Bharati Vidyapeeth's
Matoshri Bayabai Shripatrao Kadam Kanya Mahavidyalaya, Kadegaon

Program Outcomes, Program Specific Outcomesand Course Outcomes

2019-20

Science B.Sc.
Botany

Programme Outcomes

PO1.**Knowledge and understanding :** 1. The range of plant diversity in terms of structure, function and environmental relationships. 2. The evaluation of plant diversity.3.Plant classification and the flora of Maharashtra. 4. The role of plants in the functioning of theglobal ecosystem. 5. A selection of more specialized, optional topics. 6. Statistics as appliedtobiological data.

PO2. **Intellectual skills–able to:** 1.Think logically and organize tasks into a structured form.
2. Assimilate knowledge and ideas based on wide reading and through the internet.3.Transfer of appropriate knowledge and methods from one topic to another within the subject.
4. Understand the evolving state of knowledge in a rapidly developing field. 5. Construct and test hypothesis. 6.Plan, conductand write areportonan independent termproject.

PO3. **Practical skills:** Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the followings kills and gain greater proficiency in a selection of them depending on their choice ofoptional modules. 1. Interpreting plant morphology and anatomy. 2. Plant identification. 3.Vegetation analysis techniques. 4. A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry. 5. Analyzed at a using appropriate statistical methods and computer packages.

PO4. **Transferable skills:** 1. Use of IT (word-processing, use of internet, statistical packages and databases). 2. Communication of scientific ideas in writing and orally. 3. Ability to work as part of a team.4. Ability to use library resources. 5. Time management. 6. Career planning.

PO5. **Scientific Knowledge:** Apply the knowledge of basic science, life sciences and fundamental

process of plants to study and analyze any plant form.

PO6. **Problem analysis**: Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.

PO7. **Design/development of solutions**: Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phyto chemical content of plants which meet the specified needs to appropriate consideration for the public health

PO8.**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, anddevelopmentof the information to provide valid conclusions.

PO9.**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.

PO10. **The Botanist and society**: Apply reasoning in formed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.

PO11. **Environment and sustainability**: Understand the impact of the plant diversity in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO12. **Ethics**: Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.

PO13. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO16.**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcomes of B.Sc. Botany

CO1. Critically evaluation of ideas and arguments by collection relevant information about theplants, so as recognize the position of plant in the broad classification and phylogeneticlevel.

CO2. Identify problems and independently propose solutions using creative approaches,

CO3. Accurately interpretation of collected in formation and use taxonomical information to evaluate and formulate a position of plant in taxonomy.

CO4. Students will be able to apply the scientific method to questions in botany by formulatingtestable hypotheses, collecting data that address these hypotheses, and analyzing those datatoassess thedegreeto which theirscientificworksupports their hypotheses.

CO5. Students will be able to present scientific hypotheses and data both orally and in writing intheformats thatareusedbypracticingscientists.

CO6. Students will be able to access the primary literature, identify relevant works for a particulartopic,and evaluatethe scientificcontent ofthese works.

CO7. Students will be able to apply fundamental mathematical tools (statistics, calculus) andphysicalprinciples(physics,chemistry) totheanalysisof relevantbiologicalsituations.

CO8. Students will be able to identify the major groups of organisms with an emphasis on plantsand be able to classify them within a phylogenetic framework. Students will be able tocompare and contrast the characteristics of plants, algae, and fungi that differentiate themfromeach otherandfromotherforms of life.

CO9. Students will be able to use the evidence of comparative biology to explain how the theory ofevolution offers the only scientific explanation for the unity and diversity of life on earth.They will be able to use specific examples to explicate how descent with modification hasshapedplant morphology, physiology, and lifehistory.

CO10. Students will be able to explain how Plants function at the level of the gene, genome, cell,tissue,Flowerdevelopment.Drawinguponthisknowledge,they willbeabletogivespecific examples of the physiological adaptations, development, reproduction and mode oflifecyclefollowed bydifferent forms ofplants.

CO11. Students will be able to explain the ecological interconnectedness of life on earth by tracingenergy and nutrient flow through the environment. They will be able to relate the physicalfeaturesoftheenvironmenttothe structureof populations,communities,and ecosystems.

CO12.Studentswillbeabletodemonstrateproficiencyintheexperimentaltechniquesandmethodsof analysisappropriate fortheirareaofspecialization withinbiology.

Programme Specific Outcomes: **PSOs of B.Sc.**

Botany:B.Sc.Part-I,Semester-I

Paper-I:Diversityin NonvascularPlants

Oncompletionofthecourse,studentsareableto:

1. UnderstandthediversityamongAlgae.
2. Know the systematic, morphology and structure, of Algae.Understandthelifecycle patternofAlgae.
3. UnderstandtheusefulandharmfulactivitiesofAlgae.
4. UnderstandtheBiodiversityofFungi
5. Knowthe Economic ImportanceofFungi
6. Understandthemorphologicaldiversityof Bryophytes.
7. Understandtheeconomicimportanceof theBryophytes.

PaperII:PlantBiochemistry, PhysiologyandEcology

Oncompletionofthecourse,students areableto:

1. Understandthe Biochemicalnatureofcell.
2. Knowthechemical natureofbiomolecules.
3. Understandthedifferenttypesofinteractioninbiomolecules.
4. Structureandgeneral featuresofenzymes.
5. Conceptof enzymeactivityand enzymeinhibition.
6. Learn aboutthemovementof sapandabsorptionofwaterinplantbody.

6.Understandtheplantmovements.

Semester-II:

Paper-III:DiversityinVascularPlants:

Oncompletionofthecourse,students areableto:

1. UnderstandthemorphologicaldiversityofBryophytesandPteridophytesandGymnosperms.
2. UnderstandtheeconomicimportanceoftheBryophytesandPteridophytesandGymnosperms.
3. KnowtheevolutionofBryophytes andPteridophytesandGymnosperms.
4. Understandthehabitoftheangiospermplantbody.
5. Knowthevegetativecharacteristicsoftheplant.
6. Learnaboutthereproductivecharacteristicsoftheplant.
7. Understandthe plantmorphologyandbasictaxonomy.

PaperIV:Cytology, GeneticsandUtilizationofPlants:

Oncompletionofthecourse, studentsareable tounderstand

1. Theeukaryoticcellcycle andmitoticandmeioticcelldivision
2. Structureandorganizationofcellmembrane
3. Processofmembranetransport andmembranemodels
4. MendelianandNeo-mendeliangenetics
5. To study the phenomenon of dominance, laws of segregation, independent assortment ofgenes.
6. To understand the different types of genetic interaction, incomplete dominance, codominance,interallelic geneticinteractions,multipleallelesandquantitative inheritanceetc.

B.Sc.Part-II,Semester-III

Paper-V:Algae,Fungi,Bryophytesandindustrialapplications

Oncompletionofthecourse,students areable to:

1) UnderstandthediversityamongAlgae.
2) Knowthesystematic,morphologyandstructure,ofAlgae.
3) Understandthelifecycle patternofAlgae.
4) UnderstandtheusefulandharmfulactivitiesofAlgae.
5) UnderstandtheBiodiversityofFungi
6) Knowthe Economic ImportanceofFungi
7) UnderstandthemorphologicaldiversityofBryophytes.

8) UnderstandtheeconomicimportanceoftheBryophytes.
9) Knowthetaxonomicposition,occurrence,thallusstructure,reproductionofBryophytes.
10) Becomeawareofapplicationsofdifferent plantsinvariousindustries.
11) Tohighlightthepotentialofthesestudiestobecomeanentrepreneur.
12) Toequipthestudentswithskillsrelatedtolaboratoryas wellasindustries basedstudies

Paper-VI:PlantPhysiology,EcologyandHorticulture

Oncompletionofthecourse,students areableto:

1. Knowimportance andscopeofplantphysiology.
2. 2Understandtheplantsandplantcellsinrelationtowater.
3. Understand the process of photosynthesis in higher plants with particular emphasis on lightanddark reactions, C3 and C4pathways.
4. Understand the respiration in higher plants with particular emphasis on aerobic and anaerobicrespiration.
5. Learn about themovement of sapand absorptionofwaterinplant body
6. Understandtheplant movements.

