

Course Structure of B.Sc. (Hons.) Agriculture as per ICAR 5th Dean Committee Recommendation

**ACADEMIC PROGRAMME
Semester wise course and credits Allocation**

S. No.	Course Title	Credit Hours	Total credit hours
First Year			
I Semester			
1	Fundamentals of Plant Biochemistry and Biotechnology	3(2+1)	18 (12+6) +3 ^{NG} +3 ^R
2	Introduction to Forestry	2(1+1)	
3	Comprehension and Communication Skills in English	2(1+1)	
4	Agricultural Heritage ^R	1(1+0) ^R	
5	Rural Sociology and Educational Psychology	2(2+0)	
6	Fundamentals of Agronomy	4(3+1)	
7	Fundamentals of Soil Science	3(2+1)	
8	Fundamentals of Horticulture	2(1+1)	
9	Human Values and Ethics ^{NG}	1(1+0) ^{NG}	
10	NSS/NCC/Physical Education and Yoga Practices ^{NG}	2(0+2) ^{NG}	
11	Introductory Mathematics ^R / Introductory Biology ^R	2(2+0) ^R / 2(1+1) ^R	
II Semester			
1	Fundamentals of Genetics	3(2+1)	24 (16+8)
2	Agricultural Microbiology	2(1+1)	
3	Soil and Water Conservation Engineering	2(1+1)	
4	Fundamentals of Crop Physiology	2(1+1)	
5	Fundamentals of Agricultural Economics	2(2+0)	
6	Fundamentals of Entomology	4(3+1)	
7	Fundamentals of Agricultural Extension Education	3(2+1)	
8	Fundamentals of Plant Pathology	4(3+1)	
9	Communication Skills and Personality Development	2(1+1)	
10	Educational Tour - I ^{NG}	1(0+1) ^{NG}	
Second Year			
III Semester			
1	Crop Production Technology – I (Kharif Crops)	2 (1+1)	23(14+9)
2	Fundamentals of Plant Breeding	3 (2+1)	
3	Agricultural Finance and Cooperation	3 (2+1)	
4	Agri-Informatics	2(1+1)	
5	Farm Machinery and Power	2 (1+1)	

6	Production Technology for Vegetables and Spices	2 (1+1)	
7	Environmental Studies and Disaster Management	3(2+1)	
8	Statistical Methods	2(1+1)	
9	Livestock and Poultry Management	4 (3+1)	
IV Semester			
1	Crop Production Technology –II (Rabi Crops)	2(1+1)	19 (11+8) +1 ^{NG} + 3 [#]
2	Production Technology for Ornamental Crops, MAP and Landscaping	2(1+1)	
3	Renewable Energy and Green Technology	2(1+1)	
4	Problematic Soils and Their Management	2(2+0)	
5	Production Technology for Fruit and Plantation Crops	2(1+1)	
6	Principles of Seed Technology	3(1+2)	
7	Farming System & Sustainable Agriculture	1(1+0)	
8	Agricultural Marketing Trade & Prices	3(2+1)	
9	Introductory Agro-meteorology & Climate Change	2(1+1)	
10	Elective Course [#]	3(2+1)	
11	Educational Tour – II ^{NG}	1(0+1) ^{NG}	
Third Year			
V Semester			
1	Principles of Integrated Pest and Disease Management	3(2+1)	21 (12+9) + 3 [#]
2	Manures, Fertilizers and Soil Fertility Management	3 (2+1)	
3	Pests of Crops and Stored Grain and their Management	3 (2+1)	
4	Diseases of Field and Horticultural Crops and their Management –I	3 (2+1)	
5	Crop Improvement-I (Kharif Crops)	2 (1+1)	
6	Entrepreneurship Development and Business Communication	2 (1+1)	
7	Geoinformatics and Nano-technology and Precision Farming	2 (1+1)	
8	Practical Crop Production – I (Kharif crops)	2 (0+2)	
9	Intellectual Property Rights	1(1+0)	
10	Elective Course [#]	3(2+1)	
VI Semester			
1	Rainfed Agriculture & Watershed Management	2(1+1)	21(11+10) + 3 [#]
2	Protected Cultivation and Secondary Agriculture	2(1+1)	
3	Diseases of Field and Horticultural Crops and their Management-II	3(2+1)	
4	Post-harvest Management and Value Addition of Fruits and Vegetables	2(1+1)	
5	Management of Beneficial Insects	2(1+1)	

