

MAHARASHTRA AGRICULTURE UNIVERSITIES

Revised Course Curriculum

(As per the recommendation of Vth Deans' Committee-ICAR New Delhi)

Undergraduate – B.Sc. (Hons) Agriculture

Semester wise Course Summary

Sem	Core courses	Common Courses	Remedial Courses	Non-gradual Courses	Elective Courses	RAWE	ELP	Total
I	17	--	3/5	4	--	--	--	24
II	19	2	--	3	--	--	--	24
III	19	5	--	--	--	--	--	24
IV	21	--	--	1	3	--	--	25
V	19	2	--	--	3	--	--	24
VI	20	--	--	--	3	--	--	23
VII	--	--	--	--	--	20	--	20
VIII	--	--	--	--	--	--	20	20
Total	115	9	3/5	8	9	20	20	184/ 186

B. Sc. (Hons) Agriculture
Semester wise Course Lay Out (Proposed)

Semester-I

Course No.	Courses	Credit		
		T	P	Total
A)	Core courses			
AGRO 111	Fundamentals of Agronomy-I	1	1	2
AGRO 112	Introductory Agro-meteorology and Climate change	1	1	2
AHDS 111	Livestock Production & Management	1	1	2
EXTN 111	Rural Sociology & Educational Psychology	2	0	2
HORT 111	Fundamentals of Horticulture	1	1	2
LANG 111	Comprehension & Communication Skills in English	1	1	2
MIBO 111	Introductory Microbiology	1	1	2
SSAC 111	Fundamentals of Soil Science	2	1	3
	Total Core Courses	10	7	17
B)	Remedial Courses (3 or 5 credit)			0
AGH 111	Agricultural Heritage ^{*1}	1	0	1
BIO 111	Introductory biology ^{*2}	1	1	2
MATH 111	Elementary Mathematics ^{*3}	1	1	2
	Sub total	3/4	0/1	3/5
C)	Non-Gradial Courses (4 credits)			0
HVE 111	Human Values & Ethics	1	0	1
DEG 111	Democracy, Elections and Good Governance	1	0	1
NCC 111/ NSS 111	NCC/ NSS **	0	1	1
PHEY 111	Physical Education and Yoga	0	1	1
	Sub total	2	2	4
	Total Credits (A+B+C)	15/16	9/10	24/26

* Remedial Courses (3/5 credit)

** Non-Gradial Courses (4 Credits)

*¹ Compulsory to all students

*² Students who have Biology in XII std are exempted

*³ Students who have MATH in XII std are exempted

** NCC or NSS

Semester –II

Course No.	Courses	Credit		
		T	P	Total
A)	Core Course			
AGRO-123	Fundamentals of Agronomy-II	1	1	2
BOT 121	Fundamentals of Crop Physiology	1	1	2
ECON 121	Fundamentals of Agricultural Economics	2	0	2
ENGG 121	Soil and Water Conservation Engineering	1	1	2
ENTO-121	Fundamentals of Entomology	1	1	2
EXTN 122	Fundamentals of Agricultural Extension Education	2	1	3
GPB 121	Fundamentals of Genetics	2	1	3
PATH 121	Fundamentals of Plant Pathology	2	1	3
	Total	12	7	19
B)	Non-Gradiual course			
FRST 121	Introduction to Forestry	1	1	2
EDNT 121	Educational Tour*	0	1	1
	Subtotal	1	2	3
C)	Common Course			
EXTN 123	Communication Skills and personality Developments	1	1	2
	Subtotal	1	1	2
	Total Credits (A+B+C)	14	10	24

* Educational Tour shall be organized after completion of Sem.II and before start of Sem.III

Semester-III

Course No.	Courses	Credit		
		T	P	Total
A)	Core Course			
AGRO 234	Crop Production Technology-I (Kharif crops)	1	1	2
AGRO 235	Rainfed Agriculture and Watershed Management	1	1	2
BIOCHM 231	Fundamentals of plant biochemistry and biotechnology	2	1	3
ENGG 232	Farm Machinery and Power	1	1	2
ENTO 232	Insect Ecology and Integrated pest Management	1	1	2
GPB 232	Fundamentals of Plant Breeding	1	1	2
HORT 232	Production Technology for Vegetables and Spices	1	1	2
PATH 232	Principles of Integrated Disease Management	1	1	2
STAT 231	Statistical Methods	1	1	2
	Subtotal	10	9	19
B)	Common Courses			
COMP 231	Agri- Informatics	1	1	2
ESDM 231	Environmental Studies and Disaster Management	2	1	3
	Subtotal	3	2	5
	Total Credits (A+B)	13	11	24

