

**National Education Policy-2020**

**Common Minimum Syllabus for Uttarakhand State Universities and  
Colleges**

**PROPOSED SYLLABUS OF FORESTRY**

**Effective from the academic session 2025-26  
of**

**Four Years Undergraduate Programme/  
Honours Programme/Master's in Forestry**

**DEPARTMENT OF FORESTRY**

**0EXPERT COMMITTEE**

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List of Papers (DSC, GE, AEC, SEC, VAC) with Semester wise Titles for ‘Forestry’					
Year	Semester	Course	Paper Title	Theory/ Practical	Credits
Undergraduate Certificate in Forestry					
FIRST YEAR	I	DSC	Introductory Forestry	Theory/Practical	3+1
		GE	Principles and Practices of Forestry	Theory/Practical	3+1
		AEC	Indian Language	Theory	2
		SEC	Nursery Technology (University Pool)	Theory	0+2
		VAC	Environmental Education	Theory	2
	II	DSC	Forest Ecology	Theory/Practical	3+1
		GE	Participatory Forest Management (University Pool)	Theory/Practical	3+1
		AEC	Indian Language	Theory	2
		SEC	Nursery Technology (University Pool)	Theory	0+2
		VAC	Environmental Education	Theory	2
Undergraduate Diploma in Forestry					
SECOND YEAR	III	DSC	Principles of Silviculture	Theory/Practical	3+1
		DSE/ GE	Forest Biodiversity and Conservation	Theory/Practical	3+1
		AEC	Indian Language	Theory	2
		SEC	Plantation Technology/IAPC (University Pool)	Theory	0+2
		VAC	Value addition to NTFP	Theory	2
	IV	DSC	Agroforestry	Theory/Practical	3+1
		DSE/ GE	Forest Protection	Theory/Practical	3+1
		AEC	Indian Language	Theory	2
		SEC	Plantation Technology/IAPC (University Pool)	Theory	0+2

		VAC	Value addition to NTFP'S	Theory	2
<b>Bachelor of Forestry</b>					
<b>THIRD YEAR</b>	V	DSC	Forest Mensuration	Theory/Practical	3+1
		DSE/GE	Watershed Management	Theory/Practical	3+1
		SEC	Propagation of Medicinal and Aromatic Plants/IAPC (University Pool)	Theory	0+2
	VI	DSC	Forest Management and Policies	Theory/Practical	3+1
		DSE/GE	Seed Science and Technology	Theory/Practical	3+1
		SEC	Propagation of Medicinal and Aromatic Plants/IAPC (University Pool)	Theory	0+2

Bachelor of Forestry with Honours					
FOURTH YEAR	VII	DSC	Advances in Forest Ecology	Theory/Practical	3+1
		DSE 1	Advances in Silviculture and Systems	Theory/Practical	3+1
		DSE 2	Remote Sensing and GIS	Theory/Practical	3+1
		DSE 3/	Forest Pathology	Theory/Practical	3+1
		GE 1	Environmental Audit and EIA	Theory/Practical	3+1
		GE 2	Forest Resource Assessment	Theory/Practical	3+1
		DISSERTATION	Dissertation on Major OR Dissertation on Minor or Academic Project/Entrepreneurship	Theory/Practical	4+2
	VIII	DSC	Forest Utilization	Theory/Practical	3+1
		DSE 1	Forest Entomology	Theory/Practical	3+1
		DSE 2	Advance Agroforestry	Theory/Practical	3+1
		DSE 3	Environmental Management	Theory/Practical	3+1
		GE1	Tree Physiology	Theory/Practical	3+1
		GE2	Dendrology	Theory/Practical	3+1
		DISSERTATION	Dissertation on Major OR Dissertation on Minor or AcademicProject/Entrepreneurship	Theory/Practical	4+2
Master's in Forestry					
FIFTH YEAR	IX	DSC	Forest Products and Industries	Theory/Practical	3+1
		DSE 1	Energy Plantation and Biofuels	Theory/Practical	3+1
		DSE 2	Natural Resources and Management	Theory/Practical	3+1
		DSE 3	Advances in Tree Seed Technology	Theory/Practical	3+1
		GE 1	World Forestry and Tribal development	Theory/Practical	3+1
		GE2	Analytical Technique	Theory/Practical	3+1
		DISSERTATION	Dissertation on Major OR	Theory/Practical	4+2

