

ICAR VTH DEANS' FORESTRY SYLLABUS NAU, NAVSARI**B.Sc.(Hons.) Forestry****Department-wise Courses in B.Sc. (Hons) Forestry**

C. Code	Course Title	Credit Hrs.
Department of Silviculture & Agroforestry (SAF)		
SAF 1.1	Introduction to Forestry	2+0
SAF 1.2	Introduction to Agronomy and Horticulture	2+1
SAF 2.3	Principles of Silviculture	2+1
SAF 3.4	Principles of Agroforestry	2+1
SAF 3.5	Forest Mensuration	2+1
SAF 3.6	Rangeland and livestock management	1+1
SAF 4.7	Forest Inventory and Yield Prediction	1+1
SAF 4.8	Silviculture of Indian Trees	2+1
SAF 5.9	Practices of Silviculture	2+1
SAF 6.10	Forest Extension & Community Forestry	2+1
SAF 6.11	Recreation & Urban Forestry	1+1
SAF 6.12	Plantation Forestry	2+1
SAF 8.13	Agroforestry Systems and Management	1+1
	Total	22+12 = 34
Department of Forest Biology & Tree Improvement (FBT)		
FBT 2.1	Dendrology	2+1
FBT 3.2	Wildlife Biology	2+1
FBT 3.3	Forest Ecology & Biodiversity Conservation	2+1
FBT 3.4	Forest Genetics & Tree Improvement	2+1
FBT 3.5	Forest Ecophysiology	1+1
FBT 4.6	Ornithology & Herpetology	2+1
FBT 4.7	Seed Technology & Nursery Management	2+1
FBT 8.8	Forest Biotechnology	2+1
FBT 8.9	Wildlife Management	1+1
	Total	16+9 = 25
Department of Forest Products & Utilisation (FPU)		
FPU 2.1	Wood Anatomy	1+1
FPU 4.2	Wood Products & Utilization	2+1
FPU 4.3	Ethnobotany and MAPs	2+1
FPU 4.4	Logging and Ergonomics	1+1
FPU 4.5	Non-Timber Forest Products	2+1
FPU 5.6	Wood Science and Technology	2+1
FPU 6.7	Marketing and Certification of Forest Products	1+1
	Total	11+7= 18
Department of Natural Resource Management (NRM)		
NRM 1.1	Fundamentals of Geology & Soil Science	2+1
NRM 1.2	Environmental Studies and Disaster Management	2+1
NRM 2.3	Forest Protection	2+1
NRM 2.4	Soil Biology & Fertility	2+1
NRM 3.5	Forest Survey & Engineering	2+1
NRM 5.6	Agrometeorology and Climate Change	2+1
NRM 5.7	Forest Management	2+1
NRM 5.8	Principles of Economics and Marketing	2+1

NRM 5.9	Restoration of Degraded Lands	1+1
NRM 6.10	Forest Laws, Legislation and Policies	2+0
NRM 6.11	Geomatics-Remote Sensing & GIS	1+1
NRM 6.12	Forest Hydrology and Watershed Management	2+1
	Total	22+11 = 33
Department of Basic Science & Humanities (BSH)		
BSH 1.1	Information & Communication Technology	1+1
BSH 1.2	Introductory Botany *	1+1*
BSH 1.3	Communication Skills and Personality Development	1+1
BSH 1.4	Plant Physiology	2+1
BSH 2.5	Basic Mathematics*	2+0 *
BSH 2.6	Plant Biochemistry	1+1
BSH 2.7	Statistical Methods and Experimental Techniques	2+1
BSH 2.8	Principles of Plant Cytology and Genetics	2+1
BSH 6.9	Entrepreneurship Development and Business Management	1+1
BSH 8.10	Forest Tribology & Anthropology	2+0
BSH 8.11	Agricultural Informatics	1+1
	Total	16+9 = 25

