

COLLEGE OF FORESTRY
DEPARTMENT OF FOREST POLICY AND LAW
Curriculum of M.Sc. Forestry (Forest Business Management)

A. Semester wise credit distribution

Category	Semester-I	Semester-II	Semester-III	Semester-IV	Total
Major Courses	8	12	-	-	20
Minor Courses	5	3	-	-	08
Supporting Courses	3	-	3	-	06
Common Courses/ one credit course	2	2	1	-	05
Seminar	-	-	1	-	01
Dissertation/ Thesis Work	-	-	12	18	30
Total Credits	18	17	17	18	70

B. Courses

1. Major Courses:

Course No.	Course Title	Credits	Department to offer
FBM-501	Forest Policy & Forest Law	2+0	Forest Policy and Law
FBM-502	Forest Resource Analysis	2+0	Forest Policy and Law
FBM-503	Finance and Marketing Management of Forest products	2+1	Forest Policy and Law
FBM 504	Managerial Economics	1+0	Forest Policy and Law
FBM 505	Forest organizational development and industrial linkage	2+0	Forest Policy and Law
FBM 506	Farm management	2+0	Forest Policy and Law
FBM 507	Project planning, monitoring and evaluation	1+1	Forest Policy and Law
FBM 508	Production management of nursery and plantation forestry	1+1	Forest Policy and Law
FBM 509	Entrepreneurship development and project management	1+1	Forest Policy and Law
FBM-510	Advances in Economic analysis in forestry	1+1	Forest Policy and Law
	Total	20	

2. Minor Courses

SAF-504	Agroforestry Systems	2+1	SAF
FRM-506	Forest Ecosystem Services and Valuation	2+1	FRM
FPU-505	Forest products Laboratory Techniques	0+2	FPU
	Total	08	

3. Supporting Courses:

Course No.	Course Title	Credits	Department to offer
FOR-511	General Statistical methods and computer applications	2+1	Dept. of Agri. Statistics, CA
FBM-511	Ecotourism and landscape management	1+1	Forest Policy and Law

FBM-512	Forest management technology	1+0	Forest Policy and Law
	Total	6	

4. Common Courses or One credit Courses (All 5 credits to be chosen)

Course No.	Course Title	Credits	Department to offer
PGS-501	Library and Information Science	0 + 1	Central Library , OUAT
PGS-502	Technical Writing and Communication Skill	0 + 1	College of Forestry, OUAT
PGS-503	Intellectual Property and Management	1 + 0	IPR Cell, OUAT, OUAT
PGS-504	Basic Concepts in Laboratory Research Techniques	0 + 1	Central Laboratory, OUAT
PGS-505	Applied Biological Research , Research ethics and Rural Development	1 + 0	College of Forestry, OUAT
	Total	5	

5. Seminar

Course No.	Course Title	Credits	Department to offer
FBM-591	Seminar	0 + 1	Forest Policy and Law , OUAT
	Total	1	

6. Research

Course No.	Course Title	Credits	Department to offer
FBM-598	Master's Research	0 + 12	Forest Policy and Law , OUAT
FBM-599	Master's Research	0 + 18	Forest Policy and Law , OUAT
	Total	30	

C. Courses Semester wise:

Semester-I			
FBM-501	Forest Policy & Forest Law	2+0	Forest Policy and Law
FBM-502	Forest Resource Analysis	2+0	Forest Policy and Law
FBM-503	Finance and Marketing Management of Forest products	2+1	Forest Policy and Law
FBM-504	Managerial Economics	1+0	Forest Policy and Law
SAF-504	Agroforestry Systems	2+1	Silviculture and Agroforestry
FPU-505	Forest products Laboratory Techniques	0+2	Forest Products and Utilisation
FOR-511	General Statistical methods and computer applications	2+1	Dept. of Agri. Statistics, CA
PGS-501	Library and Information Science	0+1	Central Library , OUAT
PGS-502	Technical Writing and Communication Skill	0+1	College of Forestry, OUAT
	Total	18	