			Dissertation on Minor or Academic Project/Entrepreneurship		
	X	DSC	Forest Economics	Theory/Practical	3+1
		DSE 1	Research Methodology	Theory/Practical	3+1
		DSE 2	Biostatistics	Theory/Practical	3+1
		DSE 3	Forest Genetics and Tree Improvement	Theory/Practical	3+1
		GE1	Climate Change and Mitigation	Theory/Practical	3+1
		GE2	Fundamentals of Soil Science	Theory/Practical	3+1
		DISSERTATION	Dissertation on Major OR Dissertation on Minor or Academic Project/Entrepreneurship	Theory/Practical	4+2

**ABILITY ENHANCEMENT COURSE (AEC) PREPARED FOR THE POOL OF COURSES**

	<b>Paper Title</b>	<b>Theory/Practical</b>	<b>Credits</b>
Ability Enhancement Course (AEC)	Indian Language	Theory	2

**VALUE ADDITION COURSE (VAC) PREPARED FOR THE POOL OF COURSES**

	<b>Paper Title</b>	<b>Theory/ Practical</b>	<b>Credits</b>
Value Addition Course (VAC)	Environmental Education	Theory	2
Value Addition Course (VAC)	Non-Timber Forest Products	Theory	2

**SKILL ENHANCEMENT COURSES (SEC) PREPARED FOR THE POOL OF COURSES**

	<b>Paper Title</b>	<b>Theory/ Practical</b>	<b>Credits</b>
Skill Enhancement Courses (SEC)	Nursery Technology (University Pool)	Practical	0+2
Skill Enhancement Courses (SEC)/IAPC	Plantation Technology (University Pool)	Practical	0+2
Skill Enhancement Courses (SEC)/IAPC	Propagation of Medicinal and Aromatic Plants (University Pool)	Practical	0+2

**Abbreviations-**

**DSC-Discipline Specific Course; DSE-Discipline Specific Electives;**

**GE-Generic Electives; AEC-Ability Enhancement Course; VAC-Value Addition Course**

**IAPC- Internship/Apprentice/Project/Community outreach**



<b>Programme Specific Outcomes (PSOs) (Undergraduate Programme) After this programme, the learners will be able to:</b>	
<b>PSO 1</b>	It will impart basic knowledge and skills of forestry among the students.
<b>PSO 2</b>	It will inculcate forestry knowledge and practical skills among the students for diagnosis and analysis of existing problems in the fields of forestry and environment.
<b>PSO 3</b>	It will be helpful to produce trained forestry graduates to fill the requirements of different sectors, i.e., private, public, NGOs, and other organizations.
<b>PSO 4</b>	Assessment of various forestry problems and developing methods for their solutions.
<b>PSO 5</b>	Students will become forestry professionals and use their knowledge in research and technology.

<b>Programme Specific Outcomes (PSOs)-MASTER'S IN FORESTRY After this programme, the learners will be able to:</b>	
<b>PSO 1</b>	Students comprehend the numerous functions of forests, how to regenerate and conserve them, and how to prevent their destruction.
<b>PSO 2</b>	Students at an advanced level of knowledge in specific fields of forestry to continue graduate studies or meet professionals in various roles in the public and private sectors.

**Semester-I**  
**Undergraduate Certificate in Forestry**

**Value Addition (VAC)-Environmental Education**

**No. of Hours - 60**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

CourseTitle	Credits	Credit distribution of the Course			Eligibility criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/Practice		
VAC: <b>Environmental Education</b>	2	2	0	0	Passed Class XII	Nil

UNDERGRADUATE CERTIFICATE IN FORESTRY			
Programme: Undergraduate Certificate in Forestry		Year: I	Semester: I Paper: DSC
Subject: Forestry			
Course:VAC		CourseTitle:Environmental Education	
Course Outcomes: In this course, students will learn about the different aspects of environmental science, the current status of the environment, global warming, and sustainable development.			
Credits: 2		Discipline Specific Course	
Max. Marks: As Per Univ. rules		Min. Passing Marks: As per Univ. rules	
Unit	Topic		No. of Hours
Unit I	Introduction, definition and components- atmosphere, hydrosphere, lithosphere and biosphere. Natural resources and their management- Forest, wildlife, water, and land resources.		15
Unit II	Environmental pollution- Types of pollutants, control and prevention of air, water and noise pollution, Causes, source and control measures.		15

**Suggested reading:**

1. Ecology and Environment by P. D. Sharma
2. Environmental Laws and Policies in India by S. Devan
3. A Text Book of Environmental studies by D. K. Asthana and M. Asthana

**Semester-II**  
**Undergraduate Certificate in Forestry**

**Value Addition (VAC)-Environmental Education**

**No. of Hours - 60**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

CourseTitle	Credits	Credit distribution of the Course			Eligibility criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/Practice		
VAC: <b>Environmental Education</b>	2	2	0	0	Passed Class I semester	Nil