Forestry Student READY Programme (FRP)		
FRP 4.1	Study Tour of State Forest	0+1
FRP 5.2	Experiential Learning (Forest Nursery)	0+5**
FRP 5.3	Experiential Learning (Apiculture)	0+5**
FRP 6.4	Experiential Learning (Forest Nursery)	0+5**
FRP 6.5	Experiential Learning (Apiculture)	0+5**
FRP 7.6	Forestry Work Experience	0+20
FRP 7.6.1	Attachment with forest department- 8 Weeks	10 (0+10)
FRP 7.6.2	Industry /NGO Attachment- 3 weeks	4(0+4)
FRP 7.6.3	Socio-economic Surveys and Village Attachment- 2 weeks	3(0+3)
FRP 7.6.4	Weapon Training and First-Aid Training -1 week	1(0+1)
FRP 7.6.5	Report Writing & Presentation-1 week	2 (0+2)
FRP 7.7	All India Study Tour (3 weeks)	0+3
FRP 8.8	Project Work & Dissertation	0+10
	Total	0+44 = 44
NCC/NSS		
NNP 1.1	NCC/NSS	0+1*
NNP 2.2	NCC/NSS	0+1*
NNP 3.3	NCC/NSS	0+1*
NNP 4.4	NCC/NSS	0+1*
NNP 5.5	NCC/NSS	0+1*
NNP 6.6	NCC/NSS	0+1*
	Total	0+6 = 6
	Grand Total	87+98 = 185
	Non credit courses (NNP, BSH 1.2 and BSH 2.5)	3+7= 10
	Total credit courses	84 +91=175

* Non credit courses (Non grade)

** In ELP any one model will be opted.

**M.Sc. Forestry Courses as per
BSMA (2009) and Nomenclature as per V Dean's**

Compulsory Core Courses for all the disciplines of Forestry

S. N.	Course No.	Title	Credit
1.	FOR 501	Silviculture	2 (2+0)
2.	FOR 502	Forest Biometry	2 (1+1)
3.	FOR 503	Forest Management	2 (2+0)
4.	FOR 504	Forest Products - Chemistry and Industries	3 (2+1)
5.	FOR 505	Forest Ecology and Biodiversity Conservation	3 (2+1)
6.	FOR 506	Forest Resource Management and Economics	2 (1+1)
7.	FOR 507	Forest Protection	2 (1+1)
8.	FOR 508	Forest Policy and Laws and International Conventions	2 (2+0)
9.	FOR 509	Tree Improvement	2 (1+1)
10.	FOR 510	Forests and People	2 (2+0)
11.	FOR 591	Master Seminar	1 (1+0)
12.	FOR 599	Master Research	20 (0+20)

Compulsory Supporting Courses for all the disciplines of Forestry

S.N.	Course No.	Title	Credit
1.	FOR 511	Computer Application and Information Technology	1 (0+1)
2.	FOR 512	Remote Sensing and Geographic Information System	2 (1+1)
3.	FOR 513	General Statistical Methods and Research Methodology	2 (1+1)

Specialization Courses of Silviculture and Agroforestry

Degree Nomenclature: M.Sc. Forestry (Silviculture and Agroforestry)

S.N.	Course No.	Title	Credit
1.	SAF 521	Agroforestry Systems	3 (2+1)
2.	SAF 522	Soil and Water Management in Agroforestry	2 (1+1)
3.	SAF 523	Crops and Animals Production Management in Agroforestry	3 (2+1)
4.	SAF 524	Fruit Plants, Trees and Shrubs for Agroforestry	3 (2+1)
5.	SAF 525	Economics of Agroforestry Systems	3 (2+1)
6.	SAF 526	Rangeland and Pasture Management	2 (2+0)
7.	SAF 527	Seed Collection, Storage and Testing	3 (2+1)
8.	SAF 528	Modern Nursery Technology	2 (1+1)
9.	SAF 529	Nutrient and Weed Management in Nursery and Plantation	3 (2+1)
10.	SAF 530	Management of Insect-Pests and Diseases	2 (1+1)
11.	SAF 531	Energy Plantations and Bio-Fuels	2 (1+1)
12.	SAF 532	Plantation Forestry	3 (2+1)

Specialization Courses of Forest Biology and Tree Improvement			
Degree Nomenclature: M.Sc. Forestry (Forest Biology and Tree Improvement)			
S.N.	Course No.	Title	Credits
1.	FBT 521	Breeding Methods in Forest Trees	3 (2+1)
2.	FBT 522	Reproductive Biology of Forest Trees	3 (2+1)
3.	FBT 523	Tree Seed Orchards	3 (2+1)
4.	FBT 524	Quantitative Genetics in Forest Tree Breeding	3 (3+0)
5.	FBT 525	Forest Genetic Diversity and Conservation	3 (3+0)
6.	FBT 526	Biotechnology Approaches in Forestry	3 (2+1)
7.	FBT 527	Plant Tissue Culture	3 (2+1)
8.	FBT 528	Molecular Biology	3 (2+1)
9.	FBT 529	Principles and Techniques of Genetic Engineering	3 (2+1)
10.	FBT 530	Environmental Pollutants and Biotechnology	2 (2+0)

