantations, pruning methods in newly and old plantations, fertilizer and weed management practices. Marketing management of nursery grown seedlings.

Suggested Readings:

1. Keats C Hall. 2003 Manual on nursery practice. Forest Department, Jamaica. E book
2. Pawar Pankaj 2007. Practical Manual of plantation forestry. Scientific publisher, Jodhpur
3. Sharma and Singh NP. 2011. Soil and orchard management. Daya Publishing House, Delhi
4. Luna RK. 2006. Plantation forestry in India. International book distributor, Dehradun India.

SEMESTER – IV

FUNDAMENTALS OF WOOD SCIENCE

CR: 4 + 2

Introduction to Wood. Secondary growth in woody plants. Mechanism of wood formation. Formation of early and late wood, growth rings, transformation of sapwood to heartwood. The macroscopic features of wood, bark, sapwood, heartwood, pith, wood rays, resin or gum-canals. Cell inclusions. Physical properties of wood; colour, hardness, weight, texture, grain, lusture etc. Mechanical properties of wood i.e. modulus of elasticity, ultimate stress, fiber stress at elastic limit, important factor influencing strength properties. Chemistry of wood and wood components. Wood water relationship. Abnormalities in wood: deviation from typical growth form (leaning, bending, crook, fork, and buttress), grain deviation, false and discontinuous growth rings. Reaction wood, compression wood and tension wood. Disruption of continuity of inner wood, shakes, included bark, resin pockets, pith flecks, knots (live and dead).

PRACTICAL

Study of gross features of different types of wood; straight interlocked, spiral and wavy grain, texture, lusture, etc. Study of anatomical features of different types of wood pores /vessels. Study of wood rays and their types Study of non-porous woods, their physical and anatomical description Study of cell inclusions in wood. Estimation of moisture content and density of wood.

Suggested Readings:

1. Anonymous. (1976) Indian forest utilization. Volume I and II ICFRE Publication, Dehradun.
2. Mehta, T.(1981) A handbook of forest utilization. Periodical Expert Book Agency, Delhi. 298 p.
3. Rao, K.R. and Juneja, K.B.S.(1992) Field identification of 50 important timbers of India. ICFRE Publi. Dehradun.
4. Sharma, L.C. (1977)Development of forests and forest based industries, Bishen Singh Mahendra
5. Pal Singh, Dehradun. Trotter, H (1940) Manual of Indian forest utilization. Oxford University Press, New Delhi.
6. Trotter, H. (1982) Indian forest utilisation, Forest Research Institute and Colleges, Dehradun.
7. Terry Porter (2006) Wood Identification and Use.Guide Master Craftman publications.

APPLICATION OF REMOTE SENSING AND GIS IN FOREST AND WATERSHED MANAGEMENT CR: 4 + 2

Introduction of Remote Sensing, World Satellite system, Energy sources and radiation principals. EMR and Spectrum concept, Atmospheric windows. Interaction of EMR with Earth surface features, spectral signatures. SAR Interferometry, Fraction of absorbed photosynthetically active radiation. Basics of GIS, components, application and advantages. GIS software used. Data Image Processing concept, Data analysis, data output in GIS. Global Navigation Satellite System concept, Basic information on vegetation indices (RVI, NDVI, PVI, SAVI and LAI), different vegetation parameters for Watershed Management, Plant species specification, DEM creation and Soil mapping methods, Topographical character analysis concept in forest and watershed. Conceptual knowledge of use of remote sensing in

Water cycle (precipitation, soil moisture, snow, evapotranspiration) system. Riparian zonation, Land cover data, its derivation and classification scheme for Integrated Watershed Management.

PRACTICAL

Acquaintance with GIS software and imagerics. map reading of SOI toposheets, Image processing, georeferencing, digitizing, sub setting, mosaicing and feature identification, GPS survey and point location, unsupervised and supervised classification of images for forest type and watershed area. Forest and watershed land use/land cover classification, field visit for ground data collection and truthing.

Suggested Readings:

1. M. Anji Reddy (1998). Textbook of Remote Sensing and GIS
2. Curran, P.J. (1985) Principles of Remote Sensing, Long man Group Ltd., England
3. Janssen, L.F.(2000) Principles of Remote Sensing. ITC. Edl. Text Book Series II. The Netherlands
4. Rolf A.de By. (2000) Principles of Geographical Information Systems. ITC. Edl. Text Book Series I. The Netherlands
5. Sabins, F.F. (1978) Remote Sensing-Principles and Interpretation. W.H.Freeman and Co., San Francisco.
6. Sharma, M.K.(1986) Remote Sensing and Forest Surveys, International Book Distributors, Dehra Dun