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Criterion-2: Teaching- Learning and Evaluation

2.6. Student Performance and Learning Outcomes

2.6.1. Programme Outcomes (POs) and Course Outcomes (COs) for all programmes offered by the institution are stated and displayed on website



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Program Outcomes

Students graduating with the B.Sc. (Hons.) Agriculture degree should be able to

Programme Outcomes

PO1: Agriculture knowledge: Demonstrate knowledge and understanding in agriculture section: The breadth and depth of the profession of agriculture. Basic agriculture biology: taxonomy, anatomy, morphology, and physiology. The characteristics of the environment and their influence on plant growth and development. Current applications of agricultural principles and practices: propagation, pest management, production, maintenance, and business practices. Comprehensive knowledge of agricultural production.

PO2: Problem analysis: To demonstrate the ability to analyse data and draw appropriate statistical conclusions. To demonstrate the ability to communicate effectively both orally and in writing.

PO3: Development of solutions: To develop ability to analysing situations and constructing and selecting viable solutions for complex agricultural challenges, including pest managements, soil health and crop productivity.

PO4: Critical Thinking: Agriculture graduates will demonstrate the ability to critically analyze agricultural problems, assess evidence, evaluate alternative solutions, and make informed decisions to address complex agricultural challenges.

PO5: Effective Communication: Agriculture graduates will be able to effectively communicate agricultural concepts, research findings, and practices to diverse audiences through clear, concise, and professional written, verbal, and digital communication skills.

PO6: Social Interaction: Agriculture graduates will be able to collaborate effectively with peers, professionals, and communities, demonstrating strong interpersonal skills and cultural competence to promote sustainable agricultural practices and community development.

PO7: Effective Citizenship: Agriculture graduates will demonstrate a commitment to ethical practices, social responsibility, and environmental stewardship, actively contributing to the wellbeing of their communities and the agricultural industry.

PO8: Ethics: Agriculture graduates will be able to apply ethical principles and standards in agricultural practices, decision-making, and research, ensuring integrity, sustainability, and responsibility in their professional conduct.

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PO9: Environment and Sustainability: Agriculture graduates will demonstrate an understanding of ecological principles and sustainable agricultural practices, and will be able to implement strategies that promote environmental conservation and the sustainable use of natural resources in agricultural systems

PO10:Self-directed and Life-long Learning: Agriculture graduates will be equipped with the skills and motivation to engage in continuous self-improvement and professional development, staying updated with advancements in agricultural science and technology throughout their careers





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No	Course No.	Course Title	Credit (T+P)
	∗HORT 111	Fundamentals of Horticulture	2(1+1)
	CO1	Students will be aware of the garden tools and equipment.	
5	CO2	Students will be aware of the preparation of seed bed / nursery bed	
	CO3	Students will understand the concept of sexual method of propagation	
	CO4	Students will understand the concept of asexual method of propagation	
	CO5	Students will understand the basic concepts of Training and Pruning in fruit cr	ops 🖔
	LANG 111	Comprehension & Communication Skills in English	2(1+1)
	CO1	Students will comprehend conversations and speeches.	
6	CO2	Students will speak with clarity and confidence, thereby enhancing their emploskills.	yability
	CO3	Students will realize that selecting goal is a fundamental component to long-ter	·m
	CO4	Students will be more organized and disciplined.	111
D (8	CO5	Students will identify his/her creative self, and express effectively the same in v	writing.
	MIBO 111	Introductory Microbiology	2(1+1)
	CO1	Student will understand the basic microbial structure, function.	
7	CO2	Student will study the comparative characteristics of prokaryotes and euk	
a Se a			aryotes.
	CO3	The state of the s	
Se a	CO3	To know the various Physical and Chemical growth requirements of bact	
8-1	CO4 CO5	To know the various Physical and Chemical growth requirements of bact Impart knowledge about production of beneficial bacteria	
	CO4	To know the various Physical and Chemical growth requirements of bact Impart knowledge about production of beneficial bacteria. Student will understand Gram staining of bacteria Fundamentals of Soil Science	3(2+1)
	CO4 CO5 SSAC	To know the various Physical and Chemical growth requirements of bact Impart knowledge about production of beneficial bacteria. Student will understand Gram staining of bacteria	3(2+1)
3	CO4 CO5 SSAC 111	To know the various Physical and Chemical growth requirements of bact Impart knowledge about production of beneficial bacteria. Student will understand Gram staining of bacteria Fundamentals of Soil Science Demonstrate fundamental knowledge to identify problematic soils and asset	3(2+1) sociated
L	CO4 CO5 SSAC 111 CO1 CO2	To know the various Physical and Chemical growth requirements of bact Impart knowledge about production of beneficial bacteria. Student will understand Gram staining of bacteria Fundamentals of Soil Science Demonstrate fundamental knowledge to identify problematic soils and ass problems. Identify processes resulting in deterioration of soil physical and chemical Students will study about soil forming minerals & rocks.	3(2+1) sociated properties
	CO4 CO5 SSAC 111 CO1 CO2 CO3	To know the various Physical and Chemical growth requirements of bact Impart knowledge about production of beneficial bacteria. Student will understand Gram staining of bacteria Fundamentals of Soil Science Demonstrate fundamental knowledge to identify problematic soils and ass problems.	3(2+1) sociated properties





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B) Remedial Courses(3 or 5credit)

