Academic Year 2018-19

B.P.H.E. Society's
Ahmednagar College, Ahmednagar
Internal Quality Assurance Cell
CO, PO, and PSO Attainment Sheet

Department Name	**Botany**
Program Name	**M.Sc.(PG)**

Program Outcomes(PO)

PO1	Think Critically - Get ability to apply the process of science by formulating hypotheses and design experiments based on the scientific method.
PO2	Analyze and interpret results generated through studies in botany, taxonomical treatments, field studies, excursion tours and laboratory techniques used in the subject.
PO3	Use quantitative reasoning by using mathematical calculations and graphing skills to solve problems in plant science (Botany)
PO4	Effective Communication and collaborate with other disciplines by effectively communicating the fundamental concepts of Botany in written and oral format
PO5	Identify credible scientific sources to interpret and evaluate the evidences
PO6	Understand the relationship between science and society by recognizing and discussing logical, scientific and ethical issues in Botany subject.
PO7	Environment and Sustainability: Understand the issues of environmental contexts and sustainable development with respect to assessment, conservation and utilization of floral diversity
PO8	Use appropriate plant molecular techniques and use of instrumentation realated to it.
PO9	Practice safe laboratory procedures, using appropriate protective, biosafety and emergency procedures.
PO10	
PO11	
PO12	

Program Specific Outcome(PSO)

PSO1	Identify classify the plants by using the key characters.
PSO2	Use pure culture and selective techniques to isolate fungi, plant pathogens, algae and identify them growing on media.
PSO3	Qualitative and quantitative estimate the number of floral components by using enumeration and suitable sampling and techniques

Academic Year :	**2018-19**

Class	M.Sc. 1
Subject Code	40101
Subject Name	Cryptogamic Botany I
Semester No	I
Teacher Name	Dr. Nisha H. Godse
Course Outcomes	

	CO1	Ability to understand the core concepts of Bryophytes and Pteriodophytes
	CO2	Ability to understand the difference between lower and higher cryptogams
	CO3	Ability to comprehend the classification, life cycle of Bryophtes
	CO4	Students will learn the basic concepts and classfication of Pteriodophytes
	CO5	Students will learn the morphology, anatomy and utilization of Pteriodophytes

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	2	2	2	2	3	3	3
CO2	2	3	3	2	3	2	3	2	3	2	2	2
CO3	2	3	2	2	2	2	2	2	2	3	3	3
CO4	1	2	2	2	3	2	2	3	2	2	2	2
CO5	2	2	2	2	2	2	2	2	2	2	2	2
Average	1.80	2.40	2.20	2.00	2.40	2.00	2.20	2.20	2.20	2.40	2.40	2.40

Class	M.Sc. I
Subject Code	40102
Subject Name	BO 1.2 PLANT PHYSIOLOGY AND BIOCHEMISTRY
Semester No	I
Teacher Name	Dr. Prasad Y. Lamrood & Mr. Sagar Bawake
Course Outcomes	

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	2	3	3	3	3	3	3
CO2	2	3	2	2	2	3	2	2	3	2	3	2
CO3	3	3	3	2	3	3	2	3	2	3	3	3
CO4	2	2	2	3	3	3	2	2	3	3	3	3

	CO1	Students will get information about plant water relation, photosynthesis, phytochromes, stress physiology.	CO5	3	3	3	2	3	3	2	3	2	3	3	3
	CO2	Ability to learn plant respiration, plant growth regulator, seed germation, agriequipments.	Average	2.60	2.60	2.60	2.20	2.80	2.80	2.20	2.60	2.60	2.80	3.00	2.80
	CO3	Students will learn about atom structure, energy dynamics, Enzymes, kinetics													
	CO4	Ability to learn macromolecules such as carbohydrates, amino acids and proteins													
	CO5	Students will learn about Nitrogen metabolism, nucleic acid and metabolism, secondary metabolites, lipid metabolism													

Class	M.Sc.-I	Course Outcomes	Program Outcomes									PSOs		
Subject Code	40103		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	Genetics and Plant Breeding	CO1	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	I	CO2	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	Abhijit Kulkarni	CO3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes		CO4	2	2	2	2	2	2	2	2	2	2	2	2
	CO1	Students will get the knowlwdge of inheritance of traits	CO5	2	2	2	2	2	2	2	2	2	2	2	2
	CO2	Students will get aquinted with how Mendel has used principles of Satistics in biology	Average	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
	CO3	Students will get the knowledge of Chromosomal mutaions and its effects													
	CO4	ability to understand the core concepts of plant breeding													
	CO5	ability to understand the basic concepts of mutaion and types , mutational breeding													

