



Navgan Shikshan Sanstha Rajuri (N)

Mrs. Kesharbai Sonajirao Kshirsagar Alias Kaku Arts, Science & Commerce College, Beed-431122



Principal-Dr. S.V. Kshirsagar

NAAC reaccredited -A Grade
[3.18 CGPA as per New RAF]

ISO- 21001:2018

Green audit

Website-kskcollegebeed.com E-mail-kskbeed123@rediffmail.com Ph.(02442)222641 Fax-02442)230197

2.6.1 Programme and course outcomes for all programmes offered by the institution

Sr. No.	Name of Departments
1.	Microbiology
2.	Computer science
3.	Zoology
4.	Physics
5.	Chemistry
6.	Mathematics
7.	Hindi
8.	Marathi
9.	English
10.	Physical Education
11.	Economics
12.	Music
13.	Sociology
14.	Public administration
15.	Home Science
16.	Urdu
17.	History
18.	Botany
19.	Commerce

Mrs. K.S.K College
Department of Microbiology
Course Outcomes
B.Sc. Microbiology

Fundamentals of Microbiology (Theory)

Course Objectives: The candidate will gain knowledge about the structure of bacteria, fungi, algae, protozoa and viruses along with the basic principles of microscopy. Control of microbial growth by physical and chemical methods plus the use of antibiotics and their efficacy testing are emphasized. Cultivation of microbes is discussed.

Course Outcome : At the end of the course, learners will be able to:

CO1: Gain knowledge on various classes of microorganisms; their structure- extracellular and intracellular components, cultural characteristics and their growth conditions.

CO2: Know about the different parts and working mechanisms of basic light microscope upto electron microscopes with deep knowledge on the sample preparation and staining techniques.

CO3: Acquire knowledge on sterilization techniques with adequate information on sterile, aseptic conditions.

CO4: Know about different classes of antibiotics and their mode of actions, treatment strategies and detection of resistant forms of bacteria from clinical settings.

COS: Microbial culture media and pure culture techniques for aerobic and anaerobic cultivation methods for bacteria.

Microbial Techniques (Practical)

Course Objectives: The candidate will gain hands-on knowledge and acquire adequate skill required to sterilize media and to prepare, inoculate observe and distinguish the growth patterns in different media.

1. Cleaning and Sterilization of Glassware.
2. Preparation and growth of Bacteria Peptone Water, Nutrient Agar in Basal Media-Nutrient Broth,
3. Preparation and growth of Bacteria in-MacConkey Agar and Cetrimide Agar
4. Preparation and growth of Bacteria in Carbohydrate Fermentation Media.
5. Filter sterilization of Serum.
6. Simple staining-positive and negative staining.
7. Gram staining of Bacteria.
8. Capsule staining
9. Spore staining.
10. Cultivation of fungi in SDA and LPCB mount and microscopy of growth.
11. Cultivation of Algae and Identification of Spirogyra, Chlamydomonas, Anabaena and Nostoc.
12. Antibiotic sensitivity test-Kirby Bauer Method.

Lab Course Outcome

At the end of the course, learners will be able to:

CO1: Perform cleaning & sterilization of glassware

CO2: Competently prepare and cultivate bacteria in different types of media.

CO3: Gain knowledge on filter sterilization techniques

CO4: Know how to grow algae in the lab

Microbial Chemistry

Course Objectives: The candidate will gain knowledge about the structure, properties and functions of carbohydrates, proteins, lipids and nucleic acids. Basic biochemical techniques are also dealt with.

Course Outcome : At the end of the course, learners will be able to:

- CO1: Basic understanding of carbohydrates and its metabolism
- CO2: Obtain knowledge on structure, classification & biological roles of proteins
- CO3: Obtaining in-depth information on lipids and their classification.
- CO4: Assimilate knowledge on biosynthesis and metabolism of lipids
- CO5: Gain the knowledge on different chromatographic methods.

