



TECHNO INDIA UNIVERSITY

W E S T B E N G A L

Course Structure

(AY: 2025-2026)

For

B.Sc. (Hons) Agriculture

**(ICAR 6th Deans' Committee Curriculum with
NEP 2020 dated April 20, 2024)**

**Department of Agriculture Sciences
Techno India University, West Bengal**

EM-4/1, Sector-V, Salt Lake, Kolkata-700091



Vision

The Department of Agriculture Sciences, Techno India University will be a *Centre of Excellence* in the field of Smart Agriculture & allied research including biotechnological, microbial, environmental, medical, and rural sectors. The department shall create graduates who endeavor for the welfare of mankind followed by agricultural innovations, skills, and creativity in the near future.

Mission

M01: To launch new academic value-added courses with viable technologies for the benefit of the students, rural and industrial fraternity.

M02: To create an awareness outreach towards socio-ethical implications of potentials of agricultural innovations & also to bridge the gap between academics and industry.

M03: Creation of skilled and smart agriculturists to help society to cope with new challenges.

M04: Creation of novel entrepreneurs for the upliftment of societal economy for all.

Programme Outcomes (POs):

Upon completion of the B.Sc. (Hons.) Agriculture programme under ICAR NEP-2020, graduates will be able to:

PO1: Discipline Knowledge: Demonstrate a comprehensive understanding of the fundamentals of agricultural science, including agronomy, genetics, soil science, plant protection, agricultural economics, and allied disciplines.

PO2: Skill Proficiency & Technical Competence: Acquire hands-on technical skills in modern agricultural practices, use of machinery, diagnostics of pests/diseases/weeds, water/soil management, and crop production, aligned to agro-ecological and local contexts.



PO3: Entrepreneurial and Business Acumen: Develop capabilities to conceive, plan, initiate, and manage agribusinesses or enterprises; prepare cost-benefit analyses; drive rural entrepreneurship.

PO4: Experiential Learning & Field Readiness: Apply classroom theory through field experiences: internships, industrial attachments, project work, on-farm learning, Student READY (Rural Entrepreneurship in Agriculture Development Yojana) etc., to become field-ready professionals.

PO5: Critical Thinking, Innovation, and Problem Solving: Analyze agricultural problems, design experiments, evaluate technologies, innovate solutions for improving productivity, sustainability, climate resilience and resource efficiency.

PO6: Digital, Data & Information Literacy: Use digital tools, information technologies, remote sensing/GIS etc., for decision support; understand and apply data-driven methods in agriculture.

PO7: Sustainability and Environmental Stewardship: Practice sustainable agriculture: conservation of soil & water, natural resource management, biodiversity conservation, use of organic inputs, and strategies to adapt to climate change.

PO8: Value Chains, Marketing & Agri-Business Integration: Understand post-harvest handling, value addition, supply chains, market linkages; ability to navigate economic, social and policy environment of agriculture.

PO9: Ethics, Professionalism & Social Responsibility: Uphold ethical standards, food safety, responsibility toward community and environment; sensitivity to rural livelihoods, agrarian contexts, social equity.

PO10: Lifelong Learning & Adaptability: Engage in continuous learning, adapt to emerging technologies and evolving agricultural challenges; flexibility to pursue higher studies, certifications, or change specializations.

PO11: Communication & Leadership: Communicate effectively (oral, written); lead teams in agricultural projects; liaise with farmers, extension agents, stakeholders; function well in team settings.

PO12: Global Perspective & Local Relevance: Contextualize agricultural knowledge and innovations within global frameworks (e.g. food security, climate change, international trade), while applying them with sensitivity to local agro-climatic, socio-economic conditions.