B.Sc. Part-II, Semester-IV:

Paper VII: Pteridophytes, Gymnosperms, Angiosperms and Anatomy Oncompletion ofthe course, students areableto:

1. Knowthe scope and importanceof thediscipline.
2. Understandplantcommunitiesandecologicaladaptationsinplants.
3. Knowthe concept of methodologyintaxonomy.
4. Learn aboutconservation ofbiodiversity, Non-conventionalEnergyandPollution.
5. Discoverbotanicalregionsof Indiaandvegetationtypesof Maharashtra.
6. Understand Bioremediation,Globalwarmingandclimatechange.

PaperVIII:CytogeneticsandUtilizationofPlantResources

1. Oncompletionofthecourse,students areableto:
2. Gainknowledgeabout“CellScience”.
3. UnderstandCellwallPlasmamembrane,Cellorganellesandcelldivision.
4. Learnthescopeandimportanceofmolecularbiology.
5. Understand the biochemical nature of nucleic acids, their role in living systems, experimentalevidencesto proveDNAas ageneticmaterial.
6. Understandtheprocessofsynthesisofproteinsandroleof geneticcodeinpolypeptide

formation.

7. Understandthe roleplants inhumanwelfare.
8. Gainknowledge aboutvariousplantsofeconomicuse.
9. Knowimportanceofplants &plantproducts.
10. Understandthe chemicalcontentsoftheplantproducts.
11. Knowabout theutilityofplantresources.

B.Sc.Part-III:

Semester-V

Paper-IX:BiologyofNonVascularPlantsand Paleobotany.

Oncompletionofthecourse,studentsareableto:

1) UnderstandthediversityamongAlgae.
2) Knowthesystematic,morphologyandstructure,ofAlgae.
3) Understandthelifecycle patternofAlgae.
4) UnderstandtheusefulandharmfulactivitiesofAlgae.
5) UnderstandtheBiodiversityofFungi
6) Knowthe Economic ImportanceofFungi
7) Understandthemorphologicaldiversityof Bryophytes.
8) Understandtheeconomicimportanceof theBryophytes.
9) Knowthetaxonomicposition,occurrence,thallusstructure,reproductionofBryophytes.
10) Know the scope of Paleobotany, types of fossils, its role in blobal economy and geologicaltimescale.
11) Understandthevariousfossilgenerarepresentingdifferentfossilgroups.

Paper– X:GeneticsandAnalyticalTechniquesinPlantScience.

1. Understand the biochemical nature of nucleic acids, their role in living systems, experimentalevidencesto proveDNAas ageneticmaterial.

2. Understand the process of synthesis of proteins and role of genetic code in polypeptideformation.

3. Know the details of Microscopy- Principles of light microscopy, electron microscopy (TEMand SEM).

4. Understand &performChromatographyandculturaltechniquesinBotany.

5. Understandthemethodsusedin Micrometry,MicrotomyandMicrophotography.

Paper– XI: Fundamentalsof PlantPhysiologyandEcology

Oncompletion ofthe course,students areable to:

1) Learn andunderstandaboutmineralnutritioninplants.

2) Understandthegrowthand developmentalprocesses inplants.

3) KnowaboutPhotosynthesisand Respirationinplants.

4) Understandtheprocessoftranslocation ofsolutes inplants

5) Knowthenitrogenmetabolismanditsimportance.

PaperXII:PlantBiochemistry

1) UnderstandthepropertiesofMonosaccharides,OligosaccharidesandPolysaccharides.
2) TheywilllearnaboutthesignificanceofCarbohydrates.
3) UnderstandthePropertiesof saturated fattyacids,and unsaturated fattyacids.
4) Understandlipid metabolisminplants.
5) Understand the Beta Oxidation, Gluconeogenesis and its role in mobilization of fatty acidsduringgermination.
6) TheywilllearnaboutthesignificanceoflipidS.
7) TheywillbeableTounderstandBrief outlineofbiosynthesis ofaminoacid.
8) Understand the protein - structure and classification and protein biosynthesis in prokaryotesandeukaryotes.
9) Theywilllearnabout the nucleicacidmetabolism.

Semester VI:-

Paper–XIIIBiologyofVascularPlants

Oncompletionofthecourse,students areableto:

1) UnderstandthediversityofGymnospermsinIndia
2) Know the evolutionary trends and affinities of living gymnosperms with respect to externalandinternal features
3) Knowtheconceptual development of„taxonomy"and „systematics"
4) UnderstandthePhylogenyof angiosperms-A generalaccountoftheoriginofAngiosperms.
5) Understandthe generalrangeofvariations inthegroupofangiosperms.
6) Tracethe historyofdevelopment of systems ofclassification emphasizing angiospermictaxa.
7) Tolearnthewideactivitiesinangiospermand trendsinclassification.
8) Learn aboutthecharactersof biologicallyimportantfamiliesofangiosperms.
9) Knowthefloralvariations inangiospermicfamilies,their phylogenyandevolution.
10) Understand various rules, principles and recommendations of plant nomenclature produces inplantidentification.
11) Understandmajorevolutionarytrendsin various partsofangiospermicplants
12) Knowthemethods ofpollination andfertilization.

13) Knowfertilization,endospermandembryogeny.

14) Understandthescope &importanceofAnatomy.

15) Knowvarioustissuesystems.

16) Understandthenormaland anomaloussecondarygrowth inplantsand theircauses.

17) Performthetechniquesinanatomy.

18) With respect to recent knowledge students should know about the different tools in thetaxonomyso as to relocatethe phylogeneticposition ofplant ortaxa.

Paper– XIV-MicrobiologyandPlantPathology:

Oncompletionofthecourse,students areableto:

1) Understandthe concept,principleandtypesofsterilizationmethods.

2) Knowtheconceptandcharacteristicsofantiseptic,disinfectantandtheirmodeofaction.

3) Knowthecultivationmethodsofbacteria,yeast,fungiandvirus.

4) Principle, working and applications of instruments viz, pH meters, spectrophotometer,centrifuge,viscometer,and laminarairflow.

5) UnderstandtheMicrobialGeneticsandRecombinationinBacteria.

6) Knowtheterminologiesinplantpathology.

7) UnderstandthescopeandimportanceofPlantPathology.

8) Know the prevention and control measures of plant diseases and its effect on economy ofcrops.

Paper– XV:Plantbreeding,Biostatistics,EthnobotanyandHorticulture

Oncompletionofthecourse,students areableto:

1. Understandthescienceofplantbreeding.
2. To introduce the student with branch of plant breeding for the survival of human being fromstarvation.
3. Tostudythe techniques ofproduction ofnewsuperiorcropverities.
4. Understand the modern strategies applied in Genetics and Plant Breeding to sequence andanalyze genomes
5. Get the detail knowledge about modern strategies applied in Plant Breeding for cropimprovementi.e.Mass selection,PurelineSelectionand Clonalselection.
6. Know about exploitation of Heterosis, hybrid and variety development and their releasethroughartificial hybridization.
7. Understandthe roleplants inhumanwelfare.
8. Gainknowledge aboutvariousplantsofeconomicuse.
9. Knowimportanceofplants &plantproducts.
10. Understandthe chemicalcontentsoftheplantproducts.

11. Knowabout theutilityofplantresources.

Paper– XVIMolecularBiologyandBiotechnology:

OncompletionofthecourseStudentsareabletoUnderstand

1) Know about the genomic organization or living organisms, study of genes genome,chromosomeetc.
2) Gain knowledge about the mechanism and essential component required for prokaryotic DNAreplication.
3) Understandthe fundamentalsofRecombinantDNATechnology.
4) KnowabouttheGeneticEngineering.
5) Understandtheprinciple andbasicprotocolsforPlantTissueCulture.
6) Theconcept of operon and itsstructureandregulation.