Microbial Chemistry Practical

Course Objectives: The candidate will gain knowledge and skills required detecting carbohydrates, amino acids, and also estimating the amount on biomolecules in the given solutions.

Bacterial Cytology and Virology

- CO1. Explain diagrammatically the ultrastructure of eukaryotic cells. Outline the cellular signalling mechanisms in higher organisms at the molecular level.
- CO 2. Illustrate the effect of fundamental activities such as homeostasis and morphogen gradients on the process of cellular development
- CO 3. Explain diagrammatically trafficking of biomolecules in the compartments of eukaryotic cells
- CO4: List the various emerging, re-emerging viral diseases and their causative agents. State the reasons for their emergence and re-emergence,
- CO 5: Illustrate the structure of viruses. Explain the methods for cultivating viruses.

Environmental Microbiology(Theory)

Course Objectives: The candidate will gain knowledge about microbes in air, air sanitation and quality assessment. Types of water ecosystems and water-borne diseases. Effluent treatment and parameters BOD, COD. Extremophiles in the environment.

Course Outcome : At the end of the course, learners will be able to:

- CO1: Gain knowledge on the role and infections caused by microbes in air.
- CO2: Obtain detailed information on aquatic ecosystems and Assimilate knowledge on Water borne diseases.
- CO3: Get detailed knowledge on Waste water treatment and its different methods.
- CO4: Basic understanding on different types of microbes present in the environment and its uses.
- CO5: Acquire knowledge on Biodegradation, of xenobiotic compounds and Understand of Biomagnification and Bioremediation

Environmental Microbiology(Practical)

Course Objectives: The candidate will gain hands-on knowledge and acquire adequate skill required to evaluate the quality of milk, curd and spoilage organisms, Microbiological evaluation of water and air will be practiced.

Immunology and Clinical Microbiology (Theory)

Course Objectives: The candidate will gain knowledge about immunity, organs of immunity and cells involved. Types of antigens and immunoglobulins. Antigen-antibody reactions and assays. MHC and its significance.

Course Outcome: At the end of the course, learners will be able to:

- CO1: Understand the fundamental concepts of immunity, contributions of the organs and cells in immune responses.

- CO2: Understand the antigens & their characters: the different types antibodies & their properties
- CO3: Understand the mechanisms involved in antigen-antibody reactions
- CO4: Differentiate the humoral and cell mediated immune mechanisms
- COS: Comprehend the overall reaction by our immune system leading to hypersensitive conditions and its consequences. Know how MHC functions in the immune system; Gain knowledge on vaccines, toxoids and immunotherapy

Immunology and Clinical microbiology (Practical)

Course Objectives: The candidate will gain hands-on knowledge and acquire adequate skill required to identify lymphocytes, various agglutination and precipitation reactions. Perform and interpret ELISA tests and Immuno- electrophoresis as well as purify immune globulins

Course Outcome, The students will be able to

- CO1: Identify various immune cells and enumerate them
- CO2: Competently perform serological diagnostic tests such as RF, ASO, CRP.
- CO3: Identify blood groups and types
- CO4: Diagnose syphilis by performing TPHA test
- COS: Analyze and quantify the antigens / Abs by performing immune electrophoresis, chromatography techniques & ELISA

Food and Dairy Microbiology(Theory)

Course Objectives: The candidate will gain knowledge about food preservation, spoilage. Sanitation requirements and in-plant mechanism with documentation-GMP, HACCP. Dairy microbiology- cheese, Yogurt. Food-borne diseases and its control.

Course Outcome :At the end of the course, learners will be able to:

- CO1: Gain knowledge on various interactions between food and microorganisms.
- CO2: Know about the different methods of food preservation.
- CO3: Acquire knowledge on spoilage of foods.
- CO4: Explain about the microbial production of dairy and non-dairy products
- COS: Classify bacterial and non-bacterial food borne diseases

Food and Dairy Microbiology (Practical)

Course Objectives: The candidate will gain hands- on knowledge and acquire adequate skill required to evaluate the quality of milk. curd and spoilage organisms. Microbiological evaluation of water and air will be practiced.