**Semester-I**

Course Code	Course Title				Credit
		L	T	P	
Theory					
TIU-CC-UAG-T11101	Fundamentals of Agronomy- Theory	2	0	0	2
TIU-CC-UAG-T11102	Fundamentals of Soil Science- Theory	2	0	0	2
TIU-CC-UAG-T11103	Fundamentals of Horticulture- Theory	2	0	0	2
TIU-CC-UAG-T11101	Rural Sociology and Educational Psychology	2	0	0	2
TIU-MDC-UAG-T11101	Farming Based Livelihood Systems- Theory	2	0	0	2
TIU-AEC-UAG-T11101	Communication Skills- Theory	1	0	0	1
Practical					
TIU-AEC-UAG-L11101	NSS	0	0	2	1
TIU-CC-UAG-L11101	Fundamentals of Agronomy-Lab	0	0	2	1
TIU-CC-UAG-L11102	Fundamentals of Soil Science-Lab	0	0	2	1
TIU-CC-UAG-L11103	Fundamentals of Horticulture-Lab	0	0	2	1
TIU-MDC-UAG-L11101	Farming Based Livelihood Systems-Lab	0	0	2	1
TIU-AEC-UAG-L11101	Communication Skills- Lab	0	0	2	1
TIU-SEC-UAG-L11101	Biofertilizer and Biopesticide Production	0	0	4	2
TIU-SEC-UAG-L11102	Mushroom Production Technology	0	0	4	2
Sessional					
-	-	-	-	-	-
Total		11	0	20	21
TIU-NG-UAG-T11101	NG: Induction-cum-Foundation Course (Deeksha Arambh)	1	0	0	1
TIU-NG-UAG-T11102	NG: Introductory Mathematics	1	0	0	1
Add-On	NG: Basics of Computer Application	1	0	0	1

**Semester-II**

Course Code	Course Title				Credit
		L	T	P	
Theory					
TIU-CC-UAG-T12101	Soil Fertility Management- Theory	2	0	0	2
TIU-CC-UAG-T12102	Fundamentals of Entomology- Theory	2	0	0	2
TIU-CC-UAG-T12103	Fundamentals of Plant Pathology- Theory	2	0	0	2
TIU-CC-UAG-T12104	Livestock and Poultry Management- Theory	1	0	0	1
TIU-VAC-UAG-T12101	Environmental Studies and Disaster Management- Theory	2	0	0	2
TIU-AEC-UAG-T12101	Personality Development- Theory	1	0	0	1
Practical					
TIU-AEC-UAG-L12101	NCC	0	0	2	1
TIU-CC-UAG-L12101	Soil Fertility Management- Lab	0	0	2	1
TIU-CC-UAG-L12102	Fundamentals of Entomology- Lab	0	0	2	1
TIU-CC-UAG-L12103	Fundamentals of Plant Pathology- Lab	0	0	2	1
TIU-CC-UAG-L12104	Livestock and Poultry Management- Lab	0	0	2	1
TIU-VAC-UAG-L12101	Environmental Studies and Disaster Management- Lab	0	0	2	1
TIU-AEC-UAG-L12101	Personality Development- Lab	0	0	2	1
TIU-SEC-UAG-L12101	Seed Production Technology	0	0	4	2
TIU-SEC-UAG-L12102	Post-Harvest Processing Technology	0	0	4	2
Sessional					
-	-	-	-	-	-
Total		11	0	20	21
Add-On	NG: Python Language	1	0	0	1

**Semester III**

Course Code	Course Title				Credit
		L	T	P	
Theory					
TIU-CC-UAG-T23101	Principles of Genetics -Theory	2	0	0	2
TIU-CC-UAG-L23101	Principles of Genetics- Lab	0	0	2	1
TIU-CC-UAG-T23102	Crop Production Technology-I (Kharif crops) -Theory	2	0	0	2
TIU-CC-UAG-L23102	Crop Production Technology-I (Kharif crops)- Lab	0	0	2	1
TIU-CC-UAG-T23103	Production Technology of Fruit and Plantation Crops -Theory	1	0	0	1
TIU-CC-UAG-L23103	Production Technology of Fruit and Plantation Crops - Lab	0	0	2	1
TIU-CC-UAG-T23104	Fundamentals of Extension Education-Theory	1	0	0	1
TIU-CC-UAG-L23104	Fundamentals of Extension Education- Lab	0	0	2	1
TIU-CC-UAG-T23105	Fundamentals of Nematology- Theory	1	0	0	1
TIU-CC-UAG-L23105	Fundamentals of Nematology-Lab	0	0	2	1
TIU-CC-UAG-T23106	Principles and Practices of Natural Farming-Theory	1	0	0	1
TIU-CC-UAG-L23106	Principles and Practices of Natural Farming-Lab	0	0	2	1
TIU-MDC-UAG-T23101	Entrepreneurship Development and Business Management	2	0	0	2
TIU-MDC-UAG-L23101	Entrepreneurship Development and Business Management	0	0	2	1
Practical					
TIU-AEC-UAG-L23101	Physical Education, First Aid and Yoga Practices	0	0	4	2
TIU-SEC-UAG-L23101	Beneficial Insect Farming	0	0	4	2
Sessional					
-	-	-	-	-	-
	Total	10	0	22	21
Add-On	NG: GIS & Remote Sensing	1	0	0	

