Department of Silviculture & Agroforestry

College of Horticulture and Forestry
Acharya Narendra Deva University of Agriculture and Technology,
Kumarganj, Ayodhya – 224 229, U.P.

Brief History

The Department of Forestry was initiated during the year of 1987-88. Later on the department was converted into non-plan scheme by the Government of Uttar Pradesh during the year 1990-91. After that, the name of the department has been changed as department of Silviculture & Agroforestry according to Academic Council meeting no. ANDUAT-02/277AC/2020/121 dated 06-06-2020. At, present the department of silviculture and agroforestry is running under the College of Horticulture and Forestry.

After the establishment of new departments, Master Degree (M. Sc.) was offered in 2009-2010 through Common Universities Entrance Test. The Department of Agroforestry offers admission in P.G. degree programme under the major discipline M.Sc. forestry with specialization in Agroforestry & Forest Ecology & Environment in between 2009-10 to 2012-13. Since 2020-21, the department was restarted M.Sc. Forestry & Ph. D. Forestry degree programme through common entrance test namely UPCATET respectively. The research is primarily focused on evaluation of different tree based agroforestry system on aspects of timber, fuel, fodder, fruit and environmental conservation. Nursery management techniques for different agroforestry species would also be developed.

Vision

- ❖ To promote excellence in education, research and extension in the field of forestry to cater the need of trained manpower for practicing sustainable forestry and increasing the forest cover.

Mission

- ➢ To provide a platform for wide spectrum of students to select forestry as a professional degree.
- ➢ To encourage interdisciplinary innovative research and dissemination of knowledge for improvement of livelihoods towards sustainable development.

Objectives

- To acquaint the students in the field of forestry for commercial cultivation of tree species.
- To develop different agroforestry models for rural livelihood support in eastern Uttar Pradesh and other parts of the country.
- To create a platform for National and International level learning of scientific advancement in field of forestry.

Faculty Profile:

S. No.	Name	Designation	Exp.	Publication	Specialization	Photo
1	Dr. Sanjay Kumar Verma	Assoc. Professor & Head	16	Research Papers – 20,	Forestry/ Agroforestry	

2	Dr. Ulman Yashmita Nitin	Assistant Professor	5.1	Research Papers – 25, Book Chapters – 04, Books – 01, Articles - 15	Forestry/ Agroforestry	
3	Dr. Devendra Kumar	Assistant Professor	1.5	Research Papers – 18 Articles – 06 02, Edited Books – 02	Forestry/ Agroforestry	
4	Dr. Shayma Parveen	Assistant Professor	1.5	Book Chapter – 03, Edited Book – 01, Article – 02, Research Papers - 18	Forestry/ Agroforestry	
5	Dr. Anjali Tiwari	Assistant Professor	1.5	Research Papers – 09, Poplar Articles – 04, Book – 01, Practical Manual – 02, Book Chapter – 01	Forestry/ Agroforestry	

Courses/ Degree Programme Offered in Forestry

- **B.Sc. (Hons.) Forestry** (Duration: 8 Sem , No. of Seats: 30)
  Eligibilty: 10+2 with PCM or PCB or PCMB or Inter Ag.

- **M.Sc. (Forestry) Silviculture & Agroforestry [**Duration: 4 Sem, No. of Seats: 15(3-ICAR)]
  Eligibilty: B.Sc. Forestry/ B.Sc. (Hons.) Forestry/ B.Sc. Hort./B.Sc. (Hons.) Hort./ B.Sc. (Ag.)/ B.Sc. (Hons.) Ag. (10+2+4 years degree)

- **Ph.D. (Forestry) Silviculture & Agroforestry** [Duration: 6 Sem, No. of Seats: 03 (1- ICAR)]
  Eligibility: M.Sc. Forestry/ Agroforestry/ Silviculture & Agroforestry (10+2+4+2 years degree)

B.Sc. (Hons) Forestry degree programme as per Vth Dean's Committee
Semester I (12+9=21 Credit Hours including 2 Non-Credit)

S. No.	Semester	No. of Course	Credit Hours
1	Semester I	11	21(12+9)
2	Semester II	9	22(13+9)
3	Semester III	9	23(14+9)
4	Semester IV	9	23(15+8)
5	Semester V	8	24(12+12)
6	Semester VI	8	22(11+11)
7	Semester VII	2	23(0+23)
8	Semester VIII	6	23(8+15)
	Total	**62**	**181 (85+96)**