Semester-II			
FBM 505	Forest organizational development and industrial linkage	2+0	Forest Business management
FBM 506	Farm management	2+0	Forest Policy and Law
FBM 507	Project planning, monitoring and evaluation	1+1	Forest Policy and Law

FBM 508	Production management of nursery and plantation forestry	1+1	Forest Policy and Law
FBM 509	Entrepreneurship development and project management	1+1	Forest Policy and Law
FBM-510	Advances in Economic analysis in forestry	1+1	Forest Policy and Law
FRM-506	Forest Ecosystem Services and Valuation	2+1	Forest Resource Management
PGS-503	Intellectual Property and Management	1 + 0	IPR Cell, OUAT, OUAT
PGS-504	Basic Concepts in Laboratory Research Techniques	0 + 1	Central Laboratory, OUAT
	Total	17	

Semester-III			
FBM-511	Ecotourism and landscape management	1+1	Forest Policy and Law
FBM-512	Forest management technology	1+0	Forest Policy and Law
PGS-505	Applied Biological Research , Research ethics and Rural Development	1+0	College of Forestry, OUAT
FBM-591	Seminar	0+1	Forest Policy and Law , OUAT
FBM-598	Master's Research	0+12	Forest Policy and Law , OUAT
	Total	17	

Semester-IV			
FBM-599	Master's Research	0+18	Forest Policy and Law , OUAT
	Total	18	
	Grand Total	70	

SYLLABUS

FBM 511 Forest policy and forest law (2+0)

Theory

Forest policy – Relevance and scope; National Forest Policy – 1894, 1952 and 1988; General principles of criminal law; Indian Penal Code, criminal procedure code; Indian evidence act applied to forestry matters.

Forest laws; Indian Forest Act –1927, general provision and detailed study; Forest Conservation Act 1980, Wildlife Protection Act 1972 Important Forest Rules and Guidelines. Important case studies and landmark judgments.

Suggested Readings

Indian Forest Acts (with short notes) 1975. Allahabad Law Agency.

Jha LK. 1994. *Analysis and Appraisal of India's Forest Policy*. Ashish Publ. House.

National Forest Policy 1952. Ministry of Food and Agriculture, New Delhi.

National Forest Policy 1988. Ministry of Environment and Forests, New Delhi.

Negi SS. 1985. *Forest Law*. Natraj Publ.

Saharia VB. 1989. *Wildlife Law in India*. Natraj Publ.

FBM 502 Forest resource analysis (2+0)

Theory

Forest resources: its nature, scope, types (wood and non-wood), functions and importance on villagers/ tribals livelihood and regional & national economy. Raw materials of forest origin for industries viz; paper and pulp; plywood and board, saw mills, furniture making, packing case, match splints, toys etc. Modern timber identification techniques. Energy plantation and biodiesel. Carbon trading. Causes Minor forest products: edible products, fodder trees, shrubs, aromatic and medicinal plants, fodder, fibre and flosses, grasses, bamboo and cane, oil seeds, gum & resins, rubber, spices and miscellaneous products e.g. katha, latex, insecticides, soapnuts, etc. Animal products from forest: lac, honey, silk, fur, skins, tusks etc. of low productivity of forest resources and remedial strategies, Trends in the production of important forest resources Government. Policies on forest resources. Approaches for achievements under five year plans. Management strategies for improved production and consumption of forest resources.

Suggested Readings

FAO. 1981. Tropical Forest Resources Assessment Project (In the Framework of Gems).

Forest Resources of Tropical Africa. Part I & II. *Regional Synthesis*.

Kerr JM, Marothia DK, Singh K, Ramaswamy C & Bentley WR. 1997. *Natural Resource Economis – Theory and Application in India*.

Oxford & IBH. Makchau JP & Malcolm LR. 1986. *Economics of Tropical Farm Management*. Cambridge Univ. Press.