Sr No	Course No.	Course Title	Credit (T+P)
	AGH 111	Agricultural Heritage*1	1(1+0)
9	CO1	Students will get to know the basics of the agriculture, tillage and evolution agriculture.	ution of
	CO2	Students will get to know Ancient Agricultural Practices & Its relevant agriculture practices.	to modern
	CO3	Students will get to know traditional technical knowledge.	
	BIO 111	Introductory biology *2	2(1+1)
	CO1	Demonstrate an understanding of the foundations of mathematics	
10	CO2	Perform computations in higher mathematics.	
	CO3	Use mathematical ideas to model real-world problems.	
	CO4	Utilize technology to address mathematical ideas.	2
	CO5	Obtain a full-time position in a related field or placement.	
	MATH 111	Elementary Mathematics *3	2(1+1)
	CO1	Students will able to know matrices	
11	CO2	Students will able to know determinants	
	CO3	Students will able to know different forms of straight lines.	
	CO4	Students will able to know derivatives and differentiation	
	CO5	Students will able to know Integration	

C) Non-Gradial Courses (4 credits)

Sr No	Course No.	Course Title	Credit (T+P)
	HVE 111	Human Values & Ethics	1(1+0)
1 8 ²⁰	CO1	Students will understand and analyses the essentials of human values and skil exploration, happiness and prosperity	ls, self-
	CO2	Students will evaluate coexistence of the "I" with the body.	,
12	CO3	Students will identify and evaluate the role of harmony in family, society and order.	universal
	CO4	Students will understand and associate the holistic perception of harmony at a existence.	ll levels of
	CO5	Students will develop appropriate technologies and management patterns to charmony in professional and personal lives	reate



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Sr No	Course No.	Course Title	Credit (T+P)
	DEG 111	Democracy, Elections and Good Governance	1(1+0)
	CO1	Students will be aware of importance of democracy	
13	CO2	Students will be aware of the Protection of Rights	
	CO3	Students will understand Accountability of leaders in democracy.	
	CO4	Students will understand Election process in India	
	CO5	Students will understand the concepts of Good Governance	, , , , , , , , , , , , , , , , , , ,
	NSS 111	NSS **	1(0+1)
	CO1	Students will be aware of basic components of NSS	5)
14	CO2	Students will be aware of Analyzing guiding financial patterns of scheme, yo programme/ schemes of GOI	uth
	соз	Students will be aware of Role of youth in nation building, conflict resolution building	and peace-
	PHEY 111	Physical Education and Yoga	1(0+1)
15	CO1	Students will be aware of Meaning and importance of Physical Fitness and We	ellness
	CO2	Students will be aware of Physical fitness components	
	CO3	Students will be aware of History, Meaning and importance, Role of yoga in l	ife.

- * Remedial Courses (3/5 credit)
- ** Non-Gradial Courses (4 Credits)
- *¹Compulsory to all students** NCC or NSS
- *2 Students who have Biology in XII std are exempted
- *3 Students who have MATH in XII std are exempted

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Course Outcomes (COs): II SEMESTER A) Core Course

Sr No	Course No.	Course Title	Credit (T+P)	
	AGRO- 123	Fundamentals of Agronomy-II	2(1+1)	
	CO1	Students will get knowledge about role of water in plants, Water Resources of Maharashtra and its Development	India and	
	CO2 Students will get knowledge of Soil- water-plant Relationship, concept of			
1	CO3	Students will be able to estimate different methods of estimation of water requ	uirement	
	CO4	Students will be able to determine field capacity, infiltration rate and PWP.		
	CO5	Students will learn installation of various measuring devices and Measurement Irrigation water.	of	
	CO6	Students will get to know about different pressurized irrigation system along winstallation.	ith their	
	BOT 121	Fundamentals of Crop Physiology	2(1+1)	
	CO1	Student will understand basic principles of plant physiological form and function as processes and its importance in crop production.	ons as well	
	CO2	Student will learn role of crop physiology in crop health.	7	
	CO3	Student will be able for identification of deficiency symptoms of nutrients		
	CO4	Student will understand the metabolic and synthetic pathway of biomolecules	,	
	CO5	Student will know the difference between C3, C4 and CAM plant		
. 3.	ECON 121	Fundamentals of Agricultural Economics	2(2+0)	
	CO1	Student will understand propose methods of micro- and macroeconomic making in agriculture in different agro-ecological and agro-economic circumstances.	decision	
2	CO2	Student will understand Explain models of production, supply and demand of agricultural and food products on and international marketsnational		
	CO3	Student will understand the concepts of consumer choice and how it affects the farm / ranch level agriculture firm.		
	CO4	Student will understand the macroeconomics aspects of the economy as t affect the agricultural sector.	hey	
	CO5	Student will Understand the law of utility and market structure, different market.	types of	