Semester IV

Course No.	Courses	Credit		
		T	P	Total
A)	Core Course			
AGRO 246	Crop Production Technology-II (Rabi crops)	1	1	2
AGRO 247	Farming System and Sustainable Agriculture	1	0	1
AGRO 248	Principles of Organic Farming	1	1	2
AHDS 242	Livestock Breeding and Nutrition	1	1	2
ECON 242	Agriculture Finance and Cooperation	2	1	3
ENGG 243	Renewable Energy and Green Technology	1	1	2
ENTO 243	Pest of Horticultural Crops and their Management	1	1	2
GPB 243	Principles of Seed Technology	1	2	3
HORT 243	Production Technology for Fruit and Plantation Crops	1	1	2
SSAC 242	Problematic Soils and their Management	1	1	2
	Subtotal	11	10	21
B)	Elective Courses (3 credits)			
ELE BOT 242	Micropropagation Technologies	1	2	3
ELE EXTN 244	Agricultural Journalism	2	1	3
ELE GPB 244	Commercial Plant breeding	1	2	3
ELE PATH 243	Bio-fertilizers, Bio-control Agents and Bio-pesticides	2	1	3
	Subtotal Elective	1	2	3
C)	Non-Gradiual Course			
EDNT 242	Study Tour*	0	1	1
	Total Credits (A+B+C)	12	13	25

* Educational Tour shall be organized after completion of Sem.IV and before start of Sem.V

Semester V

Course No.	Courses	Credit		
		T	P	Total
A)	Core Course			
AGRO 359	Practical Crop Production-I (Kharif crops)	0	1	1
AHDS 353	Technology of Milk and Milk Products.	1	1	2
BOT 353	Intellectual Property Right	1	0	1
ECON 353	Agricultural Marketing Trade and Prices	2	1	3
ENTO 354	Pests of Crops and Stored Grain and their Management- I	1	1	2
GPB 355	Crop Improvement – I (Kharif Crops)	1	1	2
HORT 354	Production Technology for Ornamental Crops, MAP and Landscaping	1	1	2
PATH 354	Diseases of Field and Horticultural Crops and their Management	2	1	3
SSAC 353	Manures, Fertilizers and Soil Fertility Management	2	1	3
	Subtotal	11	8	19
B)	Common Courses			
EXTN 355	Entrepreneurship Development and Business Communication	1	1	2
	Subtotal	1	1	2
C)	Elective Course (3 credits)			
AGRO 3510	Weed Management	2	1	3
ELE ECON 354	Agribusiness Management	2	1	3
ELE FST 351	Food Safety and Standards	2	1	3
ELE HORT 355	Protected Cultivation of Horticultural Crops	2	1	3
	Subtotal	2	1	3
	Total (A+B+C)	14	10	24

Semester VI

Course No.	Courses	Credit		
		T	P	Total
A)	Core Course			
AGRO 3611	Practical Crop Production-II (Rabi crops)	0	1	1
AGRO 3612	Geo-informatics and Nano-technology and Precision Farming	1	1	2
AHDS 364	Sheep Goat and Poultry Production	1	1	2
ECON 365	Farm Management, Production and Resource Economics	1	1	2
ENGG 364	Protected Cultivation and secondary Agriculture	1	1	2
ENTO 365	Management of Beneficial Insects	1	1	2
FST 362	Principles of Food Science and Nutrition	2	0	2
GPB 366	Crop Improvement – II (Rabi crops)	1	1	2
HORT 366	Post-harvest Management and Value Addition of Fruits and Vegetables	1	1	2
PATH 365	Diseases of Field and Horticultural Crops and their Management-II	2	1	3
	Subtotal	11	9	20
B)	Elective courses			
ELE AGM 361	System Stimulation and Agro-advisory	2	1	3
ELE HORT 368	Hi tech Horticulture	2	1	3
ELE HORTI 367	Landscaping	2	1	3
ELE SSAC 364	Agrochemicals	2	1	3
	Subtotal	2	1	3
	Total (A+B)	13	10	23

Semester VII

Student READY Programme

(Rural and Entrepreneurship Awareness Development Yojana)