6	Crop Improvement-II (Rabi crops)	2(1+1)	
7	Practical Crop Production –II (Rabi crops)	2(0+2)	
8	Principles of Organic Farming	2(1+1)	
9	Farm Management, Production & Resource Economics	2(1+1)	
10	Principles of Food Science and Nutrition	2(2+0)	
11	Elective Course [#]	3(2+1)	
Fourth Year			
VII Semester			
1	Student READY: Rural Awareness Work Experience (RAW) and Agro-Industrial Attachment (AIA)	20(0+20)	20
VIII Semester			
1	Student READY: Experiential Learning Program Module – I*	10(0+10)	20
2	Student READY: Experiential Learning Program Module – II*	10(0+10)	
		Grand Total	166 +12 [#] +3 ^R

R = Remedial; NG = Non-Gradual; # = Elective Course; * = ELP Course

#List of Elective Courses (One each in 4th, 5th & 6th Semester)

1	Agribusiness Management	3(2+1)
2	Agrochemicals	3(2+1)
3	Agricultural Journalism	3(2+1)
4	Landscaping	3(2+1)
5	Commercial Plant Breeding	3(2+1)
6	Food Safety and Standards	3(2+1)
7	Biopesticides & Biofertilizers	3(2+1)
8	System Simulation & Agro-Advisory	3(2+1)
9	Hi Tech Horticulture	3(2+1)
10	Protected Cultivation	3(2+1)
11	Micro-propagation Techniques	3(2+1)
12	Weed Management	3(2+1)

***List of Experiential Learning Modules**

1	Mushroom Cultivation Technology	10(0+10)
2	Commercial Beekeeping	10(0+10)
3	Soil, Plant, Water and Seed Testing	10(0+10)
4	Floriculture and Landscaping	10(0+10)

5	Poultry Production Technology	10(0+10)
6	Commercial Horticulture	10(0+10)
7	Organic Production Technology	10(0+10)
8	Seed Production and Technology	10(0+10)
9	Production Technology for Bioagents & Biofertilizer	10(0+10)
10	Agricultural Waste Management	10(0+10)
11	Commercial Sericulture	10(0+10)
12	Food Processing	10(0+10)

School of Agricultural Sciences
Master of Business Administration (Agribusiness Management)/MBA (ABM)

SCHEME OF THE PROGRAM: MBA (ABM)

First Semester			
Course Code	Course Title	Credits	Nature
ABM 501	Principles of management and organization behaviour	3	Major Course
ABM 502	Managerial Accounting and Control	3	Major Course
ABM 503	Applied Agribusiness Economics	2	Major Course
ABM 505	Production and operations management	2	Major Course
ABM 506	Agricultural and Food Marketing Management- I	2	Major Course
ABM 536	Strategic Management for Agri Business Enterprises	2	Supporting Course
ABM 537	Operations research	2	Supporting Course
PGS-501*	Library and Information Services	1	Non- Gradial Common Course
PGS-502*	Technical Writing and Communications Skills	1	Non- Gradial Common Course
Total Credit		16+2*	*NC: Non-gradial courses

Second Semester				
S. No.	Course Code	Course Title	Credits	Nature
1	ABM 504	Human Resource Management for Agricultural Organizations	2	Major Course
2	ABM 507	Agricultural and Food Marketing Management- II	2	Major Course
3	ABM 508	Agri Supply Chain Management	2	Major Course
4	ABM 509	International Trade for Agricultural Products	2	Major Course
5	ABM-539	Communication for Management and Business	3	Mandatory Courses for Summer Internship
6	ABM-540	Research Methodology for Agri Business Management	3	
7	ABM 538	Financial Management in Agri Business	2	Supporting Course
8	PGS-503*	Intellectual Property and its Management in Agriculture	1	Non- Gradial Common Course
9	PGS-504*	Basic Concepts in Laboratory Techniques	1	Non- Gradial Common Course

10	ABM 591	Master’s seminar	1	Master Seminar
	Total Credits		17+2*	*NC: Non-gradial courses
Summer Term				
	ABM-595	Summer Internship	4	Summer Internship / Industrial Attachment (04 to 06 Weeks), after Second Semester during the month of June & July.
Third Semester				
S. No.	Course Code	Course Title	Credits	Nature
1	ABM-541	Computer Applications for Agri Business	3	Mandatory Course for Research Project
2	ABM 542	Project Management and Agri Business Entrepreneurship	3	Mandatory Course for Research Project
3	ABM 543	Agribusiness Environment and Policy	2	Mandatory Course for Research Project
4	ABM 544	Agri Business Laws and Ethics	2	Mandatory Course for Research Project
5	PGS-505*	Agricultural Research, Research Ethics and Rural Development Programmes	1	Non- Gradial Common Course
6		Elective-1	2	Elective
7		Elective-2	2	Elective
8		Elective-3	2	Elective
9		Elective-4	2	Elective
10		Total Elective/Minor Courses	8	Minor/Elective
		Total Credits	18+1*	*NC: Non-gradial courses