K. K. Wagh Education Society's

K. K. Wagh College of Agriculture, (Affiliated to Mahatma PhuleKrishiVidyapeeth, Rahuri)

Saraswati Nagar, Panchavati, Nashik- 422 003. Maharashtra

College Code; 11135

AISHE Code: C-50690

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Course No.	Course Title	Credit (T+P)
ENGG 121	Soil and Water Conservation Engineering	2(1+1)
CO1	Course will give understanding about the degradation of productive soil global effect.	ly and its
CO2	This course will give knowledge about different types of surveying and levelli instruments.	ng
CO3	Course will give the knowledge of soil loss equation and it can estimate annual soil loss.	
CO4	Students will learn about agronomical and engineering measures to reduce soil erosion.	
CQ5	By this course student get the knowledge about designing of Grassed waterway terraces.	ys and
ENTO- 121	Fundamentals of Entomology	2(1+1)
CO1	Students will be understand about the collection and preservation of insects	
CO2	Students will be aware of the General body organization of insect	
CO3	Students will understand the dissection of different types of mouthparts.	. , .
CO4	Students will understand the Structure of antennae, leg, wings, and its modifications	
CO5	Students will understand the distinguishing taxonomic characters of different orders and	
CO6	Students will understand the dissection of different systems of insects	·
EXTN 122	Fundamentals of Agricultural Extension Education	3(2+1)
CO1	Students will be able to operate and handle the Digital Camera	<u> </u>
CO2	Students will be able to operate and handle the LCD projector.	×
CO3	Students will be able to operate and handle the Public address system	- April - Apri
CO4	Students will be able to prepare leaflets, folders and pamphlets.	
CO5	Students will be able to prepare PowerPoint slides for a given subject	
GPB 121	Fundamentals of Genetics	3(2+1)
CO1	Student will understand basic principles of Mendelian inheritance.	
CO2	Student will able to study cell division &chromosome segregation.	
CO3		
CO4	Student wills acquire the knowledge required to design, execute, and and results of genetic experimentation in plant systems.	alyze the
CO5		and sex
	No. ENGG 121 CO1 CO2 CO3 CO4 CO5 ENTO- 121 CO1 CO2 CO3 CO4 CO5 EXTN 122 CO1 CO2 CO3 CO4 CO5 GPB 121 CO1 CO2 CO3 CO4 CO5 GPB 121 CO1 CO2 CO3 CO4 CO5 CO4 CO5 CO5 CO6 CO5 CO6 CO7 CO7 CO7 CO7 CO7 CO7 CO7	No. Course Title Soil and Water Conservation Engineering Course will give understanding about the degradation of productive soil global effect. Co2 This course will give knowledge about different types of surveying and levelli instruments. Co3 Course will give the knowledge of soil loss equation and it can estimate annual Co4 Students will learn about agronomical and engineering measures to reduce soil By this course student get the knowledge about designing of Grassed waterway terraces. ENTO- Fundamentals of Entomology Co1 Students will be understand about the collection and preservation of insects Students will be aware of the General body organization of insect Co3 Students will understand the dissection of different types of mouthparts. Co4 Students will understand the Structure of antennae, leg, wings, and its modification along with examples. Co5 Students will understand the dissection of different systems of insects EXTN 122 Fundamentals of Agricultural Extension Education Co4 Students will be able to operate and handle the Digital Camera Co5 Students will be able to operate and handle the LCD projector. Co6 Students will be able to operate and handle the LCD projector. Co7 Students will be able to operate and handle the Public address system Co8 Students will be able to prepare leaflets, folders and pamphlets. Co5 Students will be able to prepare leaflets, folders and pamphlets. Co6 Students will be able to prepare leaflets, folders and pamphlets. Co7 Students will be able to prepare leaflets, folders and pamphlets. Co7 Students will be able to prepare leaflets, folders and pamphlets. Co7 Students will be able to prepare leaflets, folders and pamphlets. Co8 Students will be able to prepare leaflets, folders and pamphlets. Co8 Students will be able to prepare leaflets, folders and pamphlets. Co7 Student will explore the multifactorial inheritance. Co8 Student will sale to study cell division &chromosome segregation. Co8 Student will sacquire the knowledge required to design, exe



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Sr No	Course No.	Course Title	Credit (T+P)
	PATH 121	Fundamentals of Plant Pathology	3(2+1)
	CO1	Student will acquaint about concepts of plant pathogens, major disease c organisms and their etiology	ausing
7	CO2	To provide specific knowledge about host pathogen interactions.	
_	CO3	Recognition of plant disease is the first step in doing something about the	em
	CO4	To give specific knowledge about environment and disease development	•
	CO5	Student will understand Koch's postulates	

B) Non-Gradial Courses (4 credits)

Course No.	Course Title	Credit (T+P)
FRST 121	Introduction to Forestry	2(1+1)
Student will be aware of Identification of tree-species and its classification according uses		cording to
CO2	Student will be understand the Measurements of diameter-girth and basal area	of trees
CO3		
CO4		
CO5		
EDNT 121	Educational Tour*	1(0+1)
CO1	It help students broaden their knowledge and skills	
	No. FRST 121 CO1 CO2 CO3 CO4 CO5 EDNT 121	FRST 121 Introduction to Forestry CO1 Student will be aware of Identification of tree-species and its classification accounts uses CO2 Student will be understand the Measurements of diameter-girth and basal area CO3 Student will be understand the Volume estimation of logs and standing trees co4 students will study about planning and layout of forest plantations co5 students will aware about tree nursery practice EDNT 121 Educational Tour*

C) Common Course

Sr No	Course No.	Course Title	Credit (T+P)
	EXTN 123	Communication Skills and personality Developments	2(1+1)
10	CO1	Students will be developing knowledge, skills, and judgment around human communication that facilitate their ability.	
10	CO2	Students will understand different techniques of communication.	
	CO3	Students will practice and adhere to the 7Cs of Communication	, , , , , , , , , , , , , , , , , , , ,
	CO4	Students will familiarize with different types of Communication.	
	CO5	Students will understand and practice Interview Etiquettes.	· · · · · · · · · · · · · · · · · · ·





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Course Outcomes (COs):III SEMESTER A) Core Course