Semester I (12+9=21 Credit Hours including 2 Non-Credit)

Sl. No.	Course Code	Course Name	Credit Hours
1	SAF 111	Introduction to Forestry	2(2+0)
2	SAF 112	Dendrology	3(2+1)
3	SAF 113	Introduction to Agronomy and Horticulture	3(2+1)
4	SAF 114	Geology & Soils	3(2+1)
5	SAF 115	Information and Communication Technology	2(1+1)
6	SAF 116	Communication Skills and Personality Development	2(1+1)
7	SAF 117	Plant Biochemistry	2(1+1)
8	SAF 118	Forest Botany**	2(1+1)
9	SAF 119	Basic Mathematics**	2(2+0)
10	PE 111 (F)	Physical Education-I	1(0+1)*
11	NSS 111(F)/ NCC 111(F)	NSS-I /NCC-I	1(0+1)*
		Total	**21(12+9)**
** Choose any one according to stream of 10+2/ Intermediate Science (Agriculture / Biology/Maths). *Non credit courses.			

Semester II (13+9=22 Credit Hours including 2 Non-Credit)

Sl. No.	Course Code	Course Name	Credit Hours
1	SAF 121	Plant Physiology	3(2+1)
2	SAF 122	Plant Cytology and Genetics	2(1+1)
3	SAF 123	Theory and Practice of Silviculture	3(2+1)
4	SAF 124	Wood Anatomy	3(2+1)
5	SAF 125	Wildlife Biology	3(2+1)
6	SAF 126	Forest Protection	3(2+1)
7	SAF 127	Statistical Methods & Experimental Designs	3(2+1)
8	PE 121 (F)	Physical Education-II	1(0+1)*
9	NSS 121(F)/ NCC 121(F)	NSS-II / NCC-II	1(0+1)*
		Total	**22(13+9)**

Semester III (14+9=23 Credit Hours including 2 Non-Credit)

Sl. No.	Course Code	Course Name	Credit Hours
1	SAF 211	Environmental Studies and Disaster Management	3(2+1)
2	SAF 212	Forest Survey & Engineering	3(2+1)
3	SAF 213	Soil Biology & Fertility	3(2+1)
4	SAF 214	Forest Ecology & Biodiversity	3(2+1)
5	SAF 215	Tree Improvement	3(2+1)
6	SAF 216	Principles of Agroforestry	3(2+1)
7	SAF 217	Forest Mensuration	3(2+1)
8	PE 211 (F)	Physical Education-III	1(0+1)*
9	NSS 211(F) / NCC 211(F)	NSS -III / NCC –III	1(0+1)*
		Total	**23(14+9)**

Semester IV (15+8=23 Credit Hours including 1 Non-Credit)

Sl. No.	Course Code	Course Name	Credit Hours
1	SAF 221	Forest Management	3(2+1)
2	SAF 222	Silviculture of Indian Trees	3(2+1)
3	SAF 223	Wood Products & Utilization	3(2+1)
4	SAF 224	Ethnobotany, Medicinal and Aromatic Plants	3(2+1)
5	SAF 225	Ornithology & Herpetology	3(2+1)
6	SAF 226	Seed Technology & Nursery Management	3(2+1)
7	SAF 227	Rangeland and Livestock Management	2(1+1)
8	SAF 228	Forest Tribology & Anthropology	2(2+0)
9	SAF 229	Study Tour of State Forest	1(0+1)*
		Total	**23(15+8)**

Semester V (12+12=24 Credit Hours)

Sl. No.	Course Code	Course Name	Credit Hours
1	SAF 311	Forest Hydrology and Watershed Management	3(2+1)
2	SAF 312	Climate Science	3(2+1)
3	SAF 313	Wood Science and Technology	3(2+1)
4	SAF 314	Logging and Ergonomics	2(1+1)
5	SAF 315	Forest Extension & Community Forestry	3(2+1)
6	SAF 316	Entrepreneurship Development & Business Management	2(1+1)
7	SAF 317	Forest Economics and Marketing	3(2+1)
8	FEL-I	Experiential Learning-I	5(0+5)
		Total	**24(12+12)**