RAWE & AIA Programme

Rural Agricultural Work Experience and Agro-Industrial Attachment

Sr. No.	Activities	Number of weeks	Credits
1	General orientation and on campus training by different faculties	1	14
2	Village attachment/ Unit attachment in Univ/College/KVK/ Research station	08	
3	Agro-Industrial Attachment	10	06
4	Project Report preparation, Presentation and Evaluation	01	
	Total weeks for RAWE and AIA	20	20

- **Agro- Industrial Attachment:** The students would be attached with the agro-industries for a period of 10 weeks to get an experience of the industrial environment and working

Semester VIII

Experiential Learning Modules

Sr. No.	Course No.	Credits	Course Title
1	ELM AGRO 4813	10(0+10)	Organic Farming Production Technology
2	ELM AGRO 4814	10(0+10)	Commercial production of organic inputs
3	ELM AHDS 485	10(0+10)	Poultry production
4	ELM AHDS 486	10(0+10)	Processing of Milk and Milk Product
5	ELM BOT 481	10(0+10)	Seed Production and Technology
6	ELM BOT 484	10(0+10)	Tissue Culture Techniques
7	ELM ENGG 485	10(0+10)	Natural Resources Management
8	ELM ENTO 486	10(0+10)	Mass Production of Bio-agents and Bio-pesticides
9	ELM ENTO 487	10(0+10)	Commercial Beekeeping
10	ELM ENTO 488	10(0+10)	Silkworm cocoon production technology
11	ELM FST 483	10(0+10)	Food Processing
12	ELM HORT 489	10(0+10)	Commercial Horticulture
13	ELM HORT 4810	10(0+10)	Floriculture and Landscaping Gardening
14	ELM HORT 4811	10(0+10)	Nursery Management of Horticultural Crops
15	ELM HORT 4812	10(0+10)	Commercial Vegetable Production
16	ELM HORT 4813	10(0+10)	Protected Cultivation of Flowers and Vegetables
17	ELM HORT 4814	10(0+10)	Post-harvest Management and Value Additions of Horticultural Crops
18	ELM PATH 486	10(0+10)	Mushroom Cultivation Technology
19	ELM PATH 487/ ELM SSAC 487	10(0+10)	Biofertilizer Production Technology
20	ELM SSAC 485	10(0+10)	Soil, Water, Plant and Fertilizer Analysis
21	ELM SSAC 486	10(0+10)	Agricultural Waste Management

This program will be undertaken by the students preferably during the eighth semester for a total duration of **24 weeks** with a weightage of **0+20** credit hours. The students will register for any of two modules, listed as above, of **0+10** credit hours each.

B. Sc. (Hons) Agriculture

Departmentwise list of courses

1) Agronomy

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	AGRO 111	2(1+1)	Fundamentals of Agronomy-I
2	I	AGRO 112	2(1+1)	Introductory Agro-meteorology and Climate change
3	II	AGRO 123	2(1+1)	Fundamentals of Agronomy-II
4	III	AGRO 234	2(1+1)	Crop Production Technology-I (Kharif crops)
5	III	AGRO 235	2(1+1)	Rainfed Agriculture and Watershed Management
6	IV	AGRO 246	2(1+1)	Crop Production Technology-II (Rabi crops)
7	IV	AGRO 247	1(1+0)	Farming System and Sustainable Agriculture
8	IV	AGRO 248	2(1+1)	Principles of Organic Farming
9	V	AGRO 359	1(0+1)	Practical Crop Production-I (Kharif crops)
10	V	ELE AGRO 3510	3(2+1)	Weed Management
11	VI	AGRO 3611	1(0+1)	Practical Crop Production-II (Rabi crops)
12	VI	AGRO 3612	2(1+1)	Geo-informatics and Nano-technology and Precision Farming
13	VIII	ELM AGRO 4813	10(0+10)	Organic Farming Production Technology
14	VIII	ELM AGRO 4814	10(0+10)	Commercial production of organic inputs

2) Genetics and Plant Breeding

Sr. No.	Semester	Course No.	Credits	Course Title
1	II	GPB 121	3(2+1)	Fundamentals of Genetics
2	II	BOT 121	2(1+1)	Fundamentals of Crop Physiology
3	III	GPB 232	2(1+1)	Fundamentals of Plant Breeding
4	IV	GPB 243	3(1+2)	Principles of Seed Technology
5	IV	ELE GPB 244	3(1+2)	Commercial Plant breeding
6	IV	ELE BOT 242	3(1+2)	Micropropagation Technologies
7	V	GPB 355	2(1+1)	Crop Improvement – I (Kharif Crops)
8	V	BOT 353	1(1+0)	Intellectual Property Right
9	VI	GPB 366	2(1+1)	Crop Improvement – II (Rabi crops)
10	VIII	ELM BOT 484	10(0+10)	Seed Production and Technology
11	VIII	ELM BOT 485	10(0+10)	Tissue Culture