Microbial Genetics (Theory)

Course Objectives: The candidate will gain knowledge about the structure, shape and significance of DNA, RNA. Synthesis of RNA and proteins along with its control. Role of genes as basic units of expression.

Course Outcome: At the end of the course, learners will be able to: Know in detail the structure

- CO1: Understand the flow of information from DNA to Protein. re of DNA & RNA and replication of DNA.
- CO2: Grasp the replication of single-stranded DNA molecules and the various features of retrovirus replication.
- CO3: Appreciate the various cellular mechanisms involved in the control of transcription.
- CO4: Basic understanding of control methods for gene expression. Understanding the language for communication in cells.

COS: Molecular basis of heritable changes in cells along with insights about evolutionary methods to overcome change. Firm grasp of E.coli gene mapping methods as well as those of yeast

CC6: Microbial Genetics (Practical)

Course Objectives: The candidate will gain hands-on knowledge and acquire adequate skill required to separate and observe chromosomal DNA, RNA, amino acids, lipids as well as estimate nucleic acids.

Course Outcome: At the end of the course, learners will be able to:

CO1: Understand the concept of plasmid isolation and characterization

CO2: Know how to purify bacterial chromosomal DNA

CO3: Gain knowledge on methods of DNA & RNA estimation

Molecular Biology Genetic Engineering (Theory)

Course Objectives: The candidates will understand the structures of DNA and RNA, replication of DNA and transcription, translation, gene regulation, mutations and genetic exchange.

The candidates will understand the development genetic engineering, vectors, DNA amplification and DNA sequencing, application of genetic engineering and biotechnology.

Course Outcome: At the end of the course, learners will be able to:

CO1: Attain knowledge about the structure of Nucleic acid.

CO2: Know about the mechanism of DNA replication, transcription and translation processes in organisms

CO3: Gain knowledge in the mechanisms of gene expression and its regulations in organisms.

CO4: Achieve knowledge about the mutations and DNA repair mechanisms in organisms.

COS: Realize knowledge about the transposable elements, types of plasmids and its applications.

Industrial Microbiology(Theory)

Course Outcome: At the end of the course, learners will be able to:

CO1: Realize the importance of microbial products over chemically synthesized products CO2: Gain knowledge on important microbial strains and fermentation media

CO3: Understand fermenters and fermentation processes. CO4: Gain knowledge in downstream processing and industrial production of various products.

COS. Gain knowledge on Microbial production of industrial products

CC13: Medical Microbiology(Theory)

Course Objectives: The candidates will acquire knowledge about viruses of medical importance, their classification and characteristics. They will also learn in detail about the infectious and their treatments. They will also study about the medically important bacteria and infections caused by them and their therapeutic options. They will also gain knowledge on fungal and parasitic pathogens, fungal infections and parasitic diseases and their diagnosis and treatment.

CC14: Medical Microbiology(Practical)

Course Objectives: The candidate will gain knowledge about microbes in air, air sanitation and quality assessment. Types of water ecosystems and water-borne diseases. Effluent treatment and parameters BOD, COD. Extremophiles in the environment.

CC15: Molecular Biology and Genetic Engineering(Theory)

Course Objectives: The candidates will understand rDNA technology and strategies involved in genetic manipulations. The candidates will also gain knowledge on ethical issues involved in the system. Studying nanomicrobiology, the students will get necessary background information on nanotechnology in microbiological perspective and gain knowledge on nanoprocesses.

Course Outcome: At the end of the course, learners will be able to:

CO1: Identify the aspects of various techniques for manipulation of nucleic acids.

CO2: Infer the details about hosts and vectors in gene cloning

CO3: Apply the knowledge on gene transfer and screening of recombinants.

CO4: List out the characteristics of clone selection and ethical issues of cloning. CO5: Identify the process and characters of nanoparticles.