Semester VI (11+11=22 Credit Hours)

Sl. No.	Course Code	Course Name	Credit Hours
1	SAF 321	Plantation Forestry	2+1
2	SAF 322	Forest Laws, Legislation and Politics	2+0

3	SAF 323	Geomatics	1+2
4	SAF 324	Recreation & Urban Forestry	1+1
5	SAF 325	Restoration Ecology	1+1
6	SAF 326	Non-Timber Forest Products	2+1
7	SAF 327	Certification of Forest Products	2+0
8	FEL-II	Experiential Learning-II	0+5
		Total	**22(11+11)**

Semester VII (0+23=23 Credit Hours including 3 Non-Credit)

Sl. No.	Course Code	Course Name	Credit Hours
1	FOWE 411	Forestry Work Experience	20(0+20)
2	AST 411	All India Study Tour	3(0+3)*
		Total	**23(0+23)**

Semester VIII (8+15=23 Credit Hours)

Sl. No.	Course Code	Course Name	Credit Hours
1	SAF 421	Forest Inventory and Yield Prediction	2(1+1)
2	SAF 422	Forest Biotechnology	3(2+1)
3	SAF 423	Agroforestry Systems and Management	3(2+1)
4	SAF 424	Wildlife Management	2(1+1)
5	SAF 425	Agricultural Informatics	3(2+1)
6	PWD 421	Project Work & Dissertation	10(0+10)
		Total	**23(8+15)**
		Grand Total	**85+96=181**

PG degree programme in Forestry (Silviculture and Agroforestry) as per BSMA Committee, 2021

Courses	Masters' Programme (Credit Hours)	Doctoral Programme (Credit Hours)
Major Courses	20	12
Minor Courses	08	06

Supporting Course (s)	06	05
Common Compulsory Courses	05	-
Seminar	01	02
Comprehensive Exam	-	Non Credit Course
Thesis/ Research	30	75
Total	**70**	**100**

M. Sc. Forestry (Silviculture and Agroforestry) Courses

Course Code	Course Title	Credit Hours
Major Course (Core Compulsory Courses)		
SAF 511(N)	Silviculture	3(2+1)
SAF 512(N)	Forest Biometry	2(1+1)
SAF 513(N)	Silvicultural Practices	2(1+1)
SAF 514(N)	Agroforestry Systems	3(2+1)
SAF 521(N)	Interactions in Agroforestry Systems	2(1+1)
Optional Courses		
SAF 515(N)	Modern Nursery Technologies	2(1+1)
SAF 516(N)	Plantation Forestry	3(2+1)
SAF 517(N)	Industrial Agroforestry	2(1+1)
SAF 522(N)	Climate Change and Conservation Silviculture	2(2+0)
SAF 523(N)	Trees and Shrubs for Agroforestry	2(1+1)
SAF 524(N)	Economics of Agroforestry Systems	3(2+1)
SAF 525(N)	Tree Seed Technology	3(2+1)
SAF 526(N)	Nutrient and Weed Management in Production Forestry	2(1+1)
SAF 527(N)	Crops and Live Stock Management in Agroforestry	2(2+0)
Seminar & Research		
SAF 591	M.Sc. Seminar	1(0+1)
SAF 599	M.Sc. Research	30 (0+30)

Ph.D. Forestry (Silviculture and Agroforestry) Courses

Course Code	Courses	Credit Hours
Major Courses (Core Compulsory Courses)		
SAF 611(N)	Quantitative Silviculture	3(2+1)
SAF 621(N)	Agroforestry Research and Management	3(2+1)
SAF 699	Doctoral Thesis Research	0+75
Optional Courses		
SAF 612(N)	Forest Stand Dynamics	1(1+0)
SAF 613(N)	Productivity and Evaluation of Agroforestry Systems	3(2+1)
SAF 614(N)	Forest Stand Management Techniques	2(1+1)
SAF 615(N)	Agroforestry for Ecosystem Services and Environmental Benefits	2(2+0)
SAF 622(N)	Plantation Forest Productivity	2(1+1)
SAF 623(N)	Restoration Forestry	1(1+0)
SAF 624(N)	Regeneration Silviculture	3(2+1)
SAF 625(N)	Forest Soil Management	2(1+1)
SAF 626(N)	Agroforestry for Sustainable Agriculture	1(1+0)
Seminars		
SAF 691	Doctoral Seminar	1+0
SAF 692	Doctoral Seminar	1+0
Supporting Course		
SAF 610(N)	Research Methodology in Forestry	3(2+1)

Non-Credit Compulsory Courses for M.Sc. and Ph.D.