B.Sc.Mathematics

ProgrammeOutcomes

PO17. **Knowledge and understanding of:** On completion of this programme the successfulstudentwill haveknowledgeand understandingof:

1. Core areas of pure mathematics including geometry, algebra, mathematical analysis anddiscretemathematics;

2. Core areas of applied mathematics including statistics, operational research anddifferentialequations;

3. Severalspecializedareasofadvancedmathematicsanditsapplications;

4. The correct use of mathematical language to express both theoretical concepts andlogicalargument;

5. Theuse of computers bothas an aid and as a tool tostudyproblems inmathematics.

PO18. **Cognitive(thinking)skills –ableto:**

1. Thinklogicallyand organizetasks into astructuredform.

2. Assimilateknowledgeand ideasbased onwidereading andthrough theinternet.

3. Transfer of appropriate knowledge and methods from one topic to another within thesubject.

4. Understandthe evolvingstateof knowledgeinarapidlydevelopingfield.

5. Constructandtest hypothesis.

6. Plan,conductandwrite areportonanindependent termproject.

7. Formulateproblemsinappropriatetheoreticalframeworkstofacilitatetheirsolution;

8. Developstrategiestosolvemathematicalproblemsinarangeofrelevantareas;

9. Constructlogicalargumentssolvingabstractorappliedmathematicalproblems;

10. Criticizemathematical argumentsdeveloped bythemselvesandothers.

PO19.**Practicalskills:** Oncompletionofthe programmethesuccessful studentwillbe ableto:

1. Solvepracticalproblemsinarangeofareasofmathematics;
2. Determinethe appropriatenessofdifferentmethodsofsolvingmathematicalproblems;
3. Communicatemathematicseffectivelytoa wide rangeofaudiences;
4. Use computer packages where appropriate to develop a deeper understanding ofmathematicalproblems.

PO20.**Transferableskills:**

1. Useof IT(word-processing,useofinternet,statisticalpackagesanddatabases
2. Communicationofscientificideasinwritingandorally.
3. Abilityto work as part ofateam.
4. Abilityto use libraryresources.
5. Timemanagement.
6. Careerplanning.

PO21.**GraduateSkills:**On completionofthisprogrammethesuccessfulstudentwill beable to:

1. Workeffectivelyandconstructivelyaspart of ateam.
2. Motivateandcommunicate complexideas accuratelyusinga rangeofformats.
3. Identifyandbenefitfromopportunitiesforpersonal andcareerdevelopment.
4. Workconfidentlyand accuratelywithformulaeand numericalinformation.
5. Learneffectively.

PO22.**Individualandteamwork:**

1.Function effectively as an individual, and as a member or leader in diverse teams, and inmultidisciplinarysettings.

PO23.**Communication**:Communicateeffectivelyoncomplexengineeringactivitieswiththeengineering community and with society at large, such as, being able to comprehend andwriteeffectivereports and design documentation,make

effectivepresentations,andgive andreceiveclear instructions.

PO24.**Projectmanagementandfinance**:Demonstrateknowledgeandunderstandingoftheengineering and management principles and apply these to one's own work, as a memberandleader in ateam, tomanageprojectsand inmultidisciplinaryenvironments.

PO25.**Life-long learning:** Recognize the need for, and have the preparation and ability to engageinindependent andlife-longlearninginthebroadest contextof technological change.

CourseOutcomesofB.Sc.Mathematics

CO1. Students will be able to explain the core ideas and the techniques of mathematics at thecollegelevel.

CO2. Students will be able apply rigorous, analytic, highly numerate approach to analyze, executetasksand solveproblemsin dailylifeandat work.

CO3. Students will be able to recognize the power of abstraction and generalization, and to carryoutinvestigativemathematical work withindependent judgment.

CO4. Students will be able to setup mathematical models of real world problems and obtainsolutionsinstructured andanalyticalapproacheswith independentjudgment.

CO5. Students will be able to carry out objective analysis and prediction of quantitativeinformationwith independentjudgment.

CO6. Students will be able to demonstrate a systematic knowledge of learning processes and aprofessionalattitude in classroomteachingof mathematics and IT;

CO7. Students will be able to communicate effectively about mathematics to both lay and expertaudiencesutilizingappropriateinformation andcommunicationtechnology.

CO8. Students will be able to work independently, and to collaborate effectively in team work andteambuilding.

CO9. Students will be able to conduct self-evaluation, and continuously enrich themselves throughlifelonglearning.

CO10.Students will be able to communicate to lay audiences and arouse their interest in the beautyandprecision ofmathematical arguments and science.

CO11. Students will be able to recognize the importance of compliance with the ethics of scienceandbeingaresponsible citizentowards their communityandasustainableenvironment.

Programme Specific Outcomes: **PSOs of B.Sc.**

Mathematics:B.Sc.Part-I,Semester-I

Paper-I:Algebraandcomplexnumbers

Oncompletionofthecourse,studentsareableto:

- Understandingofoperationsonmatrices.
- Understandingtheconceptof inverseof amatrix.
- Matricesareusedinsolvinglinearequations.
- Linearequationsarevital forsolvinganydifferentialequations
- Tolearnpropertiesofcomplexnumbers.
- Tounderstandtheuse of complexnumbers inthefieldofCalculus.

PaperII:Calculus

Oncompletionofthecourse,students areableto:

- Itisusedinalmost allbranchesofengineering.
- Itisasciencethatdealswithrateof change.
- Understandingtheconceptofdifferentiation.
- UnderstandingtheconceptofIntegration.
- Itisusedinalmost allbranchesof engineering.
- Itdealswithcalculus ofseveral variables.
- TounderstandtheimportanceofTaylorsseries.
- TounderstandMeanvaluetheorem.

Semester-II:

Paper-III:Geometry

Oncompletionofthecourse,students areableto:

- Understandingtheconceptofdistancebetweentwopoints.
- Understandingtheconceptofslope.
- Understandingthechangeoforiginandchangeofscale.
- Learnvariousformsofstraightlines.
- Learnabout variousconicsections.
- ItisusedinMechanicsandAstronomy.

PaperIV:DifferentialEquations

Oncompletionofthecourse, studentsareableto:

- Tounderstandthenecessityofdifferentialequations
- Tolearnaboutformingdifferentialequationsfromphysicalsituations
- Toknowvarioustypesofdifferentialequations
- Topracticemethodsofsolutionforvarioustypesofdifferentialequations.
- It is usefulformethods ofmomentumand energytransfer.
- Itisusedinall branchesofengineering.

B.Sc.Part-II,Semester-III

Paper-V:Differentialcalculus

Oncompletionofthecourse,studentsareableto:

- StudyofRateof changeofvectorsisvectorcalculus.
- It iswidelyusedin PhysicsandMechanics.
- Tostudyvarious operationsonvectors.
- Tolearnaboutdifferentiationandintegrationofvectors.
- Tounderstandtheconceptsof gradient,divergenceandcurl.

Paper-VI:Differential Equations

Oncompletionofthecourse,students areableto:

- Itisusedinall branchesofengineering.
- It is usefulformethods ofmomentumand energytransfer.
- Tostudyexistence anduniqueness aboutsolutions.
- Tolearnaboutthesimultaneousdifferentialequations.
- Tounderstandthemethodsofsolutionfortotaldifferentialequations

B.Sc.Part-II,Semester-IV:

PaperVII:Integralcalculus

Oncompletionofthecourse,students areableto:

- Tofindarea bydoubleintegration.
- Tofindvolumebytripleintegration.
- Itisusefulformeasuringareasandvolumes.
- Itisusedinall branchesofengineering.
- Tostudydifferentiabilityandintegrability.
- Tolearnmean valuetheoremofintegralcalculus.
- Tolearnhowtosolveimproperintegrals.
- TounderstandtheimportanceofLegendrepolynomials.
- ToknowtheFourierseries.
- Tostudyhalfrangeseries.