Fourth Semester			
Course Code	Course Name	Credits	Nature
ABM 599	Project Work	10	Research Project

Basket of Elective Courses			
Course Code	Course Name	Credits	Nature
ABM 510	Food Technology and Processing Management	3	Elective Minor course
ABM 511	Rural Marketing	3	Elective Minor course
ABM 512	Fertiliser Technology and Management	3	Elective Minor course

ABM 513	Management of Agro-Chemical Industry	3	Elective Minor course
ABM 514	Seed Production Technology Management	3	Elective Minor course
ABM 515	Technology Management for Livestock Products	3	Elective Minor course
ABM 516	Fruit Production & Post Harvest Management	3	Elective Minor course
ABM 517	Farm Power & Machinery Management	2	Elective Minor course
ABM 518	Food Retail Management	2	Elective Minor course
ABM 519	Management of Agricultural Input Marketing	2	Elective Minor course
ABM 520	Feed Business Management	2	Elective Minor course
ABM 521	Management of Veterinary Hospitals	2	Elective Minor course
ABM 522	Poultry And Hatchery Management	2	Elective Minor course
ABM 523	Management Of Floriculture And Landscaping	2	Elective Minor course
ABM 524	Risk Management In Agri Business	2	Elective Minor course
ABM 525	Management Of Agri-Business Co-Operatives	2	Elective Minor course
ABM 526	Business Analytics for Agriculture	2	Elective Minor course
ABM 527	Dairy Business Management	1	Elective Minor course
ABM 528	Agri Extension Management	1	Elective Minor course
ABM 529	Renewable Energy Sources Management	1	Elective Minor course
ABM 530	Quality Management for Agri Business	1	Elective Minor course
ABM 531	Advertising And Brand Management	1	Elective Minor course
ABM 532	Agri Infrastructure and Warehousing Management	1	Elective Minor course
ABM 533	Contract Farming	1	Elective Minor course
ABM 534	Human Resource Competence And Capacity Building Systems	1	Elective Minor course
ABM 535	Agri Commodity Markets And Futures Trading	1	Elective Minor course
Requirement: students have to opt minimum 8 credits from above given elective courses			

Program Structure of M.Sc. Agriculture

SEMESTER I			SEMESTER II		
Subject Code	Subject	Credits	Subject Code	Subject	Credits
AGRON501	Modern Concepts in Crop Production	3	AGRON502	Principles and Practices of Water Management	3
AGRON503	Agronomy of Oilseed, Fibre and Sugar Crops	3	AGRON504	Agronomy of Fodder and Forage Crops	3
AGRON505	Cropping Systems and Organic Farming	3	AGRON506	Principles and Practices of Weed Management	3
AGRON507	Agronomy of Major Cereals and Pulses	3	STAT 502	Statistics Methods for Applied Sciences (Supporting I)	4
PGS 501	Library and Information Services	1		Minor-II	3
PGS 503	Intellectual Property and its management in agriculture	1	PGS 502	Technical Writing and Communications Skills	1
Minor-I	Minor-I	3	PGS 504	Basic concepts in laboratory techniques	1
AGRON599	Master's Research	5	AGRON599	Master's Research	5
TOTAL		22	TOTAL		23
SEMESTER III			SEMESTER IV		
Subject Code	Subject	Credits	Subject Code	Subject	Credits
PGS 505	Agricultural research, research ethics and rural development programmes	1	AGRON 599	Master's Research	10
AGRON591	Seminar	1			
AGRON599	Master's Research	10			
	Minor-III	3			
	Supporting-II	2			
TOTAL		17	TOTAL		10
Grand Total for M.Sc. Agriculture					72

M.Tech ENVIRONMENTAL ENGINEERING with sp. in ESG & Sustainability
Program Structure