Class	M.Sc. I	Course Outcomes	Program Outcomes	PSOs

Subject Code	40104	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	Botanical Techniques	CO1	2	3	2	2	2	3	2	2	3	2	3	2
Semester No	I	CO2	3	3	3	2	3	3	2	3	2	3	3	3
Teacher Name	Dr. Prasad Y. Lamrood & Mr. Sagar Bawake	CO3	2	2	2	3	3	3	2	2	3	3	3	3
Course Outcomes		CO4	3	3	3	2	3	3	2	3	2	3	3	3
CO1	Students will learn about various aspects of microscopy, sample preparation, drawing and measurement of specimen	CO5	2	2	2	3	3	3	2	2	3	3	3	3
CO2	Various staining techniques, microtomy techniques	Average	2.40	2.60	2.40	2.40	2.80	3.00	2.00	2.40	2.60	2.80	3.00	2.80
CO3	Students will also learn about basics and various spectroscopic techniques, radioisotopes, related asprcts and their use in biology.													
CO4	Will learn about Chromoatographic techniques, electrophoretic techniques.													
CO5	Will understands various methods like centrifugation, immunological techniques, pH meter, DNA sequencing methods.													

Class	M.Sc. I	Course Outcomes	Program Outcomes									PSOs		
Subject Code	40105		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	BO 1.5: Practicals based on BO 1.1 & BO 1.4	CO1	2	2	2	2	2	2	2	2	2	2	2	2
Semester No	I	CO2	2	2	2	2	2	2	2	2	2	2	2	2
Teacher Name	Dr. Prasad Y. Lamrood, Dr. Nisha H. Godse	CO3	2	2	2	2	3	3	2	3	3	3	3	2
Course Outcomes		CO4	3	2	2	2	3	3	3	3	3	3	3	3
CO1	Students will understand the diffference between morpholgical and anatomical structures.	CO5	3	2	3	2	3	3	3	2	3	3	3	3
CO2	Students will understand the primitive to advanced differences of reproductive structures in bryophytes	Average	2.40	2.00	2.20	2.00	2.60	2.60	2.40	2.40	2.60	2.60	2.60	2.40

	CO3	Students will get hands on experience with various microscopic, spectrophotometric techniques, They will also learn about immunology techniques
	CO4	Ability to learn chromatographic techniques Enzymological and techniques will learn by the students
	CO5	Cytochemical techniques will learn by the students

Class	M.Sc. I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	40106		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	BO 1.6 PRACTICAL ON BO 1.2 & 1.3	CO1	3	3	3	3	2	3	2	3	2	3	3	2
Semester No	I	CO2	2	3	2	2	3	3	3	3	2	3	3	3
Teacher Name	Mr. Sagar Bawake, Dr. Nisha H. Godse	CO3	2	2	2	2	3	3	2	3	3	3	3	2
Course Outcomes		CO4												
	CO1	CO5												
	CO2	Average	2.33	2.67	2.33	2.33	2.67	3.00	2.33	3.00	2.33	3.00	3.00	2.33
	CO3													
	CO4													
	CO5													

	CO1	Students will get hands on experience to make solutions, observing enzyme activity on substrates.
	CO2	Will able to use pH meter, to estimate soluble protein as well as amino acids from germination and non germinating seeds,
	CO3	hands on training to isolate and estimate chlorophyll and carotenoids from plants by using column chromatography and spectophotometer.
	CO4	students able to comprehend the karyotype analysis and Various plant treatment
	CO5	Students will able to understand the practical knowledge of plant breeding through various experiments.

