

## **Syllabus for Associate Professor**

### **Forestry**

#### **1. Silviculture: 25%**

- 1.1. Natural regeneration and artificial plantations,
- 1.2. Locality factor and site index
- 1.3. Tree improvement,
- 1.4. Silvicultural Systems classification and their application
- 1.5. Quantitative silviculture: growth function, stand dynamics, competition;
- 1.6. Urban forestry and green space
- 1.7. Plantation forestry
- 1.8. Concept of Forest Protection
- 1.9. Concept of Dendrology

#### **2. Forest Management 25%**

- 2.1. Concept of normal forests, attributes of normality and its implications, 2.2. Concept of rotation and conversion in forest management choice and application,
- 2.3. Sustainable forest management
- 2.4. Forest management: Global and Asian context
- 2.5. Concept of Forest health
- 2.6. Yield, yield regulation, sustainable yield
- 2.7. Forest certification and schemes
- 2.8. Forest management in climate change
- 2.9. Green Governance in Forestry
- 2.10. Political Ecology of participatory forestry
- 2.10. Challenges in application of forest management principles in context of Nepal
- 2.11. Application of RS and GIS in Forest Management and Monitoring

- 2.12 Types and estimating methods of forest growing stock and increment
- 2.13. Natural disturbances impacts in forestry
- 2.14. Historical perspective in forest management (National and Global context)

**3. Forest Mensuration** **20%**

- 3.1. Concept of tree and forest measurement,
- 3.2. Forest Resources Volume and Bioimass Estimation
- 3.3. Forest sampling and inventory techniques in different forest products
- 3.4. Use of RS/GIS in forest inventory, Photo interpretation, Use LiDAR in forest inventory.
- 3.5. Concept, characteristics and importance of tree cavity
- 3.6. Estimating Forest Productivity and Value using RS and GIS

**4. Forest Research and Statistics** **20%**

- 4.1 Experimental design (CRD, RCBD, LSD, Factorial design, multiple Comparison
- 4.2 Statistical methods used in forestry research-statistical parameters and tests
- 4.3 Multiple regression model, assumption, estimation and testing of coefficient of determination.
- 4.4 Theory and skills in review of literature, types of research, formulation of research proposal and field data collection.
- 4.5. Qualitative data collection methods and analysis
- 4.6. Report writing, referencing, and formatting report
- 4.7. Forestry research, innovation and impact in developing countries, Problems and prospects
- 4.8. Different tools for research analysis in forestry

**5. Others** **10%**

- 5.1 Forest Policy and Strategy, Acts and Regulations, Directives and Guidelines
- 5.2 Agroforestry systems and practices and its role in achieving SDGs

- 5.3 Domestication and commercialization of Non-Timber Forest Products
- 5.4 The science of climate change, Climate change impacts and vulnerability, Climate change adaptation and mitigation, Adaptation planning and policy
- 5.5 Nursery management techniques
- 5.6 Wood Defects, Wood Seasoning and Wood grading techniques
- 5.7 Extension teaching methods and program production use in forest extension

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