Sr No	Course No.	Course Title	Credit
	AGRO 234	Crop Production Technology-I (Kharif crops)	(T+P) 2(1+1)
	COL	Students will be able to know about origin, geographical distribution, and ec	onomic
	CO1	importance of Kharif crops	
	CO2	Students will be able to know about Soil and climatic requirements, varieties	, cultural
1	CO2	practices and yield of Kharif crops.	8
	CO3	Students will get to know about nursery preparation fortranplanted rice.	5)
	CO4	Students will study effect of sowing depth on germination of kharif crops	
. 8	CO5	Students will study about basic morphological characteristics of Kharif crops	·
	CO6	Students will have practice of calculations of plant population, seed rate and doses.	fertilizers
	AGRO 235	Rainfed Agriculture and Watershed Management	2(1+1)
	CO1	Student will able to understand about rainfed agriculture and its introduction, and prospects in India	
7	CO2	Students will study the crop adaptation and mitigation strategies, crop planning management techniques.	g and crop
2	CO3	Students will able to understand contingent crop planning for aberrant weathe conditions	r
	CO4	Students will learn assure efficient utilization of water through soil, water and management.	crop
	CO5	Students will be able to plan and implement integrated watershed developmen to manage rainfed sustainability.dry lands profitability and	t programs
- 1	BIOCHM 231	Fundamentals of plant biochemistry and biotechnology	3(2+1)
_	CO1	Students will study about Role of cell organelles and their functions	
1	CO2	Student will be understand Preparation of solution, pH & buffers	
(CO3	Student will be understand the Qualitative tests for carbohydrates and amino ac	eids
L	CO4	Students will study about Isolation of genomic DNA from plant. Purification, Quantification and quality determination	
C	CO5	students will study about Qualitative tests for oil	



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Sr No		Course Title	Credit (T+P)
	ENGG 232	Farm Machinery and Power	2(1+1)
	CO1	Various sources of farm power and their uses, about working of IC Engines.	<u> </u>
	CO2	It helps the students with technical knowledge required for the operation of T	illage.
4	CO3	To help the students with mathematical and experimental skills for solving fit problems.	
	CO4	It will help the students to acquire the skills required to develop and modifica machines.	tion of farn
	CO5	The student will acquire knowledge regarding different types of tractors and i maintenance.	ts 5)
	ENTO 232	Insect Ecology and Integrated pest Management	2(1+1)
	CO1	Studies on behavior, distribution Pest surveillance patterns and Pest surveillan insects	ce of
5	CO2	Students will understand about the different IPM practices	
2	CO3	Students will understand the Pesticide appliances, insecticide application techniques	
	CO4	Students will understand the IPM case studies of different crops	
	CO5	Students will understand the Vermiculture and Biopesticides used in IPM with mass multiplication of NPV and Entomopathogenic fungi.	
	GPB 232	Fundamentals of Plant Breeding	2(1+1)
	CO1	Student will understand about plant breeding- introduction and historica concepts.	1
	CO2	Student will learn about different plant breeding objectives.	
5	CO3	Student wills able to establish the commercial plant breeding company t developed new superior crops varieties.	0
	CO4	Student will learn the concept of self -incompatibility and male sterility.	
	CO5	Student will understand about various plant breedingmethods for self, cross and vegetative propagated crops.	i
	CO6	Student will study about the detail study of different farmer and plant breeder rights.	
	HORT 232	Production Technology for Vegetables and Spices	2(1+1)
L	COI	Students will be aware of all season vegetables crops.	
	CO2	Students will be aware of spice crops	ę e
1	CO3	Students will understand the preparation of vegetable seedlings in nursery.	
	CO4	Students will understand the of morphological characters of vegetables and spice	es
(CO5	Students will be aware of method of seed extraction in vegetable crops.	-5



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Sr No	Course	Course Title	Credit
	PATH 232	Principles of Integrated Disease Management	(T+P) 2(1+1)
	COI	Students will be aware about methods of diagnosis various plant disease	
8	CO2	Students will be aware about methods of detection of various plant diseases	-
	CO3	Students will be aware about assessment of crop yield losses	
	CO4	Students will be aware about mass multiplication of Trichoderma	
	CO5	Students will be aware about mass multiplication of Pseudomonas	
	STAT 231	Statistical Methods	2(1+1)
	COI	Students will be understand different types of averages which can be used as perconditions	er
9	CO2	Students will be understand different sampling surveys and classification types different data types	as per
	CO3	Students will aware about forecasting methods of weather data and price issue agriculture	s in
	CO4	Students will analyses agricultural data related to crop growth and weather parameters	meters
	CO5	Students will aware understand about the research methods which are using in agriculture	

B) Common Courses

Sr No	Course No.	Course Title	Credit
	COMP	Agri- Informatics	(T+P)
	231		2(1+1)
	COI	Students will understand the function and working of Computer Components, accessories.	- Acquiry Manager and
10	CO2	Students will understand the working of Ms Word, Power point and Excel.	\$
	CO3	Students will understand the working of Ms Acess (RDBMS Software).	
	CO4	Students will understand the working of DOS Commands.	
	CO5	Students will be aware of concept related to Crop Simulation Models(CSM).	





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Sr No	Course No.	Course Title	Credit (T+P)		
- 10	ESDM 231	Environmental Studies and Disaster Management	3(2+1)		
	CO1	Students will be aware of concepts and methods from ecological and physical sciences and their application in environmental problem solving. Interdisciplinary branches of environment and their scopes.			
11	CO2	Students will study concepts of natural resources, Food resources, mineral resources, Concept of non-Conventional resources. Renewable resources and current potentials of energy resources, types and various applications of			
	CO3	Student will be understand ecosystem Links between environmental componen their role and types of Ecosystems.	ts and		
	CO4	Students will be aware of types of biodiversity, their values, and depletion and conservation methods.			
	CO5	Students will understand the concept of Urban problems related to energy, Water conservation, rain water harvesting, and watershed management. Environmental ethics: Issues and possible solutions, climate change, global warming, acid rain, ozone layer depletion.			