Class	M.Sc. I	Course Outcomes	Program Outcomes	PSOs

Subject Code	40201
Subject Name	Cryptogamic Botany-II
Semester No	II
Teacher Name	Dr Sudhir Suryavanshi & Dr. Prasad Y. Lamrood
Course Outcomes	
CO1	Algal biodiversity will be studied
CO2	students will learn about importance of Algae
CO3	Students will learn about basics of fungi, classification, structure and modifications
CO4	They will learn indepth about subdivision Myxo-, Mastigo and Zygomycotina , They will learn indepth about subdivision Asco-, Basidio and Deuteromycotina
CO5	The students will get to know about fossile fungi, , The students will get to know about parasexual cycle and sex hromones

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	2	3	2	2	3	3	2	3	2	2	2	2
CO2	3	2	2	2	3	2	2	3	2	2	2	3
CO3	2	2	2	2	3	3	2	3	3	3	3	2
CO4	3	2	2	2	3	3	3	3	3	3	3	3
CO5	3	2	3	2	3	3	3	2	3	3	3	3
Average	2.60	2.20	2.20	2.00	3.00	2.80	2.40	2.80	2.60	2.60	2.60	2.60

Class	M.Sc. I
Subject Code	40202
Subject Name	CELL BIOLOGY AND EVOLUTION
Semester No	II
Teacher Name	Mr. Sagar Bawake
Course Outcomes	
CO1	Students will get knowledge about plant cell, cell theory, organization of cell, various organells and there function from plant cell.
CO2	wiil learn about nucleus & its composition, ribosomes, cytoskeleton, signal transduction and signaling molucule.
CO3	Phosphate signaling, nuclear signaling and serine threonine signaling.

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	3	3	2	3	2	2	3	3	3	3	3	3
CO2	2	2	2	2	3	2	2	2	3	3	3	3
CO3	2	2	2	2	2	2	2	2	3	3	3	3
CO4	3	3	2	2	2	3	2	2	3	3	3	3
CO5	3	3	2	2	3	2	3	3	2	3	3	3
Average	2.60	2.60	2.00	2.20	2.40	2.20	2.40	2.40	2.80	3.00	3.00	3.00

	CO4	Geting knowledge about cell cycle and cell aging process.
	CO5	They will able to understands the earth formation, Geological time scale, Origin of cells, Concepts of natural evolution, Population genetics.

Class	M.Sc. I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	40203		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	MOLECULAR BIOLOGY AND GENETIC ENGINEERING	CO1	3	3	3	1	2	2	3	3	3	3	3	3
Semester No	II	CO2	2	3	2	2	3	3	2	3	2	3	3	2
Teacher Name	Mr. Sagar Bawake	CO3	3	3	2	2	3	2	3	3	2	3	2	3
Course Outcomes		CO4	2	2	3	3	2	3	2	2	3	3	2	2
	CO1 Students will Understands the Structure and Properties of Nucleic acids, DNA replication process, DNA damage and repaire mechanism.	CO5	3	2	1	1	3	2	2	2	2	3	1	2
	CO2 Getting information about gene structure, transcription process, how translation process ocuured, and how operon works.	Average	2.60	2.60	2.20	1.80	2.60	2.40	2.40	2.60	2.40	3.00	2.20	2.40
	CO3 Students will understands the recombinant DNA technology, Various Enzyme used in genetic engineering .													
	CO4 Will understands use of vector in cloning as well as Screening and selection of recombinants.													
	CO5 Getting idea about Isolation of gene and gene libraries, Blotting Methods , and Application of Genetic Engineering.													

Class	M.Sc. I	Course Outcomes	Program Outcomes								PSOs		
Subject Code	40204		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	Plant ecology and Phytogeography	CO1	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	II	CO2	3	3	3	3	3	3	3	3	3	3	3	3

Teacher Name		Dr. Nisha Godse	CO3	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes			CO4	2	2	2	2	2	2	2	2	2	2	2	2
	CO1	Ability to learn the basic concepts of plant ecology	CO5	2	2	2	2	2	2	2	2		2	2	
	CO2	Ability to comprehend the various organizational levels of plant ecology	Average	2.55	2.55	2.21	2.07	2.47	2.37	2.39	2.47	2.51	2.80	2.48	2.60
	CO3	Ability to learn the classification of Ecosystem													
	CO4	ability to understand the various types of Pollution and its control measures													
	CO5	ability to learn the core concepts and classification of Biodiversity													