Specialization Courses of Forest Products and Utilization			
Degree Nomenclature: M.Sc. Forestry (Forest Products and Utilization)			
S.N.	Course No.	Title	Credits
1.	FPU 521	Wood Identification	2 (0+2)
2.	FPU 522	Wood Chemistry	2 (1+1)
3.	FPU 523	General Properties of Wood	2 (1+1)
4.	FPU 524	Wood Seasoning and Preservation	3 (2+1)
5.	FPU 525	Paper & Pulp Technology	3 (2+1)
6.	FPU 526	Wood Modification and Composite Wood	3 (2+1)
7.	FPU 527	Basics of Plant Production and Breeding Techniques	3 (2+1)
8.	FPU 528	Medicinal Chemistry and Processing of Maps	3 (2+1)
9.	FPU 529	Biotechnological Approaches and Agrotechniques for MAP Species	3 (2+1)
10.	FPU 530	Improvement of Medicinal and Aromatic Plants	2 (1+1)
11.	FPU 531	Role of Medicinal and Aromatic Plants in Health Care Systems	2 (2+0)
12.	FPU 532	Study Tour	1 (0+1)
13.	FPU 533	Pharmacognosy of MAPS	2 (1+1)

Specialization Courses of Natural Resource Management			
Degree Nomenclature: M.Sc. Forestry (Natural Resource Management)			
S.N.	Course No.	Title	Credit
1.	NRM 521	Watershed Concepts, Project Formulation and Planning	3 (2+1)
2.	NRM 522	Applications of Remote Sensing and GIS in Watershed Management	2 (1+1)
3.	NRM 523	Watershed Hydrology and Resources Conservation	3 (2+1)
4.	NRM 524	Production System and Bio-Diversity in Watershed	4 (3+1)
5.	NRM 525	People's Participation and Impact Analysis in Watershed Management	3 (2+1)
6.	NRM 526	Introduction to Environmental Sciences	2 (2+0)

7.	NRM 527	Environmental Analytical Techniques	3 (2+1)
8.	NRM 528	Environmental Impact Assessment	3 (2+1)
9.	NRM 529	Forest Resource Analysis	3 (3+0)
10.	NRM 530	Production Management of Nursery and Plantation Forestry	3 (2+1)
11.	NRM 531	Project Planning, Monitoring and Evaluation	3 (2+1)
12.	NRM 532	Farm Management	3 (3+0)

Specialization Courses of Wildlife Science			
Degree Nomenclature: M.Sc. Forestry (Wildlife Science)			
S.No.	Course No.	Title	Credits
1.	ET 521	Ecotourism - Concepts and Modern Approaches	4 (2+2)
2.	ET 522	Ecosystems of the World	2 (2+0)
3.	ET 523	Ecotourism in Protected Areas	3 (2+1)
4.	ET 525	Economics of Ecotourism	3 (2+1)

Ph.D. Forestry courses

Compulsory Core Courses for all the disciplines of Forestry

S. N.	Course No.	Title	Credit
1.	FOR 601	Quantitative Silviculture	3 (2+1)
2.	FOR 602	Advances in Tree Improvement	3 (2+1)
3.	FOR 603	Advances in Wood and Non-Wood Forest Products	3 (3+0)
4.	FOR 604	Advances in Economic Analysis in Forestry	2 (2+0)
5.	FOR 605	Agroforestry Systems and Management	2 (1+1)
6.	FOR 606	Forestry Interventions for Environment Amelioration	2 (1+1)
7.	FOR. 691	Doctoral Seminar- I	1 (1+0)
8.	FOR. 692	Doctoral Seminar- II	1 (1+0)
9.	FOR. 699	Doctoral Research	45 (0+45)

Optional/Supporting courses for all the disciplines of Forestry

S. N.	Course No.	Title	Credit
1.	FOR 611	Operational Research in Forest Management	2 (1+1)
2.	FOR 612	Land Use Planning and Watershed Management	2 (2+0)
3.	FOR 613	Forest Ecological Modeling	2 (1+1)
4.	FOR 614	Advances in Forest Biometrics	2 (1+1)
5.	FOR 615	Climate Change and Forestry	2 (2+0)
6.	FOR 616	Information Technology in Forestry	2 (1+1)