Bioinstrumentation and Biotechniques

Course Objectives: The candidate will gain knowledge about the principles, uses, advantages and disadvantages of devices and instruments routinely used in biological labs such as LAF cabinets, Centrifuges, HPLC, GC, Spectroscopy-NMR, UV-Vis, IR. Significance and use of radioisotopes.

Course Outcome, At the end of the course, learners will be able to:

CO1: Gain knowledge on principle and working of various laboratory equipment and can able to use them with theoretical knowledge

CO2 Learn on the theory, principles and applications of different chromatographic techniques like paper, thin layer, gel filtration, ion exchange, affinity, gas liquid, high pressure/ performance liquid chromatography (HPLC)

CO3. Learn the different techniques of gel electrophoresis where they can separate DNA, proteins and compounds.

CO4: Comprehend the usage of spectroscopic techniques with UV, Visible, IR, NMR, Fluorescence, Atomic Absorption. Mass, Raman Spectroscopy. COS: Learn the principle & will have a wide knowledge to use the radioisotopes in life sciences and radioactive labeling.

Bioinstrumentation and Biotechniques(Practical)

Course Objectives: The candidate will gain knowledge and skills required to separate amino acids, serum, haemoglobin.

Biostatistics and Bioinformatics

Course Objective:The candidates will gain knowledge in the statistical approach of scientific methods. The students will develop analytical and problem solving skills in addition to the design of experiments, The candidate will gain knowledge about the computerization of biological information data analysis and retrieval systems: NCBI, DDBJan, EMBL SGD,TIGR and ACeDB.

Course Outcome :At the end of the course, learners will be able to:

COI: Basic understanding of Biostatistics.

CO2: Grasp the information on kinds of biological data and collection of data

CO3: Basic understanding of Computers & programming languages

CO4: Grasp the information on input & output devices of a computer COS: Gain basic knowledge on Bioinformatics

CO6: Obtain knowledge on biomolecules

CO7: Obtaining in-depth information on biological databases and assimilate knowledge on genome and structure database

Biostatistics and Bioinformatics (Practical)

Course Objectives: The candidate will gain knowledge and skills required to compare, retrieve and gain accurate 3D structure predictions using various softwares.

Course Outcome

CO3: Obtain knowledge on sampling, sampling design and in-depth information on Correlation

CO4: Assimilate knowledge on Regression its types and Deviations
COS: Gain the knowledge on graphic representations

Microbial Biotechnology (Theory)

Course Objectives: The candidates will be aware of the wide applications of microorganisms in industries, appreciate the use of microbes in biotransformation process and production of industrially important products, and understand the potentials of microbes in rDNA technology to manufacture genetically engineered therapeutics. Course Outcome

At the end of the course, learners will be able to:

CO1: Gain knowledge on Industrially important microbes and its applications in Industries

CO2: Obtain detailed knowledge on Biotransformation reactions

CO3: Acquire clear view about Microbial production of Organic solvents, Vitamins Foods Applications & Microbial production of Antibiotics and Alcoholic beverages

CO4: Conquer knowledge on Applications of Genetic Engineering & rDNA technology

CO5: Accomplish knowledge on production of vaccines, Hormones and Blood proteins

Environmental Technology (Theory)

Course Objectives: The candidates will understand microbial interactions with environment and their association with diseases. The students will also appreciate the role of microbes in waste treatment and biodeterioration.

Course Outcome At the end of the course, learners will be able to:

COL: Gain knowledge about the role and infections caused in air. CO2: Obtain complete knowledge on Microorganism inhabiting extreme environments.

CO3: Gain detailed knowledge on aquatic ecosystems and Water borne diseases CO4: Acquire detailed knowledge on solid and liquid wastes. Solid waste treatment, Utilization of solid wastes, Waste water treatment and its different methods.

COS: Attain information on Biodeterioration.