Class	M.Sc. I	Course Outcomes	Program Outcomes									PSOs		
Subject Code	40205		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	BO:2.5 Practicals based on BO 2.1 & 2.2	CO1	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	II	CO2	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name	Dr. S.S. Suryawanshi, Dr. P.Y. Lamrood Mr. Sagar Bawake	CO3	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes		CO4	3	3	2	2	2	2	2	2	2	2	3	3
CO1	Students will learn to prepare various stains and mounting medium	CO5	2	2	3	3	3	1	2	2	3	3	3	3
CO2	They will learn the vegetative and reproductive structures from Myxo-, Mastigo-Zygo-, Asco-, Basidio- and Deuteromycotina	Average	2.60	2.60	2.60	2.60	2.60	2.20	2.40	2.40	2.60	2.60	2.80	2.80
CO3	Structure of each cell will be studied													
CO4	Cytochemical / Histochemical studies of different cell types, Study of induced cell senescence in leaf discs.													
CO5	Hands on experiance on Study of programmed cell death in plants, as well as Study of different plant fossils and geological time scale.													

Class	M.Sc. I	Course Outcomes	Program Outcomes									PSOs		
Subject Code	40206		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	BO. 2.6 Practicals based on BO 2.3 & 2.4	CO1	2	2	2	2	2	2	2	2	2	2	2	3
Semester No	II	CO2	2	2	2	2	2	2	2	2	2	2	2	2

Teacher Name		Mr. Sagar Bawake Dr. Nisha Godse
Course Outcomes		
	CO1	hands on training of soil testing with various parameter
	CO2	hands on training of various parameters of water testing ,Do,BOD and COD
	CO3	Checking Effect of temperature and alkali on absorption of DNA: hyperchromicity
	CO4	Hands on traing on SDS PAGE to separate seed storage protein.
	CO5	Hands on experiance for Isolation of RNA and its quantification by UV-spectrophotometer

CO3	2	3	2	3	2	3	1	2	2	2	2	3
CO4	3	3	2	2	2	2	2	2	2	2	3	3
CO5	2	2	3	3	3	1	2	2	3	3	3	3
Average	2.20	2.40	2.20	2.40	2.20	2.00	1.80	2.00	2.20	2.20	2.40	2.80

Academic Year :	2018-19

Class		M Sc.-II	Course Outcomes	Program Outcomes									PSOs		
Subject Code		40301		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name		Spermatophytic Botany	CO1	3	3	3	3	3	3	3	3	3	3	3	3
Semester No		III	CO2	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name		Dr. A A Kulkarni & Dr. B. M Gaykar	CO3	2	2	2	2	2	2	2	2	2	2	2	2
Course Outcomes			CO4	3	3	3	3	3	3	3	3	3	3	3	3
	CO1	Students will learn about the differential characters of different spermatophytes	CO5	2	2	2	2	2	2	2	2	2	2	2	2
	CO2	Students will learn the sporophytic and Gametophytic life cycle of Gymnosperms	Average	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
	CO3	Students will get the knowlwdge about different fossils of gymnospers													
	CO4	Study of families of Angiosperms and their interrelatioship													
	CO5	Students willget the knowledge about how to use different keys to identify plants on the basis of characters													

Class		M.Sc. II	Course Outcomes	**Program Outcomes**									**PSOs**		
Subject Code		40302		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name		Developmental and Economic Botany	CO1	3	2	2	3	2	2	3	2	2	3	2	2
Semester No		III	CO2	3	2	3	2	2	3	2	2	2	2	3	3
Teacher Name		Dr. Prasad Y. Lamrood	CO3	2	2	2	2	2	2	2	2	3	3	2	3
Course Outcomes			CO4	3	2	2	3	2	2	3	2	2	2	2	2
	CO1	Students will learn variouis processes involved in plant development	CO5	3	2	2	3	2	2	3	2	2	2	2	2

	CO2	They will learn various aspects of Embryological Aspects of Development	Average	2.80	2.00	2.20	2.60	2.00	2.20	2.60	2.00	2.20	2.40	2.20	2.40
	CO3	Physiological and molecular aspects of plant development will be learned by the students													
	CO4	In the economic botany aspect students will learn Source, method of cultivation of various crops													
	CO5	In the economic botany aspect students will learn economic uses of various crops													