**Semester-IV**

Course Code	Course Title				Credit
		L	T	P	
Theory					
TIU-CC-UAG-T24101	Crop Production Technology-II (Rabi Crops)-Theory	2	0	0	2
TIU-CC-UAG-L24101	Crop Production Technology-II (Rabi Crops)- Lab	0	0	2	1
TIU-CC-UAG-T24102	Basics of Plant Breeding-Theory	2	0	0	2
TIU-CC-UAG-L24102	Basics of Plant Breeding-Lab	0	0	2	1
TIU-CC-UAG-T24103	Production Technology of Vegetables and Spices- Theory	1	0	0	1
TIU-CC-UAG-L24103	Production Technology of Vegetables and Spices- Lab	0	0	2	1
TIU-CC-UAG-T24101	Principles of Agricultural Economics and Farm Management	2	0	0	2
TIU-CC-UAG-T24104	Farm Machinery and Power- Theory	1	0	0	1
TIU-CC-UAG-L24104	Farm Machinery and Power- Lab	0	0	2	1
TIU-CC-UAG-T24105	Water Management-Theory	1	0	0	1
TIU-CC-UAG-L24105	Water Management-Lab	0	0	2	1
TIU-CC-UAG-T24106	Problematic Soils and Their Management-Theory	1	0	0	1
TIU-CC-UAG-L24106	Problematic Soils and Their Management-Lab	0	0	2	1
TIU-VAC-UAG-T24101	Agri Informatics- Theory	2	0	0	2
TIU-VAC-UAG-L24101	Agri Informatics-Lab	0	0	2	1
Practical					
TIU-SEC-UAG-L24101	Horticulture Nursery Management	0	0	4	2
Sessional					
-	-	-	-	-	-
Total		12	0	18	21
Add-On	NG: Vertical Farming Systems	1	0	0	1

**Semester-V**

Course Code	Course Title				Credit
		L	T	P	
Theory					
TIU-CC-UAG-T35101	Fundamentals of Crop Physiology-Theory	2	0	0	2
TIU-CC-UAG-L35101	Fundamentals of Crop Physiology-Lab	0	0	2	1
TIU-CC-UAG-T35102	Pest Management in Crops and Stored Grains-Theory	2	0	0	2
TIU-CC-UAG-L35102	Pest Management in Crops and Stored Grains-Lab	0	0	2	1
TIU-CC-UAG-T35103	Diseases of Field & Horticultural Crops & their Management-Theory	2	0	0	2
TIU-CC-UAG-L35103	Diseases of Field & Horticultural Crops & their Management-Lab	0	0	2	1
TIU-CC-UAG-T35104	Introduction to Agro-meteorology-Theory	1	0	0	1
TIU-CC-UAG-L35104	Introduction to Agro-meteorology-Lab	0	0	2	1
TIU-CC-UAG-T35105	Crop Improvement - I-Theory	1	0	0	1
TIU-CC-UAG-L35105	Crop Improvement - I-Lab	0	0	2	1
TIU-CC-UAG-T35106	Weed Management-Theory	1	0	0	1
TIU-CC-UAG-L35106	Weed Management-Lab	0	0	2	1
TIU-CC-UAG-T35107	Ornamental Crops, MAPs and Landscaping-Theory	1	0	0	1
TIU-CC-UAG-L35107	Ornamental Crops, MAPs and Landscaping-Lab	0	0	2	1
TIU-CC-UAG-T35108	Introductory Agro-forestry-Theory	1	0	0	1
TIU-CC-UAG-L35108	Introductory Agro-forestry-Lab	0	0	2	1
TIU-MDC-UAG-T35101	Agricultural Marketing & Trade-Theory	2	0	0	2
TIU-MDC-UAG-L35101	Agricultural Marketing & Trade-Lab	0	0	2	1
Practical					
-	-	-	-	-	-
Sessional					
-	-	-	-	-	-



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	Total	13	0	18	22
TIU-NG-UAG-P35101	NG: Study Tour	2 weeks			2
Add-On	NG: Drone Technology in Agriculture	1	0	0	1