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Course Outcomes (COs): IV SEMESTER

A) Core Course

Sr No		Course Title	Credit (T+P)
	AGRO 246	Crop Production Technology-II (Rabi crops)	
1	CO1	Students will get knowledge on crop production technologies of different Rab	2(1+1)
	CO2	student will know the origin, geographical distribution, economic importance, climatic requirements, and yield of rabi crops .varieties, cultural practices	soil and
	CO3	Students will learn to know about basic morphological characteristics of rabi	aron a
	CO4	Students will be able to know about the economic importance of medicinal an crops in present sphere and different oil extraction methods.	d Aromatic
	CO5	Students will be able to study yield and juice quality analysis of sugarcane	
	AGRO 247	Farming System and Sustainable Agriculture	1(1+0)
2	CO1	Students will know different cropping and farming system like integrated farm (IFS).	
2	CO2	students will get knowledge on sustainable agricultural practices such as organ	
	CO3	students will Interpret farming systems and its significance	ic farming
	CO4	students will be able to design an efficient cropping system	
	CO5	Students will able to determine the efficiency of system	
	AGRO 248	Principles of Organic Farming	2(1+1)
	CO1	Students will get knowledge of principles, need and prospect of organic	farming
3	CO2	Students will get knowledge of Initiative taken by Government for organic produce.	
	CO3	Students will learn selection of crops and varieties for organic produce	
	CO4	Students will aware of different types of organic manures	-
	CO5	Students will be get knowledge of indigenous technology knowledge (II nutrient, insect, disease and weed management.	K) for
	AHDS 242	Livestock Breeding and Nutrition	2(1+1)
	CO1	Student will be aware of Identification of Feeds and Fodder Seeds use fo Fodder Production	
		Student will be understand the Determination of Fat ,Protein and Nitroger of Animals	
-	CO3	Student will be understand the Estimation of gene and genotypic frequency	V
	CU4	students will study about the sire index	
	CO5	students will aware about the evaluation of nutritive value of various feed	s and



College Code; 11135 AISHE Code: C-50690

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Sr No	Course No.	Course Title	Credit (T+P)
5	ECON 242	Agriculture Finance and Cooperation	3(2+1)
	CO1	Student will understand the different credit needs and its role in Indian a	igriculture.
	CO2	Student will summarize how the commercial banks are working, function RRB's, KCC and lead bank scheme,	ning the
	CO3	Student will summarize the ability to understand the terminology and facts about agriculture Finance and Cooperation.	
	CO4	Student will understand classification with the different cooperatives we India.	orking in
	CQ5	Student will understand the broad feature of Higher Financial institution instruments to control credit in the country	s with
	ENGG 243	Renewable Energy and Green Technology	2(1+1)
	CO1	To understand the importance and role of renewable sources in agricultu	re sector.
	CO2	To understand the bio fuel production and their applications in today's v	
6	СОЗ	This course will give the understanding about importance and uses of biomass to produce the fuel.	
	CO4	Students will get the knowledge about various application of solar energy.	
	CO5	By this course student get the knowledge about different renewable energy sources.	
	ENTO 243	Pest of Horticultural Crops and their Management	2(1+1)
	CO1	Students will get the knowledge about different pests fruits	
	CO2	Students will get the knowledge about different pests of vegetables	
7	CO3	Students will get the knowledge about different pests of spices, flowers and pleasures.	antation
	CO4	Students will understand the Extraction of nematodes from soil and plant samp	les
1	CO5	Students will understand the characteristics and symptoms of different plant panematodes	rasitic
	GPB 243	Principles of Seed Technology	3(1+2)
	CO1	Students will able to get knowledge of seed production program.	
8	CO2	Students will be aware of storage the pure variety seed.	
0	CO3	Students will understand the how to supply the disease free seed in the market	
	CO4	Students will learn about seed treatments	· , , ,
	CO5	Students will understand the production of hybrid seed of different crops to increase income.	rease the



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Sr No	Course No.	Course Title	Credit (T+P)	
- x s	HORT 243	Production Technology for Fruit and Plantation Crops	2(1+1)	
	CO1	Students will be aware of study of fruit crops.		
9	CO2	Students will be aware of study of plantation crops.		
9	CO3	Student will be understand the preparation of plant bio regulators and their use	S	
	CO4	Students will be aware of Propagation methods for plantation crops including Micro-propagation		
	CO5	Students will understand the concept of Rejuvenation of old senile orchards		
	SSAC 242	Problematic Soils and their Management	2(1+1)	
100	CO1	Demonstrate fundamental knowledge to identify problematic soils and associated problems.		
10	CO2	Introduce students to problematic soils, identify processes resulting in deterioration of soil physical and chemical properties		
	соз	Students will understand the process of Determination of anions (CO3, HCO3, Cl a SO4) from irrigation water and RSC and SAR.		
	CO4	Students will understand the method of Collection of irrigation water and sewage water.		
	CO5	Students will understand the method of Determination of gypsum requirement soil.	of sodic	

B)Elective courses

Sr No	Course No.	Course Title	Credit (T+P)
	ELE EXTN 244	Agricultural Journalism	3(2+1)
	CO1	Students will be able to prepare News on college activity	
11	CO2	Students will be able to prepare Success Story	
	CO3	Students will be able to prepare Radio and TV Script	3 - 1 - 1 - 1 - 1
	CO4	Students should understand proofreading symbols	
,	CO5	Students will be able to prepare a cover page for a bulletin on cultivation of cro	ps
	ELE PATH 243	Bio-fertilizers, Bio-control Agents and Bio-pesticides	3(2+1)
	CO1	Students will be aware about classification of biofertilizers microorganis in biofertilizers production	ms used
12	CO2	Students will be aware about nitrogen cycle in Nature and its importance	
	CO3	Students will be aware about process of nodule formation, Role of Nif and Nod gene in Biological Nitrogen fixation	
	CO4	Students will be aware about enzyme nitrogenase and its component	
	CO5	Students will be aware about biochemistry of nitrogen fixation,	
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C) Non-Gradial Courses (4 credits)