Class	M.Sc. II	Course Outcomes	Program Outcomes									PSOs		
Subject Code	40303		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	BO 3.3 Industrial Botany	CO1	3	3	2	3	2	2	3	3	3	3	3	3
Semester No	III	CO2	2	2	2	2	3	2	2	2	3	3	3	3
Teacher Name	Mr. Sagar Bawake	CO3	2	2	2	2	2	2	2	2	3	3	3	3
Course Outcomes		CO4	3	3	2	2	2	3	2	2	3	3	3	3
CO1	Students will able to understands algal technology, food like Spirullina from algae, fodder from algae.	CO5	3	3	2	2	3	2	3	3	2	3	3	3
CO2	Student will get information about biopesticide, its type and application in agriculture.	Average	2.60	2.60	2.00	2.20	2.40	2.20	2.40	2.40	2.80	3.00	3.00	3.00
CO3	Students will able to understands biofuel technology, concept of biodisel, ources for bioethanol production, concept of Bio-hydrogen.													
CO4	Students will able to understands Fermentation Technology, Alcohol and Beverage Industry, Organic Acid Industry, Antibiotic Industry.													
CO5	Students will able to understands Entrepreneurship and Management, Institutional Finance to Entrepreneurs.													

Class	M.Sc. II	Course Outcomes	Program Outcomes									PSOs		
Subject Code	40309		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name	BO 3.46 Advanced Medicinal Botany	CO1	3	3	2	3	2	2	3	3	3	1	3	2

Semester No		III	CO2	2	2	2	3	3	2	3	3	3	3	2	3
Teacher Name		Mr. Sagar Bawake	CO3	2	3	2	2	3	2	2	2	2	2	3	2
Course Outcomes			CO4	3	3	2	3	2	3	3	3	2	3	3	1
	CO1	Students will understand the Pharmacognocy, traditional sysytem of medicine, crude drug and its classification.	CO5	3	3	2	2	3	2	3	3	2	3	3	3
	CO2	They will aquired knowledge about collection and processing drugs, drug adultration, drug evaluationits quality control.	Average	2.60	2.80	2.00	2.60	2.60	2.20	2.80	2.80	2.40	2.40	2.80	2.20
	CO3	They will able to understands pathways to produced secondary metabolites,													
	CO4	able to learns about the herbal drugs and its source, cultivation, collection and there characters.													
	CO5	Learning about industrial aspect of herbal plants in neutraceuticals and cosmaceuticals.													

Class		M.Sc. II	Course Outcomes	Program Outcomes									PSOs		
Subject Code		40314		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Name		BO 3.5 Practicals Based on BO 3.1, BO 3.2 and BO 3. 3	CO1	2	2	2	2	2	2	2	2	2	2	2	2
Semester No		III	CO2	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name		Prof. B.M.Gaykar, Prof. A.A. Kulkarni & Dr. Prasad Y. Lamrood	CO3	2	3	2	3	3	3	2	2	3	3	3	3
Course Outcomes			CO4	2	2	2	2	2	3	2	3	2	2	2	3
	CO1	Study of families of Angiosperms and their interrelatioship	CO5	2	2	2	2	2	3	2	3	2	2	2	3
	CO2	Students will perform practicals on how to use different keys to identify plants on the basis of characters	Average	2.20	2.40	2.20	2.40	2.40	2.80	2.20	2.60	2.40	2.40	2.40	2.80
	CO3	Studnts will get the practical knowledge about identification and economic imporatnce of Gymnosperms													
	CO4	Students will learn to isolate meristems, embryo, endosperms, development of microspore, megaspore, endosperms													
	CO5	In vitro Somatic embryogenesis will be learnt, In vitro Somatic organogenesis will be learnt													

Class		M.Sc. II
Subject Code		40315
Subject Name		BO 3.6 Practicals based on BO 3.46 Advanced Medicinal Botany
Semester No		III
Teacher Name		Mr. Sagar Bawake
Course Outcomes		
	CO1	Hands on experiance to analyze the crude drugs, its purity by characters, histochemical analysis.
	CO2	Hands on trainig on estimation of alkaloids & glycosides, studying biological activity of plants.
	CO3	Learing about how to isolate essential oil & oleioresin from herbal plants,
	CO4	Hands on training for preparation of herbal foods and herbal cosmetics
	CO5	Field visit for ethnobotanic survey and industrial visit to pharmaceuticals.