PaperVIII:DiscreteMathematics

Oncompletionofthecourse,students areableto:

- Understandthebasicsof graphtheory.
- Tolearnoperationsongraphs.
- Tolearn aboutconnectedgraphs.

- Tounderstandvariousproblemsrelatedwithplanargraphs
- ItisusedinGenomics,networks,etc.
- Toknowaboutnumber system
- Tolearndivisionalgorithmanditsapplication
- Toknowaboutcongruenceclasses

DepartmentofMicrobiology

- **CourseOutcomes**

CO1: To make the students knowledgeable with respect to the subject and its practicableapplicability.

CO2: To promote understanding of basic and advanced concepts in microbiology.CO3:To exposethe studentsto variousemergingareasof Microbiology.

CO4:To prepare students for further studies, helping in their bright career in the subject.CO5: To expose the students to different processes used in industries and in research field.CO6:To developtheir abilityto applytheknowledgeofmicrobiologyindayto daylife.

CO7:Topreparethestudentstoacceptthe challengesinlifesciences.

CO8: To develop skills required in various industries, research labs and in the field of humanhealth.

Credits:

1. Theoryperiodof onetotwohoursperweekoverasemester.
2. Practicalperiodof3hourweekoverasemester.

Programoutcome

1. PO1.**Critical Thinking**: Take informed actions after identifying the assumptions that frameour thinking and actions, checking out the degree to which these assumptions are accurateand valid, and looking at our ideas and decisions (intellectual, organizational, and personal)fromdifferent perspectives.

PO2.**Effective Communication**: Speak, read, write and listen clearly in person and throughelectronic media in English and in one Indian language, and make meaning of the world byconnectingpeople, ideas,books, media and technology.

PO3.**SocialInteraction**:Elicitviewsofothers,mediatedisagreementsandhelpreachconclusionsin groupsettings.

PO4. **Effective Citizenship**: Demonstrate empathetic social concern and equity centred nationaldevelopment, and the ability to act with an informed awareness of issues and participate inciviclifethrough volunteering.

PO5. **Ethics**: Recognize different value systems including your own, understand the moraldimensionsofyour decisions, and accept responsibilityforthem.

PO6. **Environment and Sustainability**: Understand the issues of environmental contexts andsustainabledevelopment.

PO7. **Self-directed and Life-long Learning**: Acquire the ability to engage in independent andlife-longlearningin thebroadest contextsocio-technologicalchanges.

PSOsofBScMirobiology

PSO1.Understandthenatureandbasicconceptsofcellmicrobiology,microbialBiochemistry,Taxonomyand ecology.

PSO2.Analyzetherelationshipsamonganimals,plantsandmicrobes

PSO3.PerformproceduresasperlaboratorystandardsintheareasofMicrobiology,MicerobialBiochemistry.

PSO4. Understand the applications of Microbiology in air microbiology , aquatic & marinemicrobiology,watermicrobiology,sewagemicrobiology,microbialbiotechnology,soilmicrobiology,dairymicrobiology,foodmicrobiology,medicalmicrobiology,geomicrobiology,industrialmicrobiology

B.Sc.Chemistry

Courseoutcome/Programoutcomeandprogramspecificoutcomes.

Sr.No.	Course/Program	Course/ Program Outcomes
1.	B.Sc.	
2.	Programoutcomesubject wise(Chemistry) Onsuccessfulcompletionofthiscourseastudentwillhaveknowledgeof	

	1.B.Sc.I	2. Basicconceptsinphysical,inorganic,organic,industrialchemistry. 3. Handlingof glasswareandchemicals. 4. Techniques such as distillation, filtration,crystallization,sublimation,chromatographyetc. 5. Qualitativeandquantitativeanalysis. 6. Volumetricestimationofcommercialsamples.	
	1.B.Sc.II	2. Concepts in thermodynamics, Kinetics,electrochemistry,reaction mechanism,stereochemistry,co-ordinationcompounds,theoreticalground of inorganicmixtureseparation,gravimetricand titrimetricanalysis. 3. Analysisofcommercialsamples,solutionsandcompounds by titrimetric, gravimetric andinstrumentalmethods. 4. Samplingmethodsandinterpretationofresults. 5. Synthesisoforganicandinorganiccompounds.6.	
	1.B.Sc. III	2. Detailsoforganic,inorganic,physical,analyticalandindustrial chemistry. 3. Safe working procedures, chemical toxicology,environmental concerns, handling of chemicals,glassware and range of instruments available atgraduationlevel. 4. Syntheticandanalyticalprocedures,preparation ofsolutions,sampling,physico-chemicalanalysis. 5. Working independentlyinchemical,pharmaceutical,food, sugar, foundry, paint industries and alliedfields. 6. Thescopeofchemistryinmultidisciplinaryfields.	
3	Course/Program	Programspecificoutcome	
	1.B.Sc.Part I(SemI)	Paper I	1. Nernstdistributionlaw,applicationofdistribution law and numericalproblems. 2. Basicsofthermodynamics,

			spontaneous,nonspontaneousprocess,carnot‟scycleandnumericalproblems. 3. Chemical kinetics, rate, order andmolecularityofreaction,numericalProblems . 4. Kinetictheoryofgases,idealnon-idealgases, Boyle‟s law, Charles law andAvogadrolaw,numerical Problems. 5. Nuclearchemistry,radiation,halflife,application of radioisotopes andnumericalProblems.
		Paper II	1. Ionicsolids,BornHabercycle,radiusrationand crystalstructure. 2. Covalent bonding, VBT, VSEPRT,MOT, LCAO, MOdiagrams. 3. Arrhenius concept, Bronsted-Lowryconcept, Lewis concept, Lux-Floodconcept. 4. PropertiesofP-blockelements. 5. Chemistryofnoblegases,clathratecompounds,xenoncompounds.
	2.B.Sc.Part I(SemII)	PaperIII	1. Fundamentalbasicsoforganicreactionmechanismandreactiveintermediates. 2. Stereoisomerism,optical,geometricalisomerism,D/L,R/SandE/Zsystem. 3. Formation and reactions ofcycloalkanes,cycloalkenesandalkadienes. 4. SynthesisandapplicationsofEAA,Diethyla malonate and Grignardsreagent. 5. Aromaticity,moderntheory,Huckelsrule, electrophilic and nucleophilicreactionsin aromaticcompound.
		PaperIV	1. BasicConceptsinIndustrialChemistry 2. Water, source, uses, characteristics,potability, sterilization methods andqualitymeasurement. 3. Fuel, calorific value, octane, cetanenumber,anti-knockingagents,biofuels. 4. Unitoperations,distillation,filtration,crystallization.

			5. Fertilizers, micronutrients,classification,pollutioncaused.
	6.B.Sc.Part II(SemIII)	PaperV	1. Stereochemistry, conformationalisomerism,conformationalanalysisandstabilityof alkaneandcycloalkane. 2. Synthesisandreactionsofnaphthalene,anthraceneandphenanthrene. 3. Studyof pyrrole, pyridine,quinolineandindole 4. Namereactions,mechanisticapproachandapplications. 5. Greenchemistryprincipleandprocess.
		PaperVI	1. Introduction to analytical processes,sampling, error, accuracy, numericalproblems. 2. Theoreticalprinciplesadprocessinvolvedingravimetricanalysis. 3. Theoretical principles involved ininorganic qualitative analysis, mixtureseparation. 4. Acid base titrations usingconductometry,whistonebridge,cellconstant. 5. Samplingandanalysisoffertilizers.
	7.B.Sc.Part II(Sem IV)	PaperVII	1. Electrochemistry, Debye-Huckeltheory,Hittorf‟srule,Kohlrauschlaw,Henderson‟s equation, Numericalproblems. 2. Concept of entropy, Third law ofthermodynamics,Numericalproblems. 3. Third order reactions, Methods todetermineorderofreaction,Numerical problems 4. Physicalpropertiesofliquids,Surface tension, Viscosityand Refractiveindex.