Sr No	Course No.	Course Title	Credit (T+P)
13	EDNT 242	Study Tour*	— — — — — — — — — — — — — — — — — — —
	CO1	It help students broaden their knowledge and skills	1(0+1)







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Course Outcomes (COs):V SEMESTER A) Core Course

Sr No	Course No.	Course Title	Credit (T+P)	
	AGRO 359	Practical Crop Production-I (Kharif crops)	1(0+1)	
	CO1	Students will be able to demonstrate practical cultivation of kharif crops	11(0.1)	
	CO2	Students will be able to identify problems in kharif cultivation and to offer solution	ions	
1	CO3	Students will be able to suggest marketing channels for products of cultivation		
	CO4	Students will be able to operate modern farm equipment	· · · · · · · · · · · · · · · · · · ·	
	CO5	Students will be able to optimize resource utilization and recommend package of for Kharif crops	practices	
	CO6	Students will be able to construct a balance sheet showing cost of cultivation and income generated	l net	
	AHDS 353	Technology of Milk and Milk Products.	2(1+1)	
	CO1	Students will be Study of platform tests and sampling of milk and milk pro-	oducts	
2	CO2	Students will be aware of Determination		
	CO3	Students will understand the preparation of different Milk Constituents of Milk		
	CO4	Students will understand the Standardization of milk by Pearson's method		
	CO5	Students will be aware of Determination of adulteration in milk and milk	products	
	BOT 353	Intellectual Property Right	1(1+0)	
	CO1	Students will learn Skill to understand the concept of intellectual property rights.	1 1(1 0)	
2	CO2	Students will understand to develop procedural knowledge to Legal System and sproblem.	solving the	
3	CO3	Students will aware of skill to pursue the professional programs in Company Secretary ship, Law, Business, International Affairs, Public Administration and Other fields.		
	CO4	Students will understand the concept of various forms of intellectual property rigl	nts.	
	CO5	Students will aware of plant breeders rights, farmers rights and indigenous techniknowledge		
*	ECON 353	Agricultural Marketing Trade and Prices	3(2+1)	
	CO1	Students will understand the agriculture marketing	30	
	CO2	Students will understand classification of the product life cycle and its different aspects		
4	CO3	Students will understand marketing process and functions:		
X,8	CO4	Students will understand the role of Govt. in agricultural marketing: Public s institutions - CWC, SWC, FCI, CACP & DMI	sector	
	CO5	Students will understand the marketing efficiency obtained from different m	arketing	



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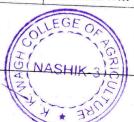
(Affiliated to Mahatma Phule Krishi Vidyapeeth, Rahuri) Saraswati Nagar, Panchavati, Nashik- 422 003. Maharashtra

College Code;11135

AISHE Code: C-50690

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Sr No		Course Title	Cred (T+P	
	354	Pests of Crops and Stored Grain and their Management- I	2(1+1	
	CO1	Students will understand the pests of cereals		
	CO2	Students will understand the pests of oilseed and pulses	-	
5	CO3	Students will understand the pests of stored grain		
	CO4	Students will understand the Preventive and curative methods of stored grain p Storage structure and methods of grain storage	pests and	
	CO5	Students will understand Non insect pests, mites, rodents, birds and microorga associated with stored grain and their management	nisms	
	GPB 355	Crop Improvement – I (Kharif Crops)	2(1+1)	
	COI	Student will learn importance of wild relative to produce new varieties of khari		
6	CO2	Students will learn Gene preservation method for further use to improve kharif		
	CO3	Students will learn to apply breeding method to improve kharif crops.	- F	
	CO4	Students will learns identification of resistance gene relate to kharif crop with high yield potential against Pest and pathogen and utilization genes.		
	CO5	Students will learn new genetic approaches to achieve a definite ideotype of kharif crop.		
	HORT 354	Production Technology for Ornamental Crops MAD		
	CO1	Student will understand different types of packaging containers for fruits and ve	2(1+1)	
_				
7	CO2	Students will understand the concept of chilling and freezing injury in fruits and	vegetables	
1	CO3	Students will be aware of Preparation of liqueur product.		
+	CO4	Students will be aware of Preparation of semi solid products		
-	CO5	Students will be aware of Post Harvest Handling of fruits and vegetables		
- 1	PATH 354	Diseases of Field and Horticultural Crops and their Management	3(2+1)	
-	1 9 8 4	Identification and histopathological studies of selected diseases of field an	d	
	COI	horticultural crops		
	CO2	Student will know the common pathogens of different discount		
	CO2	Student will know the common pathogens of different diseases Student acquire the knowledge shout still		
	CO2	Student will know the common pathogens of different discount	ases	





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Sr No	Course No.	Course Title	Credit (T+P)
	SSAC 353	Manures, Fertilizers and Soil Fertility Management	3(2+1)
	CO1	Knowledge of different manure and fertilizers used in different crops according soil condition	
9	CO2	Essentiality of plant nutrients and mechanism of nutrient transport to plant factor affecting nutrient availability	and
	CO3	Students will be aware of Fertilizer adulteration test.	
	CO4	Students will able to identify the adulteration in fertilizer	
,*.	CO5	Students will understand the Principle and application of spectro-photom Colorimetry, lame photometry and spectrophotometer (AAS).atomic abso	netry / rption

B) Common Courses

Sr No	Course No.	Course Title	Credit (T+P)	
	EXTN 355	Entrepreneurship Development and Business Communication	2(1+1)	
	CO1	Students will be able to conduct market survey for an agro-based project.		
	CO2	Students will be able to prepare Project Proposal for any agro-based project		
10	CO3	student will be able to prepare an advertisement for agro-based product		
· }	CO4	Students will practice and improve their interpersonal communication skills under the guidance of teacher.		
	CO5	Students shall participate in mock interviews and develop skills under the guidant teacher.	ce of	