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	2	3	1	1	1	3	3
CO2	2	3	3	3	3	3	1	3	2	2	2	3
CO3	2	3	3	2	3	3	2	2	2	2	3	2
CO4	3	3	3	3	2	2	3	3	2	3	3	2
CO5	3	3	2	2	3	2	3	3	2	3	3	3
Average	2.60	3.00	2.80	2.60	2.60	2.40	2.40	2.40	1.80	2.20	2.80	2.60

Class		M.Sc. II
Subject Code		40401
Subject Name		BO 4.1 Computational Botany
Semester No		IV
Teacher Name		Prof. A.A.Kulkarni
Course Outcomes		
	CO1	Students will get the knowledge about different staistical tests
	CO2	Students will understand the importance of Tests of significsnces
	CO3	Students will learn different field designs which would be useful in palnning for experimental set up
	CO4	Students would get the knowledge of analytical methods
	CO5	students will learn the concept of Bioinformatics and its application

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	2	2	2	2	2	2	2	2	2	2	2
Average	3.00	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80

Class	M.Sc. II
Subject Code	40402
Subject Name	BO 4.2 Plant–Organism Interactions
Semester No	IV
Teacher Name	Mr. Sagar Bawake

Course Outcomes		
	CO1	Students will understands the plant plant intercation like allelopathy, parasitism, and epiphytic nature.
	CO2	Students will understands the plant - animal or insect intercation as well as carnivorous plants.
	CO3	They will understands th symbiotic assoction of plant and other organism like algae, fungi, bacteria etc.
	CO4	They will understands the pollination process in plants, co evolution of pollinater with flower.
	CO5	Understanding the Seed dispersal mechanisms in plants.

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	1	1	2	3	2	1	3	3	2	2	1	1
CO2	2	2	3	2	3	3	3	2	3	3	3	3
CO3	2	2	1	2	2	2	3	2	1	2	2	2
CO4	3	2	1	2	2	2	2	2	2	3	1	1
CO5	3	3	2	2	3	2	3	3	2	3	3	3
Average	2.20	2.00	1.80	2.20	2.40	2.00	2.80	2.40	2.00	2.60	2.00	2.00

Class	M.Sc. II
Subject Code	40403
Subject Name	BO 4.3 Industrial Botany
Semester No	IV
Teacher Name	Mr. Sagar Bawake

Course Outcomes		
	CO1	Able to understand herbal technology, medicinal plants from Atharva veda.
	CO2	Able to understands plants used in cosmatics.
	CO3	Able to understands gardening, its types and forest botany.
	CO4	Able to understands plant tissue culture, micropropogation of banana etc.
	CO5	Abilty to understands post harvest technology of Fruits, processing etc.

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	1	1	2	3	2	1	3	3	2	2	1	1
CO2	2	2	3	2	3	3	3	2	3	3	3	3
CO3	2	2	1	2	2	2	3	2	1	2	2	2
CO4	3	2	1	2	2	2	2	2	2	3	1	1
CO5	3	3	2	2	3	2	3	3	2	3	3	3
Average	3.00	2.50	1.50	2.00	2.50	2.00	2.50	2.50	2.00	3.00	2.00	2.00

Class	M.Sc. II
Subject Code	40404
Subject Name	BO 4.4. Plant Pathology
Semester No	IV
Teacher Name	Dr. Prassad Y. Lamrood
Course Outcomes	
CO1	Students will learn various aspects of plant pathology,
CO2	They will learn indetailed process of pathogenesis
CO3	Process of disease development, genetics of disease development, defense mechanism will be learnt
CO4	Various disease management will be studies by the students
CO5	Various disease related aspects will be studies by the students

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	1	1	2	3	2	2	3	3	2	2	2	2
CO2	2	2	3	2	3	3	3	2	3	3	3	3
CO3	2	2	2	2	2	2	3	2	1	2	2	2
CO4	3	2	2	2	2	2	2	2	2	3	1	1
CO5	3	3	2	2	3	2	3	3	2	3	3	3
Average	2.20	2.00	2.20	2.20	2.40	2.20	2.80	2.40	2.00	2.60	2.20	2.20

Class	M.Sc. II
Subject Code	40405
Subject Name	BO 4.5 Practicals based on BO 4.1,BO 4.2, BO 4. 3 and BO 4.4
Semester No	IV
Teacher Name	Prof. A.A.Kulkarni, Mr. Sagar Bawake, Dr.P.Y. Lamrood
Course Outcomes	
CO1	Students will get the information about use of stastistical methods to solve problems related to research, agriculture and medicine
CO2	They will isolate, culture and study Koch's postulate
CO3	Hands on experiance on observing parasitic association of plants, seed dispersal mechanism, alleopathic effect and Nodulation.
CO4	Able to Extraction of essential oil by Soxhlet apparatus