Enzymology and Microbial Metabolism

Course Objectives: The candidates will understand the basic bioprocesses and the potentials of biomolecules in cell stability and survival. Students will gain knowledge on metabolic pathways of microbes with emphasis on prokaryotic photosynthesis.

Course Outcome :At the end of the course, learners will be able to:

CO1: Gain knowledge about the basic bioprocesses and the potentials of bio molecules in cell stability.

CO2: Learn about the generation and maintenance of membrane potential.

CO3: Understand various types of lipid metabolism and nucleic acid biosynthesis. CO4: Gain knowledge in the biosynthesis of various bio molecules and fermentation COS: Learn about the photosynthesis in prokaryotic system



GENERAL MICROBIOLOGY AND DIVERSITY

MIC-UD/MJ/500 T Course Objectives

To understand the microbial biodiversity, To acquaint with ecology.

To understand the morphology, physiology, and significance of extremophiles microbes

Course Outcomes.

- After successful completion of this course, students will be able to:
- Comprehend the biodiversity.
- Familiarize with various ecological niche and microbial interactions Recognize the morphology, physiology, and significance of extremophile.

Bioenergetics and Enzymology

MIC-UD/MJ/501 T Course Objectives

To understand concepts of bioenergetics and metabolic pathways of microorganisms

- To study the metabolic pathways of industrially important fermentation product

To know the properties, kinetics, and significance of microbial enzymes

Course Outcomes

After successful completion of this course, students will be able to:

- Elucidate the bioenergetics and microbial metabolic pathways
- Cognizant about the metabolic pathways of industrially important fermentation

Product

- Demonstrate the properties, kinetics, and significance of microbial enzymes

Techniques in Microbiology Course Objectives

To study the principles, need and care of laboratory instruments To understand theory, principles of chromatographic, electrophoretic, spectrophotometric and radioisotope techniques Get detail applications of various instrument and techniques in microbial field

Course Outcomes

After successful completion of this course, students will be able to:

Explain the principles, need and SOP of laboratory instruments

. Pertain the theory, principles of chromatographic, electrophoretic, spectrophotometric and radioisotope techniques

- Demonstrate various instruments and techniques

Basic Biostatistics Course Objectives

To understand various statistics terminologies and their significance in microbiology • To get familiar with various computation tools of biostatistics

To know-how about research methodology

Course Outcomes

After successful completion of this course, students will be able to: Apply the principles of statistics for designing microbiological experiment, statistical analysis, and interpretation of results Operate and solve exercise using computation statistics software

Get acquitted with basic approach of research methodology

A) MICROBIAL TAXONOMY (T) Course Objectives

To understand microbial diversity and their significance in microbiology To get familiar with various methods for identification and classification of bacteria and viruses

- To acquaint with Bergey's Manual, molecular phylogenetic

Course Outcomes

After successful completion of this course, students will be able to:

- Explain the principles, need and significance of classification

Use knowledge for identification of bacteria

Use tools for phylogenetic analysis

B) BIOLOGICAL DATABASE SYSTEMS (T) Course Objectives

To understand biological databases and their applications in microbiology To acquaint with various nucleic acid, protein, sequence and structure databases

To familiarize with sequence and structure file format Course Outcomes

After successful completion of this course, students will be able to: • Use various databases

Use knowledge for specific retrieval of sequence information

Frame queries for retrieval of desired information from database

Research Methodology Credits 4 Course Objectives:

1. To define research and describe the research process and research methods
2. To understand qualitative research and methods used to execute and validate qualitative research
3. To know how to apply the basic aspects of the research process in order to plan and execute a research project.
4. To provide insight into the processes that lead to the publishing of research.
5. To be able to present, review and publish scientific articles

Course Outcomes:

Students will be able to

1. Understand and explain research process
2. Do systematic literature survey, formulation of a research topic, study design, analysis and interpretation of data.
3. To design a research approach for a specific research issue of their choice.
4. Select a suitable analytical method for a specific research approach.
5. Demonstrate a good understanding of how to write a research report, 6 critically assess published quantitative research with regard to the statistical methods and approaches adopted
7. create a research document for implementation research project