Upton M. 1976. *Agricultural Production and Resource Use*. Oxford Univ. Press.

FBM 503 Finance and Marketing Management of Forest products (2+1)

Theory:

Management principles: planning techniques, strategic planning, organization structure, co-ordination and controlling techniques, approaches to management. SWOT analysis. Financial Management: Definition, aims, objectives, financial acquainting, accounting records, balance sheet, fund flow, tools for financial analysis, statement, cost and analysis for management decisions, profit and loss accounting, compounding and discounting, ratio analysis, purpose essentials of budgeting, management decisions, budgeting and control. Components and types of preparing budget. Working capital: definition, concept, needs, importance, sources and types of working capital. Factors influencing working capital requirement, working capital financing. Preparing financial statement. Long term financial management, investment analysis, capital markets, corporate risk management, venture carital. Organisation of finance function in forest based firms. Sources of long term finance. Market: Concept, components, classification, structure of market, factors affecting market, simple market model, conduct and performance. Types, degree, measurement and effects of market integration. Marketing: Objectives and strategies of marketing, selecting and managing marketing . managerial marketing. Marketing channels. Pricing strategies. Demand and supply . sale promotion .legislation relating licensing. Company law. Marketing cost, margin and price spread concepts and application. Marketing strategy, marketing efficiency: definition, approaches and empirical assessment of marketing efficiency, supply chain. IPR and its implication, forest business.

Practical

Preparation of financial statements, depreciation accounting methods, trend and variance analysis, cost-volume profit analysis. Financial planning and forecasting, Estimation of working capital requirement. Break even analysis. Library review of studies in marketing and trade of national and international timber and non-timber forest products. Analysis of price and market arrival data of forestry products for examining trends, seasonal, cyclical, secular variations. Exercises on marketing channels, costs, margins and price- spread of important forest products. Case studies based on visits to selected markets, marketing institutions and forest based industries.

Suggested Readings

Koontz, H. and Donnel, C. 1999. *Essentials of management*. Tata McGraw Hill.

Kotler, P. 2000. *Marketing management- Analysis, planning and control*. Prentice Hall of India.

Massie, J.L. 1995. *Essentails of management*. Prentice Hall of India.

FAO 1986. *Guidelines to Project Evaluation*. Natraj Publ.

Kerr JM, Marothia DK, Singh K, Ramaswamy C & Bentley WR. 1997. *Natural Resource Economics – Theory and Application in India*. Oxford & IBH.

Makchau JP & Malcolm LR. 1986. *Economics of Tropical Farm Management*. Cambridge Univ. Press.

Nautiyal JC. 1988. *Forest Economics - Principles and Applications*. Natraj Publ.

FBM 504 Managerial economics (1+0)

Theory

Meaning, scope and nature of managerial economics. Business firm and its objectives in forestry. Measurement of profit and profit maximizing hypothesis. Economic analysis of consumer behaviour. Theories of demand and supply and equilibrium of the firm. The concept of elasticity and its significance. Theory of production and cost principles. Price and out-put determination under perfect and imperfect competition. Pricing practices – cost plus, marginal cost pricing and price determination (mark up) rule. Forecasting of demand, sales and profits in forest business. The concept and measurement of national income. Theories of consumption. Saving and investment functions. Inflation – concept, consequences and cures. Theories of business cycles in forestry.

Suggested Readings

Busby RJN. 1981. *Investment Appraisal in Forestry*. Forestry Commission Research Station, Surveys.

FAO 1986. *Guidelines to Project Evaluation*. Natraj Publ.

Kerr JM, Marothia DK, Singh K, Ramaswamy C & Bentley WR. 1997. *Natural Resource Economics – Theory and Application in India*. Oxford & IBH.

Makchau JP & Malcolm LR. 1986. *Economics of Tropical Farm Management*. Cambridge Univ. Press.

Nautiyal JC. 1988. *Forest Economics - Principles and Applications*. Natraj Publ.