		PaperVIII	1. First transition elements, electronicstructure, coloured ions, magneticpropertiescharacter,oxidation states,andcomplexformation. 2. Studyoflanthanides. 3. Co-ordinationchemistry, Werner‟stheory, IUPAC nomenclature, CFT,VBT,John-Tellerdistortion,CFSE. 4. Chelation,chelatingagentsEDTAand DMG
			5. HomogenousandHeterogeneouscatalysis,mechanismandapplicationofcatalysis. 6. Nonaqueoussolvents.
	8.B.Sc.Part III(SemV)	PaperIX	1. Quantum chemistry, De Brogliehypothesis,Heisenberg‟suncertaintyprinciple, Schrodinger wave equation,Quantum numbers. 2. Spectroscopy, Electromagneticspectrum, Energy level diagram,Maxwell–Boltzmandistribution,Ramanspectra. 3. Photochemistry,Laws ofphotochemistry, Photophysical andphotochemical processes, Jablonskidiagram. 4. Ideal solutions, Raoult‟s law, Phenol – water,Triethylamine– water,Nicotine –watersystem. 5. E.M.F.series,Typesofelectrodes,Numericalproblems.

		PaperX	1. Hard and Soft Acids and Bases(HSAB),Pearson‟sHSABco ncept. 2. MetalligandbondinginTransitionm etalcomplexes,Isomerism incomplexes with C.N. 4 and 6,Molecularorbitaltheory. 3. InorganicPolymers,classification, Polymer back bone, Phosphorus,Fluorocarbons, phosphonitriliccompounds,silicon es. 4. Metals,SemiconductorsandSupercond uctors,Theoriesofbondingin metal, Types of semiconductors,Superconductors: Ceramicsuperconductors, Applications ofsuperconductors. 5. Organometalliccompounds,Synthesis andstructuralstudy.
		PaperXI	1. Introduction to Spectroscopy,Electromagneti c radiation. 2. UVSpectroscopy,Beer-Lambertslaw,Woodwardand Fisher rules,

			ApplicationsofU.V.Spectroscopy. 3. IR Spectroscopy, Principle of I.R.Spectroscopy, Fundamental modes ofvibrationstypesandcalculation,Hooks Law. 4. NMR Spectroscopy, NMR-Instrumentation,Shielding,&deshielding, Chemical shift, CouplingConstant, application. 5. Massspectroscopy,Massspectrometer,Fragmentation patterns, McLaffretyrearrangement,application.
		PaperXII	1. Manufacture of ammonia, sulphuricacid,nitricacid,sodiumcarbonate. 2. Corrosion and Passivity,Electrochemical theory of corrosion,Methodsofprotectionsofmetalsfromcorrosion. 3. Manufactureandrefiningofcanesugar,by productsof sugar industry 4. SoapsandDetergents 5. Nanomaterials, Characterization andfabrication, Applications ofNanomaterials.
	B.Sc.PartIII(SemVI)	PaperXIII	1. Gibbsphaserule,Phasediagram,Onetwoandthreecomponentsystem. 2. Free energy : Gibbs function,Helmholtzfunction,GibbsHelmholtzequation, Clapeyron – Clausiusequation,Gibbs-Duhemequation. 3. The solid state, Space lattice, latticesites,Latticeplanes,Unitcell,Weissindices and Miller indices, Bragg‟sequation. 4. Radioactivity,ScintillationandGeiger Muller,decayconstant. 5. ChemicalKinetics. 6. Surface Chemistry, Adsorption,Freundlichadsorptionisotherm,Langmuiradsorptionisotherm, BET equation.

		PaperXIV	1. InorganicReactionmechanism, 2. Thermodynamicand Kineticaspects

			ofmetal complexes. 3. Nuclear Chemistry, Nuclear reactionsand energetic of nuclear reactions,types of nuclear reactions, applicationsof radio-isotopes as tracers. Study ofActinides 4. Iron and Steel, Blast furnace,Bessemerprocess,L.D.process,Heattreatmenton steel. 5. Bio-inorganicChemistry, Metalloporphyrins.
		PaperXV	1. Name reactions, Statement, GeneralReaction, Mechanism and Syntheticapplications. 2. Reagents in Organic Synthesis,Preparationand Applications. 3. Electrophilicadditiontoc-cdoublebondand triplebond, 4. Studiesofnaturalproduct,terpenoids,alkaloids. 5. Pharmaceuticals,Introduction, Classification,Qualitiesofidealdrug,Drugaction ofsulphadrugs.
		PaperXVI	1. Theory of Titrimetric Analysis,Ostwald‟sQuinoidtheory, Acidbasetitration,Complexometrictitration. 2. Potentiometric Titrations,QuinhydroneandGlasselectrodes,Potentiometrictitrations. 3. Colorimetry and Spectrophotometry,Theory of Colorimetry andSpectrophotometry 4. FlamePhotometry,principlesofflamephotometry, application andlimitations. 5. Chromatography,Typesofchromatography, Gas chromatography,LiquidChromatography,Supercritical-fluid,Chromatography.

B.Sc.Physics

COURSE OUTCOMES/ PROGRAM OUTCOMES AND

PROGRAMSPECIFICOUTCOMES.

Sr.No	Course	Programoutcome
1	B.Sc.-I (CBCS)	Paper I DSC-1A MECHANICS-I By the end of course students should be able to know about the following 1) Different types of motions in nature 2) Vector and scalar quantities and their applications in physics 3) Differential equations and their applications in physics 4) Momentum and energy conservation rules and their importance
2	B.Sc.-I (CBCS)	Paper II DSC-2A MECHANICAS-II By the end of course students should be able to know about the following 1) Oscillations and waves with applications in nature. 2) Property of Elasticity and use in different applications. 3) Surface tension its properties and applications
		Paper III DSC-B ELECTRICITY AND MAGNETISM-I By the end of course students should be able to know about the following 1) All about electrostatics, field, flux, various theorems in dielectrics and their applications in capacitors. 2) Vector analysis, Gauss's, Stokes's and Green's theorems and applications.
		Paper IV DSC- 2B ELECTRICITY AND MAGNETISM-II By the end of course students should be able to know about the following 1) LCR circuit and analysis and its use in electrical and electronics devices. 2) Various brides and their applications to determine the unknown values of resistance, capacitance and inductances. 3) Maxwell's equations and applications to solve problems in electromagnetic wave propagation.
	B.Sc.-II (CBCS)	Paper -V THERMAL AND STATISTICAL MECHANICS – I By the end of course students should be able to know about the following 1) Kinetics of gases and Maxwell's law of distribution of velocities and their use in transport phenomena in gases. 2) Various types of thermometers, their construction and working. 3) Thermodynamic processes and different laws with applications in development of Heat engine.
		Paper VI -DSC C2 WAVES AND OPTICS -I By the end of course students should be able to know about the following 1) Oscillations and their importance in physical world. 2) Harmonic, coupled oscillations and energy exchange processes. 3) Characteristics of sound and applications in Acoustic of building, data storage and recording and reproduction etc.