C) Elective courses

Sr No	Course No.	Course Title	Credit (T+P)
	ELE ECON 354	Agribusiness Management	3(2+1)
	CO1	Student will understand Agribusiness Management	
11	CO2	Students learn strategic planning and management skills, enabling them to make decisions in the dynamic and evolving agricultural industry.	informed
,	CO3	Student will be able to understand the SWOT and PEST Analysis of the project.	
	CO4	Student will understand project cycle, Product Life Cycle, Market Segmentation.	
	CO5	Student will understand Capital Management and Financial Management	



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Course Outcomes (COs): VI SEMESTER A) Core Course

Sr No	Course No.	Course Title	Credit (T+P)	
1	AGRO 3611	Practical Crop Production-II (Rabi crops)	1(0+1)	
	CO1	Students will acquaint knowledge on Rabi season crops,	1 - (* -)	
	CO2	Students will be able to understand weedmanagement of Rabi crops		
	CO3	Student will develop the skills about the production techniques of Rabi crops in the practical crop production field.		
	CO4	Students will be able to optimize resource utilization and recommend package of practices for Rabi crops		
	CO5	Students will be able to construct a balance sheet showing cost of cultivation and no income generated	et	
	AGRO 3612	Geo-informatics and Nano-technology and Precision Farming	2(1+1)	
	CO1	Students will know about applications of GIS in agriculture		
	CO2	Students will gain a comprehensive understanding of nanotechnology in the context of precision farming.		
2	CO3	Students will develop practical skills in utilizing geoinformatics tools and technologies in agriculture.		
	CO4	Students will get know role of remote sensing in precision agriculture		
	CO5	Students will be able to comprehend simulation models on precision agricul	ture	
A. e	CO6	Students will be able to know role of nanotechnology in improving agricultuapplication of geoinformatics and nanotechnology in precision farming projection	are with	
	AHDS 364	Sheep Goat and Poultry Production	2(1+1)	
	CO1	Students will be aware Study of body parts of sheep and goat.	3)	
3	CO2	Students will be aware of study of Selection and Identification Mark of She Goat	ep and	
	CO3	Student will be understand the preparation of Schedule of Feeding Practices Sheep and Goat	of	
	CO4	Students will be aware of Preparation of animal for slaughter and different no of slaughter E O	nethods	
	CO5	Students will understand the concept of System of rearing in sheep and goa	t	



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Sr No	Course No.	Course Title	Credit (T+P)		
	ECON 365	Farm Management, Production and Resource Economics	2(1+1)		
	CO1	Students will understand a comprehensive treatment of the traditional agricultural production economics			
4	CO2	Students will understand factor-product, factor-factor and product- product	models,		
	CO3	Students will understand limited resources available in the economy.			
	CO4	Students will understand the problems of unemployment inequality shortage of food productions, poverty			
	CO5	Students will gain knowledge of the causes of regional variations in productivity and production, social and economic inequality, size of land holdings and lack of			
	ENGG 364	Protected Cultivation and secondary Agriculture	2(1+1)		
	CO1	To get knowledge about greenhouse technology, types of GH			
	CO2	Course will give the knowledge of Greenhouse equipment for low-cost green house	S.		
5	CO3	This course will help the students to learn about Irrigation systems used in greenhou			
	CO4	By this course student get the knowledge of cleaning, grading and moisture measure	ement.		
	CO5	Students will be able to understand the material handling equipment, principle and v	vorking.		
	ENTO 365	Management of Beneficial Insects	2(1+1)		
	CO1	Students will understand the lifecycle of Beneficial insects, Bio-agents, pollinators			
6	CO2	Student will understand Commercial rearing of different beneficial insects like Silkworm, Honeybee, Lac insect			
	CO3	Students will understand the disease & pest of Beneficial insects like silkworms, Honey bee			
F	CO4	Students will understand Mass production of Different bio-agents			
·	CO5	Students will understand about the use of different pollinators and scavengers in agriculture			
- 1	FST 362	Principles of Food Science and Naturalism	2(2+0)		
	CO1	Students will understand the concept of Food Science			
7	CO2	Students will understand the concept of Food composition and chemistry			
	CO3	Students will aware of the concept of Food microbiology			
L	CO4	Students will understand the concept of Principles and methods of food processing an preservation	nd		
(CO50	Students will aware of New trends in food science and nutrition			
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Sr No	Course No.	Course Title	Credit (T+P)		
8	GPB 366	Crop Improvement – II (Rabi crops)	2(1+1)		
	CO1	Student will learn importance of wild relative to produce new varieties of rabi crop.			
	CO2	Students will learns Gene preservation method for further use to improve rabi crops.			
	CO3	Students will learns to applies breeding method to improve rabi crops.			
	CO4	Students will learns identification of resistance gene relate to rabi crop with high yield potential against Pest and pathogen and utilization genes.			
	CO5	Students will learn new genetic approaches to achieve a definite ideotype of rabicrop.			
	HORT 366	Post-harvest Management and Value Addition of Fruits and Vegetables	2(1+1)		
	COI	Student will understand different types of packaging containers for fruits and vegetables			
9	CO2	Students will understand the concept of chilling and freezing injury in fruits and vegetables			
	CO3	Students will be aware of Preparation of liqueur product.			
	CO4	Students will be aware of Preparation of semi-solid products			
	CO5	Students will be aware of Most harvest Handling of fruits and vegetables			
	PATH 365	Diseases of Field and Horticultural Crops and their Management-II	3(2+1)		
	CO1	Identification and histopathological studies of selected diseases of field and horticultural crops			
10	CO2	Student will know the common pathogens of different diseases.			
10	CO3	Students will be aware about dispersal of these diseases suitable management methods can be applied			
	CO4	Student will know the common pathogens of different diseases			
	CO5	Students will be aware about collection and preservation of disease specimen			