Virology, Bacteriology, Parasitology Course Objectives

To aware the virus, classification, and their significance

- To abreast about bacteriology and Parasitology
- To understand the viral multiplication and pathogenic role of viruses, bacteria and parasites along with control of virus and newly emerging virus

Course Outcomes

After successful completion of this course, students will be able to:

- Explicate the virus, classification, and their significance

Comprehend the viral multiplication and pathogenic role of viruses, bacteria and parasites.

- Understanding about diagnosis and control of virus, bacteria and parasites

Microbial Physiology Course Objectives

To understand microbial diversity and their significance in microbiology To get familiar with various methods for identification and classification of bacteria and viruses

- To acquaint with Bergey's Manual, molecular phylogenetic

Course Outcomes

After successful completion of this course, students will be able to:

- Explain the principles, need and significance of classification

Use knowledge for identification of bacteria

Use tools for phylogenetic analysis

B) BIOLOGICAL DATABASE SYSTEMS (T) Course Objectives

To understand biological databases and their applications in microbiology To acquaint with various nucleic acid, protein, sequence and structure databases

To familiarize with sequence and structure file format Course Outcomes

After successful completion of this course, students will be able to: • Use various databases

Use knowledge for specific retrieval of sequence information

Frame queries for retrieval of desired information from database

Research Methodology Credits 4 Course Objectives:

1. To define research and describe the research process and research methods
2. To understand qualitative research and methods used to execute and validate qualitative research
3. To know how to apply the basic aspects of the research process in order to plan and execute a research project.
4. To provide insight into the processes that lead to the publishing of research.
5. To be able to present, review and publish scientific articles

Course Outcomes:

Students will be able to

1. Understand and explain research process
2. Do systematic literature survey, formulation of a research topic, study design, analysis and interpretation of data.
3. To design a research approach for a specific research issue of their choice.
4. Select a suitable analytical method for a specific research approach.
5. Demonstrate a good understanding of how to write a research report, 6 critically assess published quantitative research with regard to the statistical methods and approaches adopted
7. create a research document for implementation research project

Virology, Bacteriology, Parasitology Course Objectives

To aware the virus, classification, and their significance

- To abreast about bacteriology and Parasitology
- To understand the viral multiplication and pathogenic role of viruses, bacteria and parasites along with control of virus and newly emerging virus

Course Outcomes

After successful completion of this course, students will be able to:

- Explicate the virus, classification, and their significance

Comprehend the viral multiplication and pathogenic role of viruses, bacteria and parasites.

- Understanding about diagnosis and control of virus, bacteria and parasites

Microbial Physiology Course Objectives

To acquaint various life process like photosynthesis, respiration and fermentation, anaerobic respiration, and bacterial sporulation

To understand bacterial membrane transport

To understand the concept of chemolithotrophy and nitrogen metabolism

Course Outcomes

After successful completion of this course, students will be able to:

- Understand various life process like photosynthesis, respiration and fermentation, anaerobic respiration, and bacterial sporulation

- Elucidate bacterial membrane transport • Discuss the concept of chemolithotrophy and nitrogen metabolism

FOOD MICROBIOLOGY

To understand concepts in fermentation microbiology

To complement the students with the knowledge of microbiology of food preservation and spoilage To acquaint the students with food preservation methods

Outcomes

After successful completion of this course, students will be able to: Know the concepts related to popular fermented food products, its microbiology and spoilage

- Understand fermented food products, food spoilage and contamination • Understand various methods for food preservation

Applied and Industrial Microbiology Course Objectives

To understand concepts in milk microbiology

To complement the students with the basic knowledge of food microbiology

To acquaint the students with food preservation techniques

Outcomes

After successful completion of this course, students will be able to:

Know the concepts related to popular/common milk products, milk examination and spoilage