		Paper VII-DSC D1 THERMAL AND STATISTICAL MECHANICS –II By the end of course students should be able to know about the following 1) Various thermodynamic functions and their inter relations. 2) Blackbody radiations and its applications. 3) Classical and Quantum phenomena and theories related.
		Paper VIII -DSC D2 WAVES AND OPTICS -I By the end of course students should be able to know about the following 1) Study of Optics and use of cardinal points in lens system. 2) Prism, Grating and other optical instruments and their applications. 3) Light its properties and applications in various new technologies.
	B.Sc.-III	Introductions classification of solid on band theory, Fermi energy,densityof states, effect of temperature on Fermi level, Zener diode, LED, solar cell,photo conductive cell. Transistors-types and working, transitor as anamplifier,oscillator,
		Programme Specific Outcomes - PHYSICS
		1 Identifying and describing physical systems with their professional knowledge. 2 Developing their scientific intuition, ability and techniques to tackle problems either theoretical or experimental innature. 3 Knowledge of general physics like sound, wave, friction, forces and laws of motion and use ofmathematics. 4. Information of electrical current, circuits, construction and theiruse. 5. Learning about concepts of nuclear physics and nuclear energies and importance of their use for all 6. Knowing about the light and its importance in life, its characteristics, properties and use in variousinstruments

PROGRAMME SPECIFIC OUTCOMES

B. Com (Advanced Accountancy)

On completion of Advanced Accountancy specialization student will be Able to understand

1. Have conceptual clarity of subject like Accounting, Auditing, Income tax, Cost accounting & their interrelation.
2. Student will understand the concept like financial analysis, appraisal & different technical & financial analysis, audit procedure & different kind of organization, provisions related to assessment of individual income under Income Tax Act 1961.
3. Student will be able to understand Accounting & Auditing process.
4. Student will be able to know techniques of conducting Audit & Account of various entity.
5. To understand the recent trend in practice of Account & Audit.
6.

B.Com (Advanced Costing)

After studying cost accounting course students shall be able

1. To understand meaning nature scope & importance of cost accounting & difference between cost accounting & financial accounting.
2. To know about cost classification element of cost & preparation of cost sheet – job costing, contract process costing & reconciliation statement.
3. To understand cost accounting of labour, methods of remuneration & incentive plans.
4. To know about classification of overheads, machine hour rates & about activity based costing.
5. To identify the techniques of marginal costing, standard costing, budgetary control & cost audit.

COURSE OUTCOMES

Class	Subject	Course Outcomes
B. Com. I	1. Insurance	1. Studied various concepts, types and clauses in insurance. 2. Know the various risks covered by insurance 3. Able to understand the procedure of taking insurance policies. 4. Understand the procedure for making claim. 5. Learned how one can have a stable and care free life by taking insurance 6. Understand the career opportunities in insurance sector 7. Learned the importance of insurance in nation building.
	2. Principles of Marketing	1. Develops a sense of behavior while selling and purchasing the product. 2. Learned the importance of marketing in the success of business. 3. Developed interest in online marketing, green marketing and social marketing. 4. Acquire knowledge of 4 P's of marketing. 5. Aware about environment safe marketing activities.
	3. Management Principles & Applications	1. Understand the theoretical aspects of Management. 2. Know about different management theories. 3. Have basic knowledge of management functions.
	4.FinancialAccounting	After studying this course student shall be able 1. To understand the accounting concept & conventions, standard & its importance. 2. To gain working knowledge of generally accepted accounting procedures. 3. To identify the skills & techniques of accounting various entities. 4. To know the recent trends in practice of accounting.
B. Com. II	1. Fundamentals of Entrepreneurship	1. Impart theoretical knowledge of entrepreneurship. 2. Develop entrepreneurial qualities. 3. To acquaint students for formation of small industry. 4. Enlighten with recent trends of entrepreneurship.

	2. Corporate Accounting	After studying this course student shall be able 1. Explain accounting entries of issue & forfeiture of shares & re-issue of forfeited shares , discuss accounting treatment for redemption of preference shares & buy back of shares. 2. Demonstrate accounting for issue of debentures and redemption of debentures. 3. Simulate practice of preparing financial statements as per the provisions of Indian Company Act 2013. 4. Practice the fundamental accounting process on Tally ERP.
B.Com.III	Modern Management Practices	• Understand the various modern management practices used in corporate world. • Acquired knowledge of management ofdisasters. • Learned how to behave ethically. • Know about modern management concepts and contribution of different researchers. • Understand about strategic management and CRM. • Awareness about knowledge of management
	Industrial Management Paper I	• To Gain the knowledge of I.M. • Know about work environment and industrial Pollution • Awareness about Plant maintenance. • Enlighten students about financial management.
	Industrial Management Paper II	1. Able to know the role of human resource in any organization. 2. Learned the role of HR in acquiring and retaining human capital. 3. Learned the importance of human relation to keep peace in industry, society and family as well.
	Advanced Costing	After studying this course students shall be able 1. To understand basic concept of cost accounting. 2. To classify the cost & apply the same for cost determination. 3. To classify the cost accounting principle in cost accounting of materials. 4. To know the application of cost accounting in calculation of

		labour cost.
	Advanced Accountancy	On completion of Advanced Accountancy course student will be able to understand 1. To gain working knowledge of generally accepted accounting & auditing Procedure. 2. To gain conceptual clarity about insurance claim & its computation, Farm Accounting, Hire purchase system & Bank financial statement. 3. To know the financial provisions of Banking law scope & objectives of Management accounting & Cost accounting. 4. To learn accounting process of about business events. 5. To develop the ability to maintain accounts.

		HINDI **COURSE OUTCOMES/ PROGRAM OUTCOMES AND PROGRAMSPECIFICOUTCOMES.**
B.A. (Hindi)	B.A. (Hindi) First Year (CBCS)	Paper- Modern Hindi Literature 1. To explain the ups and down of life through poetry 2. To direct life through various stories 3. To publish poems in the college magazine by developing poetic interest among the students
	B.A. (Hindi) First Year (CBCS)	Paper- SahityaVividha 1.To familiar with various lives of writers 2.To understand various aspects of life through different stories 3.To acquaint with male dominancy and family 4.To learn different elements to understand healthy family life 5. To familiar with various disciplines in Hindi Literature
		Paper- Syllabus : Modern and Mediaeval Poetry 1. To create interest among students about Archaic Poetry. 2. To explain the relevance of mediaeval poetry to the students 3. To interpret some problems of mediaeval era. 4. To aware the women problem of family Independence, self-reliance etc. 5. To acquaint with the dirty politics through political drama 6. To write stories 7. To write dialogues 8. To participate in play 9. To study comparatively
B.A. (Economics)	B.A. I Economics (CBCS)	**Understanding characteristics, features, structural changes in Indian** Economy. Comprehension of the nature and impact of New Economic Reforms on the IndianEconomy. Knowing the problems of unemployment, poverty, rising economic and social inequality and problems of regional imbalances inIndia. Evaluating the changing role of agriculture, industrial and service sector and foreign sector in IndianEconomy. Measuring the problems and prospects of cottage and small scale industries, and industrialsicknesses. Measuring the growth, volume, composition and direction of India's foreign trade and capital inflow since1991.

	B.A. II Economics (CBCS	**Banks and Financial Markets** Understanding the meaning, function and role of commercialbanking. Comprehending the procedure of an account opening, operating and closing. Knowing the structure, function and role of RBI in economic development. Judging the progress of financialinclusion. Evaluating the importance, characteristics and components of the financialMarket. Understanding the role and types of development banks and Non bankingfinancialintermediaries. Realizing the banking reforms and Basel norms-I andII. Identifying recent trends in Indian Banking such as E- Banking, MICR Clearing, ATMs, Credit cards and Debit Cards, Travelers Cheques, Gift Cheques, Demat Account.
	B.A. II Economics (CBCS	**Macro Economics** Identifying the basic concepts and theories of Macroeconomics. Awareness about changing macro economics policies andtheories. Understanding various concepts such as; GDP, GNP NNP, Personal Income, Disposable Income, Per Capita Income, and NationalIncome. Identifying the factors determining gross domestic product, employment, the general level of prices, and interestrates. Realizing the law of markets, consumption function and investment function. Judging the role of fiscal policy and monetary policy in a Developing economy. Knowing features, phases and theories of tradecycles. Evaluating types, merits and demerits oftaxes. Comprehending the role of public finance in developingeconomy.
	B.A. III Economics (CBCS	**Principles of Micro Economics I &II** Students will be able to understand Explain what economics is & why it is important Understand consumer decision making & consumer behavior Define the concept of utility & satisfaction Understand producer decision making & producer behavior Identify the market structure Understand the factor pricing
		Research Methodology in Economics –I & II Select & define appropriate research problem and parameters Understanding the basic framework of research process. Defining various research designs and techniques. Identifying various sources of information for literature review and data collection. Discussing the ethical dimensions of conducting appliedresearch. Write a research report &thesis Write a research proposal
		History of Economic Thoughts I & II Acquaintance with the economic thoughts of Classical, Nationalist and Socialist Thinkers. Judging the development of economicthoughts. Realizing the economic concepts and theories of Neo-classicals and Indian thinkers. Evaluating the development of Indian economicthoughts.
		International Economics I & II Explain international trade Understand the measurement of gains from international trade Measure the terms of trade Evaluating various types of exchange rates and its merits anddemerits. Discussing the types and effects of tariffs and quotas. Judging the function, merits and demerits of Foreign Capital, and International Corporation (IMF, IBRD, WTO andSAARC). Realizing the volume, composition and direction of Balance of trade and Balance of payments.