Course Outcomes	Program Outcomes									PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	2	2	3	3	3	2	3	2	2	3	3
CO5	2	3	3	3	2	2	2	2	3	2	3	2
Average	2.60	2.60	2.60	2.80	2.60	2.60	2.40	2.60	2.60	2.40	2.80	2.60

	CO5	Able to learn Micropropagation of banana, sugarcane and Lilium

			Course Outcomes	Program Outcomes									PSOs		
Class		M.Sc. II		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3
Subject Code		40406													
Subject Name		BO 4.6 Practicals based on Research Methodlogy (Project)	CO1	3	3	3	3	3	3	3	3	3	3	3	3
Semester No		IV	CO2	3	3	3	3	3	3	3	3	3	3	3	3
Teacher Name		All Teachers	CO3	3	3	3	3	3	3	3	3	3	3	3	3
Course Outcomes			CO4	3	3	3	3	3	3	3	3	3	3	3	3
	CO1	Development of Reserach Idea & Litrature Review	CO5	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	Designing of Experiments	Average	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	CO3	Data Collection and Analysis													
	CO4	Report writing in scientific english													
	CO5	Presenttaion and Publication.													

CO-PO Mapping

			Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
		1	40101	1.80	2.40	2.20	2.00	2.40	2.00	2.20	2.20	2.20
		2	40102	2.60	2.60	2.60	2.20	2.80	2.80	2.20	2.60	2.60
		3	40103	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
		4	40104	2.40	2.60	2.40	2.40	2.80	3.00	2.00	2.40	2.60
		5	40105	2.40	2.00	2.20	2.00	2.60	2.60	2.40	2.40	2.60
		6	40106	2.33	2.67	2.33	2.33	2.67	3.00	2.33	3.00	2.33
		7	40201	2.60	2.20	2.20	2.00	3.00	2.80	2.40	2.80	2.60
		8	40202	2.60	2.60	2.00	2.20	2.40	2.20	2.40	2.40	2.80
		9	40203	2.60	2.60	2.20	1.80	2.60	2.40	2.40	2.60	2.40
		10	40204	2.55	2.55	2.21	2.07	2.47	2.37	2.39	2.47	2.51
		11	40205	2.60	2.60	2.60	2.60	2.60	2.20	2.40	2.40	2.60
FY	FY	12	40206	2.20	2.40	2.20	2.40	2.20	2.00	1.80	2.00	2.20
		1	40301	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
		2	40302	2.80	2.00	2.20	2.60	2.00	2.20	2.60	2.00	2.20
		3	40303	2.60	2.60	2.00	2.20	2.40	2.20	2.40	2.40	2.80
		4	40309	2.60	2.80	2.00	2.60	2.60	2.20	2.80	2.80	2.40
		5	40314	2.20	2.40	2.20	2.40	2.40	2.80	2.20	2.60	2.40
		6	40315	2.60	3.00	2.80	2.60	2.60	2.40	2.40	2.40	1.80
		7	40401	3.00	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
		8	40402	2.20	2.00	1.80	2.20	2.40	2.00	2.80	2.40	2.00
		9	40403	3.00	2.50	1.50	2.00	2.50	2.00	2.50	2.50	2.00
		10	40404	2.20	2.00	2.20	2.20	2.40	2.20	2.80	2.40	2.00
		11	40405	2.60	2.60	2.60	2.80	2.60	2.60	2.40	2.60	2.60
SY	SY	12	40406	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
1.8	2.4	2.2	2	2.4	2	2.2	2.2	2.2
1.768	1.768	1.768	1.496	1.904	1.904	1.496	1.768	1.768
2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
1.248	1.352	1.248	1.248	1.456	1.56	1.04	1.248	1.352
2.4	2	2.2	2	2.6	2.6	2.4	2.4	2.6
2.333333	2.666667	2.333333	2.333333333	2.666667	3	2.333333	3	2.333333
2.184	1.848	1.848	1.68	2.52	2.352	2.016	2.352	2.184
1.352	1.352	1.04	1.144	1.248	1.144	1.248	1.248	1.456
1.352	1.352	1.144	0.936	1.352	1.248	1.248	1.352	1.248
1.324267	1.324267	1.150933	1.074666667	1.282667	1.234133	1.241067	1.282667	1.307429
2.6	2.6	2.6	2.6	2.6	2.2	2.4	2.4	2.6
2.2	2.4	2.2	2.4	2.2	2	1.8	2	2.2
1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352	1.352
1.904	1.36	1.496	1.768	1.36	1.496	1.768	1.36	1.496
1.352	1.352	1.04	1.144	1.248	1.144	1.248	1.248	1.456
2.6	2.8	2	2.6	2.6	2.2	2.8	2.8	2.4
2.2	2.4	2.2	2.4	2.4	2.8	2.2	2.6	2.4
2.6	3	2.8	2.6	2.6	2.4	2.4	2.4	1.8
1.56	1.456	1.456	1.456	1.456	1.456	1.456	1.456	1.456
1.144	1.04	0.936	1.144	1.248	1.04	1.456	1.248	1.04
1.56	1.3	0.78	1.04	1.3	1.04	1.3	1.3	1.04
1.144	1.04	1.144	1.144	1.248	1.144	1.456	1.248	1.04
2.6	2.6	2.6	2.8	2.6	2.6	2.4	2.6	2.6
3	3	3	3	3	3	3	3	3