3) Agril. Entomology

Sr. No.	Semester	Course No.	Credits	Course Title
1	II	ENTO 121	2(1+1)	Fundamentals of Entomology
2	III	ENTO 232	2(1+1)	Insect Ecology and Integrated pest Management
3	IV	ENTO 243	2(1+1)	Pest of Horticultural Crops and their Management
4	V	ENTO 354	2(1+1)	Pests of Crops and Stored Grain and their Management
5	VI	ENTO 365	2(1+1)	Management of Beneficial Insects
5	VIII	ELM ENTO 486	10(0+10)	Mass Production of Bioagents and Biopesticides
6	VIII	ELM ENTO 487	10(0+10)	Commercial Bee Keeping
7	VIII	ELM ENTO 488	10(0+10)	Silkworm Cocoon Production Technology

4) Horticulture

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	HORT 111	2(1+1)	Fundamentals of Horticulture
2	III	HORT 232	2(1+1)	Production Technology for Vegetables and Spices
3	IV	HORT 243	2(1+1)	Production Technology for Fruit and Plantation Crops
4	V	HORT 354	2(1+1)	Production Technology for Ornamental Crops, MAP and Landscaping
5	V	ELE HORT 355	3(2+1)	Protected cultivation
6	VI	HORT 366	2(1+1)	Post-harvest Management and Value Addition of Fruits and Vegetables
7	VI	ELE HORTI 367	3(2+1)	Landscaping
8	VI	ELE HORT 368	3(2+1)	Hi-tech Horticulture
9	VIII	ELM HORT 489	10(0+10)	Commercial Horticulture
10	VIII	ELM HORT 4810	10(0+10)	Floriculture and Landscaping Gardening
11	VIII	ELM HORT 4811	10(0+10)	Nursery Management of Horticultural Crops
12	VIII	ELM HORT 4812	10(0+10)	Commercial Vegetable Production
13	VIII	ELM HORT 4813	10(0+10)	Protected Cultivation of Flowers and Vegetables
14	VIII	ELM HORT 4814	10(0+10)	Post-harvest Management and Valise Additions of Horticultural Crops

5) Agricultural Economics

Sr. No.	Semester	Course No.	Credits	Course Title
1	II	ECON 121	2(2+0)	Fundamentals of Agricultural Economics
2	IV	ECON 242	3(2+1)	Agriculture Finance and Cooperation
3	V	ECON 353	3(2+1)	Agricultural Marketing Trade and Prices
4	V	ELE ECON 354	3(2+1)	Agribusiness Management
5	VI	ECON 365	2(1+1)	Farm Management, Production and Resource Economics

6) Agril. Extension Education

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	EXTN 111	2(2+0)	Rural Sociology & Educational Psychology
2	II	EXTN 122	3(2+1)	Fundamentals of Agricultural Extension Education
3	II	EXTN 123	2(1+1)	Communication Skills and personality Developments (Common Course)
4	IV	ELE EXTN 244	3(2+1)	Agricultural Journalism
5	V	EXTN 355	2(1+1)	Entrepreneurship Development and Business Communication (Common Course)

7) Agril. Engineering

Sr. No.	Semester	Course No.	Credits	Course Title
1	II	ENGG 121	2(1+1)	Soil and Water Conservation Engineering
2	III	ENGG 232	2(1+1)	Farm Machinery and Power
3	IV	ENGG 243	2(1+1)	Renewable Energy and Green Technology
4	VI	ENGG 364	2(1+1)	Protected Cultivation and secondary Agriculture
5	VIII	ELM ENGG 485	10(0+10)	Natural Resources Management

8) Plant Pathology

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	MIBO 111	2(1+1)	Introductory Microbiology
2	II	PATH 121	3(2+1)	Fundamentals of Plant Pathology
3	II	PATH 232	2(1+1)	Principles of Integrated Disease Management
4	IV	ELE PATH 243	3(2+1)	Bio-fertilizers, Bio-control Agents and Bio-pesticides
5	V	PATH 354	3(2+1)	Diseases of Field and Horticultural Crops and their Management – I
6	VI	PATH 365	3(2+1)	Diseases of Field and Horticultural Crops and their Management-II
7	VIII	ELM PATH 486	10(0+10)	Mushroom Cultivation Technologies