SEMESTER I			SEMESTER II		
Subject Code	Subject	Credits	Subject Code	Subject	Credits
APS 1701	Air Pollution Science and Engineering	3	SHW 1702	Solid and hazardous waste management	3
WWT 1701	Water and wastewater treatment	3	EIA 1702	Environmental impact assessment	3
ELP 1701	Environmental law & policy	3	ESA 1702	Environmental sampling and analysis	3
FOS1701	Fundamentals of Sustainability	3	COE1702	Concept of ESG	3
SDC 1701	Sustainable Development & circular economy	3	ASC1702	Advances in sustainability Science & Engineering	3
			EEL 1702	Environmental Engineering lab	1
TOTAL		15	TOTAL		16
SEMESTER III			SEMESTER IV		
Subject Code	Subject	Credits	Subject Code	Subject	Credits
SIP 1703	Summer Internship	2	RPJ 1704	Research Project II	12
SSI 1703	Seminar on summer Internship	1			
RPJ1703	Research Project I	8			
TOTAL		11	TOTAL		12
Grand Total for M.Tech ENVIRONMENTAL ENGINEERING with sp. in ESG & Sustainability					54

M.Tech Health, Safety and Environment Program Structure

SEMESTER I			SEMESTER II		
Subject Code	Subject	Credits	Subject Code	Subject	Credits
EEM1701	Environmental Engineering & Management	3	TQM1702	TPM and TQM	3
FRC1701	Fire Risk and Control	3	SRR1702	Statutory Rules & Regulation	3
OHS1701	Occupational Health & Safety Management	3	SID 1702	Safety in Drilling	3
BBS1701	Behavioural Based Safety Management	3	ASD 1702	Advances in Sustainable Development	3
ESE 1701	Electrical Safety Engineering	3	SIC 1702	Safety in Construction	3
EEL 1501	Environment Engineering Lab	1	HRM 1702	Hazard Identification, Risk Analysis and Management	3
			SEL 1502	Safety Engineering Lab	1
			SMR 1702	Seminar I	1
TOTAL		16	TOTAL		20
SEMESTER III			SEMESTER IV		
Subject Code	Subject	Credits	Subject Code	Subject	Credits
ESG 1703	ESG and Sustainability	3	RPJ1704	Research Project II	16
CFS 1703	Concepts of Fire Safety in buildings, structures & Installations	3			
GDS 1703	Global Disaster Scenario and Types of Natural Disaster	3			
SID 1703	Safety in Industrial Operations & Design	3			
SEI 1703	Safety in Engineering Industry	3			
SIS 1703	Summer Internship	2			
SSI 1703	Seminar on summer Internship	1			
RP 1703	Research Project I	2			
FEL 1703	Fire Engineering Lab	1			
TOTAL		21	TOTAL		16
Grand Total for M.Tech Health, Safety and Environment					

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MBA ESG & Sustainability Management Program Structure

MBA SEM I		
Code	Paper Title	Total Credits
GMT 7703	Principles of Management and Organisational Behaviour	3
ECO 7748	Managerial Economics	3
FIN 7701	Accounting and Financial Analysis	3
MKT 7701	Marketing Management	3
DSC 7701	Statistical and Quantitative Methods	3
ITM 7701	Management Information System	3
IBS 7702	Business in Globalized Markets	3
GMT 7001	Managerial Communication	3
Total Credit		24
MBA SEM II		
Code	Paper Title	Total Credits
HRM 7701	Human Resource Management	3
SMT 7701	Business Policy and Corporate Strategy	3
DSC 7002	Research Methodology	3
FIN 7702	Financial Management and Planning	3
OPM 7701	Operations Management	3
ECO 7749	Macroeconomics: Theory and Policy	3
GMT 8503	Campus to Corporate	1
ENP 7701	Introduction to Entrepreneurship	3
GMT 7503	Community Service	2
ENV 8701	Environment and Disaster Management	2
Total Credit		26
MBA SEM III		

Code	Paper Title	Total Credits
FOS1701	Fundamentals of Sustainability	3
SDC 1701	Sustainable Development & circular economy	3
ESG 1703	ESG and Sustainability	3
ELP 1701	Environmental law & policy	3
WWT1701	Water and wastewater treatment	3
APS 1701	Air Pollution Science and Engineering	3
GMT 8501	Summer Internship	6
Core Credits		24

MBA SEM IV

Code	Paper Title	Total Credits
PROJ1701	Project	16

Certificate in ESG & Sustainability Program Structure

Trimister 1		Trimister 2	
Subject	Credits	Subject	Credits
Introduction to Sustainability	3	Sustainable Development & circular economy	3
Concept of ESG	3	Advances in sustainability Science & Engineering	3
Management of Natural Resources	3	Climate change and supply chain	3
Project -I		Project - II	
TOTAL	9	TOTAL	9