Sharma, L.C. 1980. *Forest economics, planning and management*. Bisen Singh Mahendra Pal Singh, Dehradun.

FBM-505 Forest organizational development and industrial linkage (2+0)

Concept, goals and structure of forest Organisation. Formal & informal organisations in forestry sector and their role link. Tools for forest organization. people and community participation and organisation development. Operation research. Voluntarism. Leadership, motivation and cooperation in Organisations. Management Information Systems. Developing peoples Organisation, their role in Joint Forestry Management. Role of community organizer

as change agents. Cooperatives. Non-government Organisation (NGOs): rules for their establishment, interface between people & state Social Organisations- band, Caln, Tribe and Village. Communication for management and business. Importance of forest based industries in relation to Indian economy. Description of different forest based industries – paper and pulp, furniture, bamboo, sports goods, pencil making, match box and splint making, use of wood of lesser known forest species for commercial purposes.

FBM-506 Farm management (2+0)

Theory

Farm: Concept, present scenario, and its business application. Nature, scope and functions of farm business management. Integrated farming System. Principles involved in farm management. Decision making. Principles of farm planning and budgeting. Working out existing and alternative farm plans. Application of quantitative techniques in Forestry production. Importance of farm records, Types of physical and financial records. Farm business efficiency measures - Fundamentals of inventory control. Management of special farm projects like, nursery, plantations, Agroforestry, seed production, poultry, goatery, dairy, bee keeping, sericulture, mushrooms, aquaculture, fruit planting, vermin-compostingetc. Managerial problems of farms. Farm labour and its problems. Labour measurement, work allocation, raising labour productivity. Staff control-work progress charts, supervisory management, leadership and leadership styles, motivation; good labour relations, training needs, reward structure. Farm capital and its problems, farm machinery and its utilization.

Suggesting Readings

Busby RJN. 1981. *Investment Appraisal in Forestry*. Forestry Commision Research Station, Surveys.

FAO 1986. *Guidelines to Project Evaluation*. Natraj Publ.

Kerr JM, Marothia DK, Singh K, Ramaswamy C & Bentley WR. 1997. *Natural Resource Economis – Theory and Application in India*. Oxford & IBH.

Makchau JP & Malcolm LR. 1986. *Economics of Tropical Farm Management*. Cambridge Univ. Press.

Nautiyal JC. 1988. *Forest Economics - Principles and Applications*. Natraj Publ. Publ.

FBM 507 Project planning, monitoring and evaluation (1+1)

Theory

Project – importance and steps in project formulation. Ex-ante, concurrent and ex post project appraisal. Choice of discount rate. Financial feasibility of project, various techniques used for project. Advantage and disadvantages of discounting and non-discounting feasibility criteria. Forecasting forest business, Financial analysis of forestry projects. Sensitivity analysis. Introduction of network scheduling techniques. Critical path methods, characteristics, use and preparation of critical path. Monitoring and evaluation – definition, objectives and types. Project review meeting and preparation of project status reports. JFM and CFM, Fundamentals of environment impact assessment. Transit permit rules of timber and minor forest products, forest right, minimum support price for forest products.

Practical

Project preparation. Application of various methods like Net Present Value, Internal Rate of Returns, Benefit Cost Ratio, annuity, payback period. CPM, PERT approach in the formulation and appraisal of various Agroforestry and forestry projects. Exercises on sensitivity analysis.

Suggested Readings

Busby RJN. 1981. *Investment Appraisal in Forestry*. Forestry Commission Research Station, Surveys.

FAO 1986. *Guidelines to Project Evaluation*. Natraj Publ.

Kerr JM, Marothia DK, Singh K, Ramaswamy C & Bentley WR. 1997. *Natural Resource Economics – Theory and Application in India*. Oxford & IBH.

Makchau JP & Malcolm LR. 1986. *Economics of Tropical Farm Management*. Cambridge Univ. Press.

Nautiyal JC. 1988. *Forest Economics - Principles and Applications*. Natraj Publ.