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
100	100	100	100	100	100	100	100	100
68	68	68	68	68	68	68	68	68
100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
84	84	84	84	84	84	84	84	84
52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52
68	68	68	68	68	68	68	68	68
52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100

FY

SY

CO-PSO MAPPING

	Course	PSO1	PSO2	PSO3
1	40101	2.40	2.40	2.40
2	40102	2.80	3.00	2.80
3	40103	2.60	2.60	2.60
4	40104	2.80	3.00	2.80
5	40105	2.60	2.60	2.40
6	40106	3.00	3.00	2.33
7	40201	2.60	2.60	2.60
8	40202	3.00	3.00	3.00
9	40203	3.00	2.20	2.40
10	40204	2.80	2.48	2.60
11	40205	2.60	2.80	2.80
12	40206	2.20	2.40	2.80
1	40301	2.60	2.60	2.60
2	40302	2.40	2.20	2.40
3	40303	3.00	3.00	3.00
4	40309	2.40	2.80	2.20
5	40314	2.40	2.40	2.80
6	40315	2.20	2.80	2.60
7	40401	2.80	2.80	2.80
8	40402	2.60	2.00	2.00
9	40403	3.00	2.00	2.00
10	40404	2.60	2.20	2.20
11	40405	2.40	2.80	2.60
12	40406	3.00	3.00	3.00

CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
40101	2.4	2.4	2.4
40102	1.904	2.04	1.904
40103	2.6	2.6	2.6
40104	1.456	1.56	1.456
40105	2.6	2.6	2.4
40106	3	3	2.333333
40201	2.184	2.184	2.184
40202	1.56	1.56	1.56
40203	1.56	1.144	1.248
40204	1.456	1.2896	1.352
40205	2.6	2.8	2.8
40206	2.2	2.4	2.8
40301	1.352	1.352	1.352
40302	1.632	1.496	1.632
40303	1.56	1.56	1.56
40309	2.4	2.8	2.2
40314	2.4	2.4	2.8
40315	2.2	2.8	2.6
40401	1.456	1.456	1.456
40402	1.352	1.04	1.04
40403	1.56	1.04	1.04
40404	1.352	1.144	1.144
40405	2.4	2.8	2.6
40406	3	3	3

Percentage CO-PSO ATTAINMENT

Course	PSO1	PSO2	PSO3
40101	100	100	100
40102	68	68	68
40103	100	100	100
40104	52	52	52
40105	100	100	100
40106	100	100	100
40201	84	84	84
40202	52	52	52
40203	52	52	52
40204	52	52	52
40205	100	100	100
40206	100	100	100
40301	52	52	52
40302	68	68	68
40303	52	52	52
40309	100	100	100
40314	100	100	100
40315	100	100	100
40401	52	52	52
40402	52	52	52
40403	52	52	52
40404	52	52	52
40405	100	100	100
40406	100	100	100