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B) Elective courses

Sr No	Course No.	Course Title	Credit (T+P)	
	ELE SSAC 364	Agrochemicals	3(2+1)	
	CO1	Students will be aware of Preparation of Bordeaux mixture and paste		
11	CO2	Students will be aware of Equipment used for herbicide application and calibration.	, =	
	CO3	Students will understand the Handling and storage of fungicides and Agrochemical	nemicals	
н	CO4	Students will understand the plant protection appliances		
	CO5	Students will understand the method of fertilizer analysis		







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Course Outcomes (COs): VII SEMESTER

Sr No		Course Title	Credit (T+P)	
	SRP-401	Village attachment	10(0+10	
	CO1	Students will experience the daily Agricultural operations of Host farmer farm.		
1	CO2	Farmer awareness by demonstration of innovative techniques of agriculture or by organizing <i>Shetakari Melavas</i>		
	CO3	Students understand problem faces by farmers during practical adoption of tech	niques	
	CO4	Students will experience the Indigenous Technical Knowledge.	inques.	
	CO5	Extension and Transfer of Technology activities are main outcome.		
	SRP-402	Unit Attachment	4(0) 4)	
	CO1	Students will experience work of Regional Agril. Research Station	4(0+4)	
2	CO2	Students will experience work of Krishi Vigyan Kendra.		
	CO3	Students will experience functions of Agriculture college.		
	CO4	Survey, Presentation, Report writing skill will improve.		
	CO5	It help students broaden their knowledge and skills.		
	SRP-403	Plant Clinic Attachment	2(0+2)	
	COI	Students experience about actual nutritional management, its role in plant growth, its deficiency and toxicity		
3	CO2	Students will get experience to diagnose various plant diseases and its Integrated diseases management		
	CO3	Students will get experience to diagnose various pest and its Integrated pest mana		
	CO4	Report preparation and presentation knowledge will enhance.		
	CO5	It will impart diagnostic and remedial knowledge of student relevant to real field situation.		
	SRP-404	Agro Industrial Attachment	4(0+4)	
1	CO1	Student will be in Acquaintance with industry and staff	4(UT4)	
4	CO2	Student will study of structure, functioning, objective and mandates of the		
L	CO3	Student will study of various processing units and hands-on trainings under supervision of industry staff		
-	CO4	Student will study Ethics of industry		
	CO5	Student will understand Employment generated by the industry	1	



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Course Outcomes (COs):VIII SEMESTER

Sr No	Course No.	Course Title	Credit (T+P)		
	SRP EL HORT 4011	Nursery Management of Horticultural Crops	10(0+10)		
1	CO1	Market Survey skill develop in students			
	CO2	Students experience the Project Planning of Nursery enterprise.			
	CO3	Presentation skill of students will improve.			
	CO4	Nursery Entrepreneurship Skill development is main outcome.			
	CO5	Students understand the project whitening skill.			
	SRP-EL- BOT-407	Seed production & technology	10(0+10)		
	COI	Students will practically learn and able to start a seed production program for fill full requirement of quality seed in market and increase the income.			
	CO2	Students will be aware of storage the pure variety seed to avoid the availability crises of pure variety seed due to adverse environmental conditions.			
2	CO3	Students will understand the how to supply the disease free seed in the market to get the environment friendly cultivation of crops.			
	CO4	Students will learn to increase the farm income by producing high yielding quality seed and decrease the cost of cultivation also.	disease free		
	CO5	Students will get practical experience of the production of hybrid seed of dicrops to increase the farm income.	fferent		
	SRP-EL- SSAC-405	Soil, Water Plant and fertilizer analysis	10(0+10)		
	CO1	Market Survey skill develop in students	,		
3	CO2	Students experience the Water, Plant and Fertilizer Analysis			
	CO3	Presentation skill of students will improve.			
	CO4	Entrepreneurship Skill development is main outcome.			
	CO5	Students understand the project whitening skill.			
x.	SRP-EL- AHDS-405	Processing of Milk and Milk products	10(0+10)		
	CO1	Student will understand Analysis of Milk and its Quality Attributes	*		
4	CO2	Students will understand the concept of Determination SNF, TS, spec gravity and acidity of milk	ific		
\$	CO3	Students will be aware of Market Survey regarding Marketing of Various Milk & Milk products			
,	CO4	Students will be aware of Preparation of Various Milk and Milk Prod			
	CO5	Students will be aware of Determination of adulteration in milk and milk pr	oducts		



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Sr No	Course No.	Course Title	Credit (T+P)
246	SRP-EL- PATH-405	Bio-fertilizer production technology	10(0+10)
	CO1	Students will be aware about production of Bio agents & Bio fertilizer	10(0+10)
5	CO2	Students will be aware about cross inoculation groups amongst Rhizobium	
	CO3	Students will be aware about quality standard for bio fertilizers	
	CO4	Students will be aware about strategies of Mass multiplication and packing Registration of bio fertilizers	(5)
	CO5	Students will be aware about role of microorganisms in decomposition of organisms	ganic farm
	ŠRP-EL- ENTO- 406	Mass production of Bio-agents and Bio-pesticides	10/0.10
	CO1	Market Survey & Production planning skill develop in students for Bio-Pest Business	10(0+10) icides
6	CO2	Students experience about Mass production, formulations & packaging of Bipesticides	0-
	CO3	Business Networking skill development for Bio-pesticides business	
	CO4	Students will understand about Project report preparation, Cost of production pesticides	of Bio-
	CO5	Entrepreneurship Skill development is main outcome.	