FBM-508 Production management in nursery and plantation forestry (2+1)

Theory

Introduction to production theory. Resource-Product Relationship, Types and Kinds of Production Functions. Natural and Artificial regeneration. Propagation of forest plants. Seed sources, collection, storage, treatment. Nursery and Nursery techniques, Plantation techniques, plantation on different/ difficult sites and locations. Soil testing, fertigation schedule as per soil fertility. Soil conservation methods. resource allocation, resource combination, cost minimization, enterprise combination and planning and budgeting in nursery and plantations. Break-even analysis, managing risk and uncertainty in nursery and plantation forestry. Inventory management. Record book keeping system. Time value of money, Principles of financial analysis, Investment analysis in plantation forestry, Market

structure, Functions, Channels, Marketing efficiency and marketing problems of nursery and plantation forestry. Production life cycle.

Practical

Soil fertility evaluation and fertigation. Exercises on marginal analysis in nursery production, Exercises on time value of money and investment analysis. Exercises on marketing channels, costs, margin and price spread for different nursery and plantation crops.

Suggested Readings

Busby RJN. 1981. *Investment Appraisal in Forestry*. Forestry Commission Research Station, Surveys.

FAO 1986. *Guidelines to Project Evaluation*. Natraj Publ.

Kerr JM, Marothia DK, Singh K, Ramaswamy C & Bentley WR. 1997. *Natural Resource Economics – Theory and Application in India*. Oxford & IBH.

Makchau JP & Malcolm LR. 1986. *Economics of Tropical Farm Management*. Cambridge Univ. Press.

Nautiyal JC. 1988. *Forest Economics - Principles and Applications*. Natraj Publ.

FBM-509 Entrepreneurship development and project management (1+1)

Concepts, role, problems and prospects of entrepreneurship. Entrepreneur Vs. Manager, Attributes and Characteristics of a successful Entrepreneur. Developing economies with reference to Self-Employment. Creating Entrepreneurial Venture: Business Planning Process and defining Business Idea, Government Procedures for entrepreneurship. Project Management: technical, financial, marketing, personnel and management feasibility. Project funding by various commercial banks and financial institutions like NABARD, IDBI, ICICI, SIDBI, SFCs, Venture Capital Funding. Role of Central and State Government for promoting entrepreneurship through various incentives, subsidies, fiscal and tax concessions and grants. Insurance agencies to support forest entrepreneurs and their projects. Role of following agencies in the Entrepreneurship Development – District Industrial Centres (DIC), Small Industries Service Institute (SISI), Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB). Reasons for low / no women entrepreneurs, Case studies of Successful Entrepreneurial Ventures.

Practical

Practical

SWOT analysis, developing leadership skills, developing managerial skills, problem solving skill, supply chain management and total quality management, project planning formulation and report preparation. Techno-economic parameters for preparation of projects. Preparation of Bankable projects for various agricultural products and its value added products.

Suggested Reading

1. Maslow, A.H (1970) Motivation and personality. Harper and Row publishers , New York.
2. Perelson, B and Steiner, G (1964) Human behaviour. Harcourt Brace Jovanovich , New York.
3. Busby RJN. 1981. *Investment Appraisal in Forestry*. Forestry Commision. Research Station, Surveys.
4. FAO 1986. *Guidelines to Project Evaluation*. Natraj Publ.

FBM-510 Advances in economic analysis in forestry (1+1)

Theory

Use of theoretical frameworks of consumer behaviour, market equilibrium, efficiency of perfect and imperfect competition, game theory, and social welfare functions in decision about optimal utilization of forest resources; Issues and dynamics of domestic and international demand & supply of forestry products; Economic and financial rotations and sensitivity analysis of optimum rotation. Water shed evaluation. Environment impact assessment. Valuation of forestry goods and services. Benefit-cost analysis for forestry investments. National income accounting- issues and methodologies in green accounting. NRMironmental pollution as a case of common property management. Policy initiatives for improving the management of common property resources and NRMironmental conservation.