Specialization courses of Silviculture and Agroforestry			
Degree Nomenclature: Ph.D. Forestry (Silviculture and Agroforestry)			
S.N.	Course No.	Title	Credit
1.	SAF 621	Advances in Silviculture	2 (1+1)
2.	SAF 622	Plantation Forest Productivity	2 (1+1)
3.	SAF 623	Forest Regeneration	2 (1+1)
4.	SAF 624	Ecology of Forest Farming	2 (2+0)
5.	SAF 625	Advances in Forest Soil Management	3 (2+1)
6.	SAF 626	Land Use Planning and Watershed Management	2 (2+0)
7.	SAF 627	Forest Seed Management	2 (1+1)
8.	SAF 628	Advances in Agroforestry Research and Management	2 (2+0)
9.	SAF 629	Productivity of Agroforestry Systems	3 (2+1)
10.	SAF 630	Land Use Planning and Watershed Management	2 (2+0)
11.	SAF 631	Advanced Agroforestry Management Analyses	3 (2+1)
12.	SAF 632	Advances in Soil and Water Management in Agroforestry	3 (2+1)

Specialization Courses of Forest Biology and Tree Improvement			
Degree Nomenclature: Ph.D. Forestry (Forest Biology and Tree Improvement)			
S.N.	Course No.	Title	Credit
1.	FBT 621	Advances in Forest Genetics and Tree Breeding	2 (1+1)
2.	FBT 622	Advances in Quantitative Forest Genetics	3 (2+1)
3.	FBT 623	Advances in Forest Reproductive Biology	3 (2+1)
4.	FBT 624	Molecular Genetics of Forest Trees	3 (2+1)
5.	FBT 625	Genetics of Forest Ecosystems	2 (2+0)
6.	FBT 626	Advances in Forest Biotechnology	3 (2+1)
7.	FBT 627	Molecular Genetics and Gene Mapping in Forest Trees	3 (2+1)
8.	FBT 628	Intermediary Metabolisms	3 (2+1)
9.	FBT 629	Molecular Biochemistry	3 (2+1)
10.	FBT 630	Tree Physiology and Forest Productivity	3 (2+1)
11.	FBT 631	Genetic Engineering and Bioinformatics	3 (2+1)

Specialization Courses of Forest Products and Utilization			
Degree Nomenclature: Ph.D. Forestry (Forest Products and Utilization)			
S.N.	Course No.	Title	Credits
1.	FPU 621	Advances in Wood Technology	3 (2+1)
2.	FPU 622	Energy and Chemicals from Wood	3 (2+1)
3.	FPU 623	Research Methods	3 (1+2)
4.	FPU 624	Advances in Wood Modification	3 (2+1)
5.	FPU 625	Application of Traditional Knowledge	2 (2+0)
6.	FPU 626	Quality Improvement of Medicinal and Aromatic Plants	3 (2+1)
7.	FPU 627	Post Harvest and Processing of Medicinal and Aromatic Plants	3 (2+1)
8.	FPU 628	Biosynthetic Analysis of Secondary Metabolites	3 (3+0)
9.	FPU 629	Processing and Value Addition in MAP	3 (2+1)

Specialization courses of Natural Resource Management			
Degree nomenclature: Ph.D. Forestry (Natural Resource Management)			
S.N.	Course No.	Title	Credit
1.	NRM 621	Advanced Econometrics	3 (2+1)
2.	NRM 622	Natural Resource Economics	2 (2+0)
3.	NRM 623	Advanced in Soil and Water Conservation	3 (2+1)
4.	NRM 624	Forest Economics	2 (1+1)
5.	NRM 625	Project Planning and Evaluation	2 (1+1)
6.	NRM 626	Watershed Survey, Mapping and Structural Engineering Designs	3 (2+1)
7.	NRM 627	Global Climate Change	2 (2+0)
8.	NRM 628	Environmental Pollution	3 (3+0)
9.	NRM 629	Ecotourism in Protected Areas	3 (2+1)
10.	NRM 630	Ecotourism Landscaping	3 (2+1)
11.	NRM 631	Economics of Ecotourism	3 (2+1)
12.	NRM 632	Finance and Marketing Management of Forest Resources	3 (2+1)