9) Soil Science and Agril. Chemistry

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	SSAC 111	3(2+1)	Fundamentals of Soil Science
2	IV	SSAC 242	2(1+1)	Problematic Soils and their Management
3	V	SSAC 353	3(2+1)	Manures, Fertilizers and Soil Fertility Management
4	VI	ELE SSAC 364	3(2+1)	Agrochemicals
5	VIII	ELM SSAC 485	10(0+10)	Soil, Water, Plant and Fertilizer Analysis
6	VIII	ELM SSAC 486	10(0+10)	Agricultural Waste Management
		Total		

10) Animal Husbandry and Dairy science

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	AHDS-111	1+1=2	Livestock Production and Management
2	IV	AHDS-242	1+1=2	Livestock Breeding and Nutrition
3	V	AHDS-353	1+1=2	Technology of Milk and Milk Products
4	VI	AHDS-364	1+1=2	Sheep, Goat and Poultry Production
5	VIII	ELM AHDS 485	10(0+10)	Poultry Production
6	VIII	ELM AHDS 486	10(0+10)	Processing of Milk and Milk Products
		Total		

11) Other courses

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	LANG 111	2(1+1)	Comprehension & Communication Skills in English
2	III	STAT 231	2(1+1)	Statistical Methods
3	III	BIOCHM 231	3(2+1)	Fundamentals of plant biochemistry and biotechnology
4	III	COMP 231	2(1+1)	Agri- Informatics (Common Courses)
5	III	EVS 231	3(2+1)	Environmental Studies and Disaster Management (Common Course)

Sr. No.	Semester	Course No.	Credits	Course Title
6	V	ELE FST 351	3(2+1)	Food Safety and Standards (Elective)
7	VI	FST 362	2(2+0)	Principles of Food Science and Nutrition
8	VI	ELE AGM 361	3(2+1)	System Stimulation and Agro-advisory
9	VIII	ELM FST 483	10(0+10)	Food Processing
		Total		

12) Common Courses

Sr. No.	Semester	Course No.	Credits	Course Title
1	III	EVS 231	3(2+1)	Environmental Studies and Disaster Management
2	II	EXTN 123	2(1+1)	Communication skills and personality Development
3	V	EXTN 355	2(1+1)	Entrepreneurship Development and Business Management
4	III	COMP 231	2(1+1)	Agri-Informatics
		Total	9(5+4)	

13) Elective Courses

Sr. No.	Semester	Course No.	Credits	Course Title
1	V	ELE AGRO 3510	3(2+1)	Weed Management
2	IV	ELE GPB 244	3(1+2)	Commercial Plant breeding
3	IV	ELE BOT 242	3(1+2)	Micropropagation Technologies
4	V	ELE HORT 355	3(2+1)	Protected cultivation
5	VI	ELE HORTI 367	3(2+1)	Landscaping
6	VI	ELE HORT 368	3(2+1)	Hi-tech Horticulture
7	V	ELE ECON 354	3(2+1)	Agribusiness Management
8	IV	ELE EXTN 244	3(2+1)	Agricultural Journalism
9	IV	ELE PATH 243	3(2+1)	Bio-fertilizers, Bio-control Agents and Bio-pesticides
10	VI	ELE SSAC 364	3(2+1)	Agrochemicals
11	V	ELE FST 351	3(2+1)	Food Safety and Standards
12	VI	ELE AGM 361	3(2+1)	System Stimulation and Agro-advisory
		Total		

14) Remedial Courses (3/4 credits)

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	AGH 111	1(1+0)	Agricultural Heritage* ¹
2	I	MATH 111	2(1+1)	Elementary Mathematics * ²
3	I	BIO 111	2(1+1)	Introductory biology * ³

*¹ Compulsory to all students

*² Students who have Biology in XII std are exempted

*³ Students who have MATH in XII std are exempted

15) Non-Gradiual Courses (8 credits)

Sr. No.	Semester	Course No.	Credits	Course Title
1	I	HVE 111	1(1+0)	Human Values & Ethics
2	I	DEG 111	1(1+0)	Democracy, Elections and Good Governance
3	I	NCC 111/ NSS 111/	1(0+1)	NCC/ NSS
4	I	PEY 111	1(0+1)	Physical Education and Yoga
5	II	FRST 121	2(1+1)	Introduction to Forestry
6	II	EDUT 121	1(0+1)	Educational Tour
7	IV	EDUT 242	1(0+1)	Educational Tour
		Total	8(3+5)	