Practical

Exercises on forestry production relationships. Preparation of enterprise, partial and complete budgets. Application of various methods in formulation and appraisal of forestry projects. Case studies on harvesting, post harvest management and marketing of forest products. Identification of marketing channel– Calculation of Price Spread – Identification of Market Structure.

Suggested Readings

1. Kerr JM, Marothia DK, Singh K, Ramaswamy C & Bentley WR. 1997. *Natural Resource Economis – Theory and Application in India*. Oxford & IBH.

2. Nautiyal JC. 1988. *Forest Economics - Principles and Applications*. Natraj Publ.
3. Upton M. 1976. *Agricultural Production and Resource Use*. Oxford Univ. Press.
4. Dewett, K. K. 2005. *Modern Economic Theory*. S. Chand, New Delhi.
5. Dewett, K. K., Verma. 2004 *Elementary Economic Theory*, S. Chand, New Delhi
6. Jhingan, M. L. 2012. *Macro Economic Theory*. Vrindapublishers, New Delhi.
7. Reddy, S.S., Raghu Ram, P., Neelakanta Sastry, T.V., Bhavani, D.I. 2004. *Agricultural Economics*. Oxford and IBH Publishers, New Delhi.

FBM 511 Ecotourism and landscaping Management (1+1)

Theory

Ecotourism as a green business and role of green consumerism. Promoting ecotourism near sites of : mangroves, wild life habitat, sacred groves, wetland, sacred places, waterfalls. Identifying unique selling points for marketing. Potential of internet in marketing ecotourism. Economic valuation of ecotourism sites. Payments for NRMironmental services and role of ecotourism. Multiplier effects, opportunity costs and leakage in ecotourism industry projects. Elements, principles and components of landscaping. Landscape architecture, ecology and planning for eco-tourism. Wild life tourism, Walkways, ropeways- turfs, topiaries, bonsai, live hedges-pergolas, carpets, lawn, etc. Urban ecotourism: planning for urban planting for roads, bridges, parking area, institution, industry, arboretum.

Practical

Economic analysis of tourism components- case study of some important ecotourism destinations. Preparation, planning and designing of recreation parks, thematic parks, practice on topiary, arboriculture, preparation of planting pattern for avenue planting, national highways and village roads.

Suggested Readings

Baker CP. 1996. *World Travel: A Guide to Intenational Eco Journeys*.

Warner Books.

Honey M. 1998. *Ecotourism and Sustainable Development*. Iceland Press.

Luck M & Kirstges T. 2002. *Global Ecotourism Policies and Case Studies*.

Channel View Publ.

Neale G. 1999. *Green Travel Guide*. Earth Scan.

FBM-512 Forest management technology (1+0)

Theory

Introduction to Forest Management Technology. Post plantation operations. Thinning out, integrated crop, disease, pest weed and fire management in plantation. Agro-forestry and

farm forestry. Managing tree, crop and/ or animals at interface. Growth hormones, precision farming, organic farming in forestry. and micro-irrigation. Biotechnology for forest business. Sustained Yield, Volume of crops. Growth and yield of stands Stand Structure. Stand density. Site quality. Yield tables. Measurement of sawn timbers and logs. Stand tables Yield and growth modeling. Definition. Object and kinds of forest enumerations. Sampling techniques. Organization and conduct of enumeration. Point Sampling Concepts and principles and uses of point sampling. Instruments used.

Suggested Readings

- Dwivedi A.P. 1993. A textbook of Silviculture, IBD Rajpur Road, Dehradun. Pp. 305
- Anoop EV 1971. Timber Identification manual, FRI, Dehradun
- Nair P.K.R. 1993. An Introduction to Agroforestry. Klgwer Academic Publishers
- Nautiyal JC. 1988. *Forest Economics - Principles and Applications*. Natraj Publ.
- Upton M. 1976. *Agricultural Production and Resource Use*. Oxford Univ. Press.