S. No.	Course Code	Course Name	Credit Hours
1.	PGS 511	Library and Information Services	1(0+1)
2.	PGS 512	Basic Compacts in Laboratory Techniques	1(0+1)
3.	PGS 513 (e-course)	Agricultural Research, Research Ethics and Rural Development Programmes	1(1+0)

4.	PGS 521 (e-course)	Intellectual Property and its Management is Agriculture	1(1+0)
5.	PGS 522	Technical Writing and Communications Skills	1(0+1)

Research

S. No.	Name of the Project	Funding Agencies	PI/ Scientist	Starting Year	Fund (Lac.)	Status
1	AICRP on Agroforestry	ICAR-CAFRI, Jhansi	Dr. S. K. Verma and Dr. Anjali Tiwari	1987	148.95 (2017-2022)	Ongoing
2	Determination of bird assemblages and associated habitat characteristics in protected and unprotected wetlands of eastern Uttar Pradesh	Council of Science and Technology, U. P.	Dr. U. Y. Nitin	2021	31	Ongoing
3	Assessment of determinants of bird assemblages across rural urban gradient in and around selected cities of Uttar Pradesh	Science and Engineering Research Board	Dr. U. Y. Nitin	2023	9	Ongoing
4	People's Biodiversity Register Updation cum Verification	Uttar Pradesh State Biodiversity Board	Dr. U. Y. Nitin	2023	N.A.	Completed

Technology Transferred to the farmers:

Boundary Plantation of *Eucalyptus* and Teak

Eucalyptus and Teak attach significance in Ayodhya, Sultanpur and Barabanki districts as far as their plantation is concerned. The farmers of the above districts are very much adopting technology developed by our University that 2x2 m boundary plantation of *Eucalyptus* and Teak trees in standardized pits of the size 60 x 60 x 60 cm with pits mixture of soil, sand and FYM (2:2:1 ratio). In U.P. and other adjoining states, rice-wheat cropping system is very much prevalent and farmers are getting additional

***Eucalyptus* and *Tectona grandis* based agroforestry system**

economic value by adopting our technology i.e. boundary plantation of *Eucalyptus* and Teak. Therefore, inside area of these trees (boundary plantation), farmers have been very much adopted rice-wheat cropping system. Fertilizer viz., NPK (120:60:60 kg ha^{-1}) applied by the farmers in the cropping system (agriculture crop-paddy and wheat) covering 1 ha area. The farmers have got 30.50 quintal average paddy yield (economic value Rs. 62220) and 29.70 quintal wheat yield (economic value of Rs. 59845.00). After 9 years of boundary plantation of *Eucalyptus* comprising 200 plants. Through the *Eucalyptus* plantation, farmers have received the income of nearly Rs. 2,23,000. After 31 years of boundary plantation of Teak (*Tectona grandis*) comprising 200 plants. Through the Teak plantation, farmers have received the income of nearly Rs. 58,00,000. By adopting this technology, farmers are getting additional income. Moreover, fertility of the soil has also been improved up to some extent through the way of higher leaf litter falls & its decomposition, and more nutrient returns through litter fall as well as balancing of eco-friendly environment including expanding green cover**.**

Publications

Sl. No.	Year	Number of Publications	
		>5 NAAS	<5 NAAS
1	2017- 18	2	4
2	2018 - 19	2	5
3	2019 -20	1	3
4	2020 -21	2	1
5	2021 -22	4	3
6	2022 - 23	12	2
7	2023-24	4	0

Laboratory

Students acquainted during the practical classes

Students during the classes and exam

Other Activities

Seedlings Distribution at Meennagar village, DBD block

Turmeric Distribution at Meennagar village, DBD block

Wheat Seed Distribution at Meennagar village, DBD block

Farmer's Training at Sidhauna village

World Environment Day Celebration

Van Mahotsav Celebration

Conference and Seminar