**Semester-VI**

Course Code	Course Title				Credit
		L	T	P	
Theory					
TIU-CC-UAG-T36101	Fundamentals of Agri Biotechnology-Theory	2	0	0	2
TIU-CC-UAG-L36101	Fundamentals of Agri Biotechnology-Lab	0	0	2	1
TIU-CC-UAG-T36102	Basic and Applied Agri Statistics-Theory	2	0	0	2
TIU-CC-UAG-L36102	Basic and Applied Agri Statistics-Lab	0	0	2	1
TIU-CC-UAG-T36103	Essentials of Plant Biochemistry-Theory	2	0	0	2
TIU-CC-UAG-L36103	Essentials of Plant Biochemistry-Lab	0	0	2	1
TIU-CC-UAG-T36104	Crop Improvement - II-Theory	1	0	0	1
TIU-CC-UAG-L36104	Crop Improvement - II-Lab	0	0	2	1
TIU-CC-UAG-T36105	Renewable Energy in Agriculture and Allied Sector-Theory	1	0	0	1
TIU-CC-UAG-L36105	Renewable Energy in Agriculture and Allied Sector-Lab	0	0	2	1
TIU-CC-UAG-T36106	Dryland Agriculture/ Rainfed Agriculture and Watershed Management-Theory	1	0	0	1
TIU-CC-UAG-L36106	Dryland Agriculture/ Rainfed Agriculture and Watershed Management-Lab	0	0	2	1
TIU-CC-UAG-T36107	Agricultural Microbiology and Phyto-remediation-Theory	1	0	0	1
TIU-CC-UAG-L36107	Agricultural Microbiology and Phyto-remediation-Lab	0	0	2	1
TIU-CC-UAG-T36108	Fundamentals of Seed Science & Technology-Theory	1	0	0	1
TIU-CC-UAG-L36108	Fundamentals of Seed Science & Technology-Lab	0	0	2	1
TIU-CC-UAG-T36109	Agricultural Finance & Cooperation-Theory	1	0	0	1
TIU-CC-UAG-L36109	Agricultural Finance & Cooperation-Lab	0	0	2	1



Practical					
-	-	-	-	-	-
Sessional					
-	-	-	-	-	-
	Total	12	0	18	21
Add-On	NG: AI & Data Science in Agriculture	1	0	0	1

**Semester-VII**

Course Code	Course Title				Credit
		L	T	P	
Theory					
TIU-EC-UAG-T47102	Hi-tech Horticulture-Theory	3	0	0	3
TIU-EC-UAG-L47102	Hi-tech Horticulture-Lab	0	0	2	1
TIU-EC-UAG-T47103	Protected Cultivation-Theory	3	0	0	3
TIU-EC-UAG-L47103	Protected Cultivation-Lab	0	0	2	1
TIU-EC-UAG-T47104	Climate Resilient Agriculture-Theory	3	0	0	3
TIU-EC-UAG-L47104	Climate Resilient Agriculture-Lab	0	0	2	1
TIU-EC-UAG-T47108	Bioformulation and Nano-formulation-Theory	3	0	0	3
TIU-EC-UAG-L47108	Bioformulation and Nano-formulation-Lab	0	0	2	1
TIU-EC-UAG-T47119	Food Safety and Standards-Theory	3	0	0	3
TIU-EC-UAG-L47119	Food Safety and Standards-Lab	0	0	2	1
	Total	15		10	20
List of Elective Courses					
	Geoinformatics and Remote Sensing for Precision Farming				
	Hi-tech Horticulture-Theory				
	Protected Cultivation-Theory				
	Climate Resilient Agriculture-Theory				
	Agri-Business Management				
	Commercial Plant Breeding				
	Food Safety and Standards				
	Bioformulation and Nano-formulation				
	Biopesticides and Biofertilizers				
	System Simulation and Agro-advisory				
	Management of Natural Resources				
	Agrochemicals				
	Agricultural Journalism				
	Biotechnology of Crop Improvement				
	Landscaping				
	Micro-propagation Technologies				
	Commercial Seed Production				
	Principles and Practices of Organic Farming/ Conservation Agriculture				



	Food Science and Nutrition				
	Post-Harvest Technology and Value Addition				
Practical					
-	-	-	-	-	-
Sessional					
-	-	-	-	-	-
	Total	15	0	10	20

Semester-VIII

Course Code	Course Title				Credit
		L	T	P	
Theory					
-	-	-	-	-	-
Practical					
TIU-P-I48101	Student READY (Rural Entrepreneurship in Agriculture Development Yozna) (Training / Industrial Attachment /Project Work /Internship)	0	0	40	20
Sessional					
-	-	-	-	-	-
	Total	0	0	40	20