B.A. Sociology	B.A. I Sociology (CBCS)	**Paper No. I – INTRODUCTION TO SOCIOLOGY** 1. To introduce the students of basic concept of Sociology, subject matter & Development of Sociology. 2. To understand the brief knowledge of Social Interaction & Social Structure like Status & Role, Norms & Values. 3. To understand the brief knowledge of society, & Social Institution. 4. The student can able to understand the concept of culture & socialization**.**
		Paper No. II – APPLIED SOCIOLOGY 1. The students will understand the theoretical approaches in Sociology. 2. The students can understand the co-relation of society & mass media & their impact on society. 3. The students can able to understand the concept of Globalization & Modernization & the Social change. 4. The students can able to understand the career opportunities in the Sociology**.**
		Scientific Method (Compulsory subject) 1. To implement of the scientific approach in the student. 2. To introduce the various scientific methods in the students. 3. To develop the research attitude in student 4. To enhance scientific attitude among the students.
	B.A. II Sociology (CBCS	**Semester III:- Paper No. III SOCIAL ISSUES IN INDIA** 1. To acquaint the students to major social problems & challenges the problem of the Indian society. 2. Awareness created in the student of contemporary social problems in India. 3. To understand the Socio-Legal Issues.
		Paper No. IV Social Movements in India 1. To acquaint the student to concept, element & Importance of Social Movement. 2. To understand the various social movements & its impact on society. 3. To draw attention to the variety of ideas & debates about India.

DepartmentofEnglish

Courseoutcomes/ Programmeoutcomes andProgrammeSpecific outcomes

Sr. No	Course/Programme		Course/ProgrammeOutcomes
1	B.A.		
2	**Programmeoutcomes**		
	B,A,PartI		To make Degree students familiar with modern Englishidiom and effective communication skills and language ofliteratureand itsforms .
	B.A.PartII		Toenablethestudents toappreciatepoetryanddrama inEnglishliterature.
	B.A.PartIII		To enable students to have comprehensive knowledge ofEnglishlanguage,literatureandcriticismwiththehelpof .papersdesigned
	M. A. Part I (to be introducedfromJune2017)		Core literature courses to provide comprehensiveknowledgeofmajorliteraryworksoftheperi odswiththehelp of representative texts and to acquaint thestudentswithliterarymovements, genresandcriticaltheories. Students will be introduced with core language coursestoprovideanintroductionto thebasic conceptsof linguistic theory. They will be introduced with electivecoursestoacquaintthestudentswithGlobal developmentsinLiterature,Language andTheory.
	M.A.PartII		This is the last year of the old syllabus. Students will beable to get comprehensive knowledge of major literaryworksoftheperiodswiththehelpofrepresentativetext sand will be acquainted with literary movements, genresandcriticaltheories.
3.	**Course/Programme**		**ProgrammeSpecificoutcomes**
	B. A. Part ISemI	Paper I Introductiontothe English Literature: The Short Storyand	Unit1–„ShortStory–AMinorformofLiterature‟– Students will be able to understand the meaning,origin and development of the short story and welearnits elements andcharacteristics. Unit2, 3 and4– ShortStories (5) –Students will be

		theNovel	ableto understand lifeandwork of writers,themes,plot and characters of the stories.
	B. A. PartISemII	Paper II Introductiontothe English Literature:TheShortStoryandtheNovel	Unit 5 – „Novel as a form of Literature" – Studentswill be able to understand the nature and features, theelements of the novel, the various types of the novelanditsimportanceinthe historyofEnglishliterature. Unit 6, 7 and 8 – Students will get introduced to thelifeand worksof WilliamGoldingandhis novel „LordofTheFlies",theplotcharacters,settingandthemesof thenovel.
	B. A. Part IISemIII	PaperIII ModernEnglish Literature	All the 5 units of this semester will provide thestudents with 10 different poems from modernEnglishliteratureandalsothetypesoflyricsuch asSonnet,Ballad, Ode,Elegy,Songetc.
		PaperIV IndianEnglishLiterature - Novel	Students will be acquainted with the developmentand growth, the contribution of the Indian WomenNovelistand features of theirnovels. Unit 2, 3 and 4– Students will be able to understandlife and works of the novelist Rama Mehta, herprescribed novel „ Inside the Haveli", its plot,characters, setting, technique and themes as well asthefeminist perspective ofthe writer.
	B. A. Part IISemIV	PaperV ModernEnglish Literature	Unit 6, 7 and 8 – will introduce students with modernEnglishdramawiththehelpofHenrikIbsen"s„An EnemyofthePeople".
		PaperVI IndianEnglishLiterature–Indian Poetry	Unit 1, 2, 3 and 4 – Will acquaint the students withmajor Indian English Poets with the help of theirpoems, subjects, themes, the imagery used by themandtheirstyle.
	B. A. PartIIISemV	PaperVII LiteraryCriticism andAppreciation	Unit 1 and 2 – will introduce the students withclassicalandneoclassicalcriticismwithitsdifferentconcepts and writers – mimesis, catharsis andhamartia,reason and judgment, ironyand satire Unit 3 – will introduce the students with Sir PhilipSidney,„AnApologieforPoetrie",Sidney"sviews onpoetry,hisdefenseofpoetryas wellasElizabethan

			literarycriticism. Unit 4 – Literary Movements – Students will be ableto understand major literary movements-Realism,Naturalism,Symbolism,Surrealism,differentauthorsand their contribution in the developments of theseliterarymovements.
		PaperVIII Understanding Poetry	Unit1,2,3and4-Generaltopics-ElizabethanPoetry,MetaphysicalandNeo-classical Poetrywill makethestudents understand the nature of poetry of thesetypes and their prominent poets and the nature oflyrical poetry, origin of sonnet, song and elegy withthehelp of the poems prescribed.
		PaperIX Understanding Drama	Unit 1 and 2 will make the students understand dramaas a genre of literature, its definition, basic elementsand types of drama- Comedy, Tragedy and ProblemPlays Unit 3 and 4 will make the students able to know theconcept of Shakespeare‟s tragicomedy with the helpof „The Tempest‟, the themes, motifs, style andsymbolsoftheplay,itsplot, charactersandsetting
		Paper X – Understanding Novel	Unit 1 and 2will get the students acquainted with theGeneralTopics-Realistic NovelandScienceFiction,Campus Novel and Transfiction , their nature andcharacteristicsand prominent writers Unit 3 and 4 will give them the knowledge about anIndianwriterAnitaDesai,herlifeandworksandhernovel „Journey to Itacha, its plot,characters, settingandthemes.
		PaperXI Structure andFunction ofModernEnglish	Unit 1 – Phonology – Students will be able tounderstandtheconceptsofphonology,speech mechanism, organs of speech, 3 term labels,transcriptionof wordsetc. Unit 2 – Morphology –Students will be able tounderstand the terms morphs, morphemes,allomorphsandmorphology,analyzethestructureofcomplex words and various processes of wordfunction. Unit3– Words–Students willbeable tounderstand