**UNDERGRADUATE CERTIFICATE IN FORESTRY**

UNDERGRADUATE CERTIFICATE IN FORESTRY			
Programme: Undergraduate Certificate in Forestry		Year: I	Semester: I
		Paper: DSC	
Subject: Forestry			
Course: VAC	Course Title:Environmental Education		
Course Outcomes: In this course, students will learn about the different aspects of environmental science, the current status of the environment, global warming, and sustainable development.			
Credits: 2			Discipline Specific Course
Max. Marks: As Per Univ. rules			Min. Passing Marks: As per Univ. rules
Unit	Topic		No. of Hours
Unit I	Acid rain; Global warming; Ozone layer depletion; Sewage and waste water management. Impact of different pollutions on humans and other organisms. Biological magnification; Toxins and Eutrophication. Causes of environmental degradation: Deforestation and anthropogenic pressure; Explosion of human population, ecological and economic issues; National and International conventions and summits and their major achievements;		15
Unit II	Environmental policy and legislation in Indian perspective; The Environment (Protection) Act 1986, The Water (Prevention and Control of Pollution) Act 1974, The Air (Prevention and Control of Pollution) Act 1981; Role of forest for sustainable environment		15

**Suggested reading:**

1. Ecology and Environment by P. D. Sharma
2. Environmental Laws and Policies in India by S. Devan
3. A Text Book of Environmental studies by D. K. Asthana and M. Asthana

**Semester-III**  
Undergraduate Diploma in Forestry

**Value addition Course (VAC) –Non-Timber Forest Products**

**No. of Hours - 60**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

CourseTitle	Credits	Credit distribution of the Course			Eligibility criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/Practice		
<b>VAC:</b> <b>Non-Timber Forest Products</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>Passed Class I year</b>	<b>Nil</b>

UNDERGRADUATE DIPLOMA IN FORESTRY			
Programme: Undergraduate Diploma in Forestry		Year: II	Semester: III Paper: VAC
Subject: Forestry			
Course: VAC	Course Title: <b>Non-Timber Forest Products</b>		
Course Outcomes: In this course student will learn about the different non-timber forest product, their use and techniques of extraction of such product from forest species.			
Credits:2		Discipline Specific Course	
Max. Marks: As Per Univ. rules		Min. Passing Marks: As per Univ. rules	
Unit	Topic		No. of Hours
Unit I	Non-timber forest produce, definitions, General survey, types, Economic importance; Mode of collection, trade and marketing.		15
Unit II	Major NTFP and their uses: Fiber and flosses, grasses, bamboo, canes, essential oils, oil seed, tans & dye, gum, resins, drugs, spices, edible and wild plants.		15

**Suggested Readings:**

1. Forests: The Non wood resources by A. P. Dwivedi
2. A hand book of Forest Utilization by T. Metha
3. Manual of Indian Forest Utilization by Trotter H. 1982
4. Forest Utilization by FRI, Dehradun
5. Forest Products and their Utilization by S. S. Negi

**Semester-IV**

**Undergraduate Diploma Forestry**

**Value addition Course (VAC) –Value addition to NTFPs**

**No. of Hours-60**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course Title	Credits	Credit distribution of the Course			Eligibility criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/Practice		
<b>VAC-Value addition to NTFPs</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>Passed Class III Semester</b>	<b>Nil</b>

**UNDERGRADUATE DIPLOMA IN FORESTRY**

UNDERGRADUATE DIPLOMA IN FORESTRY			
Programme: Undergraduate Diploma in Forestry		Year: II	Semester: IV Paper: VAC
Subject: Forestry			
Course: VAC	Course Title: Value addition to NTFPs		
Course Outcomes: In this course, the student will learn about the different non-timber forest product, their use and techniques of extraction of such products from forest species.			
Credits:2		Discipline Specific Course	
Max. Marks: As Per Univ. rules		Min. Passing Marks: As per Univ. rules	
Unit	Topic		No. of Hours
Unit III	Forest based industries: Pulp and paper industry, katha& cutch, and sports goods.		15
Unit IV	Regulation of international timber trade; World Trade Organization; GATT and International Timber Trade Organization (ITTO).		15

**Suggested Readings:**

1. Forests: The Non- wood resources by A. P. Dwivedi
2. A hand book of Forest Utilization by T. Metha
3. Manual of Indian Forest Utilization by Trotter H. 1982
4. Forest Utilization by FRI, Dehradun
5. Forest Products and their Utilization by S. S. Negi