			openandclosedclasswords,distinguishbetweenformand function ofwords. Unit 4 – Phrases – Phrase as a unit of language, mainandsubordinate phrases,6 classesof phraseetc.
	B. A. PartIIISemVI	PaperXII LiteraryCriticism andAppreciation	Unit 5 and 6 – will acquaint the students withimportanttheoryandpracticeofRomanticCriticismand New Criticism. They will also understand theconcepts such as fancy and imagination, negativecapability and the Noble Savage. In the NewCriticism they will understand the formalistmovement, concepts such as dissociation ofsensibility,objectivecorrelative andparadox. Unit7– thisunitwillgivethestudentstheimportantwriterand criticMatthewArnoldandhis„The FunctionofCriticismatthePresentTime“.Theywillunderstand Arnold“s views on function of criticism,qualifications of a competent critic and the role ofcreationand theroleof criticism insociety. Unit 8 – Critical Appreciation – this is the practicalCriticism.Studentswillbeabletoknowthenatureofthe practical criticism and a few important literaryterms. Theywilllearntowritecriticalappreciationofanunseenpoem.
		PaperXIII Understanding Poetry	Unit 5,6,7 and 8 will get the students acquainted withRomantic Poetry, 20th cen. Poetry, Modern IndianPoetry understand the nature of poetry of these typesand their prominent poets and the nature of lyricalpoetry,originof romantic,modernandIndianEnglishpoetrywiththehelp of thepoemsprescribed.
		PaperXIV Understanding Drama	Unit5 and 6will acquaint thestudents with an importantplaybyTenesseeWilliams„TheGlassMenagerie“, its psychological aspects settingcharacters,plot, themesetc. Unit 7 and 8 will introduce the students with animportant IndianwriterMaheshDattaniandhisplay „BravelyFoughttheQueen“,itsplot,charactersandsetting,as well as its themes.

		PaperXV Understanding Novel	Unit 5 and 6 will acquaint the students with anAfrican writer J. M. Coetzee, life, works and hisnovel „Disgrace", its story, plot, characters, setting,andsituationafterthepost-ApertheidSouthAfrica. Unit 7 and 8 will make the students able to identifythe problems of Indian farmers, the situation in thedraught prone area with the help of a novel bySadanandDeshmukh,„Baromas",theplot,characters and setting of the novel and various themes of thenovel.
		PaperXVI Structure andFunction ofModernEnglish	Unit 5 – Clauses – Students will be able to identifythe elements of clause, different classes of clauses,forandfunctionlabelstotheelementsofclauseanddistinctionbetweenfiniteandnon-finite clauses. Unit 6 – Subordination and Coordination – Studentswill be able to understand the structure of complexsentences,formandfunctionofsubordinateclauses,relationbetweensubordination andcoordination. Unit 7 – Cohesive Devices and Their Uses – Studentswill be able to know about cohesion, different typesof cohesive devices and to analyze a passage toidentifysuchcohesive devices Unit 8 – Discourse Analysis –Students will be able tounderstand types of discourse, functions andcharacteristics of speech and writing, types of tenor,various domains of discourse and analyze spoken andwrittendiscourse.

Department of Marathi

Programme Outcomes

Sr. No.	Class	NameofthePaper	Outcomes
1	BA.I	Marathi(Opti.)-Abhiruchi	**Sem I-Paper no.1** 1. Developmentofliteraryt astesamongthe student's. 2. Helpsto understandthe type'sofliterature. 3. Natureofliteratureand culture. **Sem II-Paper no.2** 1. Informationabout type'soffine literature. 2. Understanding the natureof human lifein the literature. 3. Understanding theknowledgeofsoc ial commitment.
2	B.A.II	Marathi (Opti.)- Gaddya&Paddya	**SemIII-Paper no. 3** 1. Introduction to the medievalMarathipoertylitera tureand language. **2.** Introduction to thetranslation process.**SemIII-Paperno.4** 1. Introduction to themedieval Marathiproseliterat ureand language. 2. Knowledgeofediting process.

			1. Understandingthes hortstory. 2. Knowledge of thenatureofmodern shortstory. 3. Introductiontothetra nslationprocess. **SemIV-Paperno. 6** 1. Studyofmodernpoetry 2. Introduction to poetryexpressing contemporarysenses. 3. Knowledge of editingprocess.
3	B.A.III	Marathi(Opti.)-Kavyashastra **SemV**	Paperno.7 1. Introduction of classicalliterature. 2. Infortmationaboutthen ature and purpose ofclassicalliterature. 3. Information aboutlanguageorna ments/figures ofspeech.
4	B.A.III	Marathi (Opti.)-Bhashavidnyan **SemV**	Paperno.8 1. Intrormationabout modernlinguistic. 2. Knowledge of languagerelatedtolingul sticsandmarthilanguage. 3. Knowledge of Marathilanguagesyste m.
5	B.A.III	Marathi(Opti.)-Marathivangmayachaiti has **SemV**	Paperno.9 1. Knowledgeofthehistoryo f medieval Marathiliterature. 2. Knowledgeofmedievals ocial and culturelconditions. 3. Information about theformationofmajorsec tsof the medieval periodand theirtexts.

6	B. A. III	Marathi(Opti.)- marathibhashaupayojansarjan **SemV**	Paperno.10 1.Thenatureof Marathi languageandit'spractice.
7	B. A. III	Marathi (Opti.)- vangmaypravahancheadhyayn **SemV**	Paperno.11 1. Introducation ofvatiousliteratystreamsinMarathilanguage. 2. Information about theinspiration,nature,andcharacteristics of ruralliterarysteams. 3. The study of rajangavass novel- ' 'B'Balicha'
8	B.A.III	Marathi(Opti.)- Kavyashastra **SemVI**	Paperno.12 1. Identificationofthenatureandtypesofwordpower. 2. Knowledgeof theprocess of'Rasprakriya'.
9	B.A.III	Marathi (Opti.)- Bhashavidnyan **SemVI**	Paperno.13 1. Informationaboutthecause and issues of themutation. 2. Informationabouttheorigin and landuage ofMarathi. 3. TypesofMarathiwords

10	B.A.III	Marathi(Opti.)- Marathivangmayachaiti has **SemVI**	Paperno.14 1. Knowledge of tge historyof medieval Marathiliterature. 2. Knowledgeofmedievals ocial and culturalconditions. 3. Information about theformationofmajorsec tsof the medievak periodand theirtexts.
11	B.A.III	Marathi(Opti.)- marathibhashaupayojansarja n **SemVI**	Paperno.15 1. The nature of Marathilanguageandp ractice. 2. Developmentofinguistics kills and capabilities invariousfields. 3. Studyofapplicationandc reativecurting.
12	B.A.III	Marathi (Opti.)- vangmaypravahancheadh yayn **SemVI**	Paperno.16 1. Introducationof varionsliterary streams inMarathiliterature 2. Information about theinspiration,Nature,a ndcharacteristics of ruralliteratystreams. The study of RahanGavassmovel – “B’Balicha.’

Department of History

Programme Outcomes

Sr. No.	Class	NameofthePaper	Outcomes
1	BA.I History	**Paper I Rise of the Maratha Power (1600-1707)**	The course will explore the origins, establishment and growth of the the Maratha Power under the leadership under Chhatrapati Shivaji Maharaj and his successors Sambhaji and Queen Tarabai. **Paper II Polity, Society and Economy under the Marathas (1600-1707)** Introduce the students to the important factual history of state policy and socio-economic conditions in the Marathas times
2		**PAPER III- HISTORY OF MODERN MAHARASHTRA (1900 to 1960)**	**PAPER III- HISTORY OF MODERN MAHARASHTRA (1900 to 1960)** Understand the beginnings and growth of nationalist consciousness in Maharashtra Explain the contribution of Maharashtra to the national movement Give an account of various movements of the peasants, workers, women and backward classes Know the background and events which led to the formation of separate state of Maharashtra