Comprehend knowledge regarding fermented food products, food spoilage and infection

- Understand diverse strategies for food preservation

A) Pharmaceutical Microbiology (T) Course Objectives

- To develop practical skills involved in interpretation of microbiological materials and data

To promote development of entrepreneurship and build up Professionals in Pharmaceutical Analysis, and R&D work, To understand quality assurance validation

Course Outcomes

After successful completion of this course, students are expected to:

- Conversant in practical skills involved in interpretation of microbiological materials and data •

Explain the development of entrepreneurship and build up Professionals in Pharmaceutical Analysis, and R&D work Aware about quality assurance validation

B) BIOETHICS, BIOSAFETY AND INTELLECTUAL PROPERTY RIGHTS Course

Objectives To give introduction to bioethics and biosafety. To give in-depth information about containment. To give knowledge about regulatory affairs of pharmaceuticals and GMO, To provide information about Intellectual rights.

Course outcome

After successful completion of this course, students will be able to

- Understand bioethics and biosafety

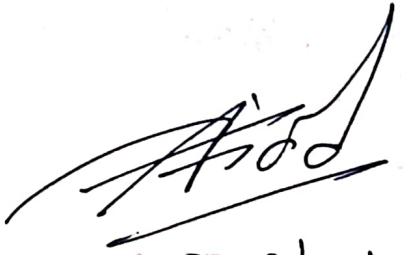
- Understand contaminants in production a Understand issues related to GMO

Use knowledge about intellectual property rights.

Mrs. K.S.K College Beed

Department Of Computer Science

- COP1: Able to formulate algorithms, pseudo codes and flowcharts for arithmetic and logical problems
- COP2: Ability in creations, manipulation and querying of data in databases.
- COP3: Ability to solve real world problems using appropriate set, function, and relational models.
- COP4: To study arithmetic circuits, combinational circuits and sequential circuits.
- COP5: Able to develop structured programming approach.
- COP6: Able to understand the concept of object oriented programming.
- COP7: Able to understand different phases of SDLC.
- COP8: Students will able to perform programming in object oriented language.
- Understand basic computer network technology.
- COP9: Identify the different types of network devices and their functions within a network.
- COP10: Understand the role of operating system as System software.
- COP11: Able to compare the various algorithms and comment about performance of various algorithms used for management of memory, CPU scheduling, File handling and I/O operations.


Dr. A.R. Shrivastava
Computer Science
Mrs. K.S.K. College Beed

**Mrs. Kesharbai Sonajirao Kshirsagar Alias Kaku Arts, Science &
Commerce College, Beed 43122
U.G. Zoology Course Outcomes:**

B.Sc. First Year

Animal Diversity – Invertebrates

- CO1 Describe general taxonomic rules on animal classification
- CO2 Classify Protista up to phylum using examples from parasitic adaptation
- CO3 Classify Phylum Porifera to Echinodermata with taxonomic keys
- CO4 Describe Phylum Nematoda and give examples of pathogenic Nematodes

Animal Diversity – Vertebrates & Developmental Biology:

- CO1 Imparts conceptual knowledge of vertebrates, their adaptations and associations in relation to their environment
- CO2 Classify phylum Protochordates to Mammalia
- CO3 Complex Vertebrate interactions
- CO4 Basic concepts of developmental biology

Cell Biology, Genetics and Evolution:

- CO1 Structural and functional aspects of basic unit of life i.e. cell concepts
- CO2 Mendelian and non mendelian inheritance
- CO3 Concept behind genetic disorder, gene mutations- various causes associated with inborn errors of metabolism
- CO4 Theories of Evolution
- CO5 Knowledge of eras and evolution of species

B.Sc. Second Year

Developmental Biology

- CO1 Basic concepts of developmental biology.
- CO2 Gains knowledge about gametogenesis, cleavage mechanisms, gastrulation and role of hormones in metamorphosis and regeneration
- CO4 Provides students insight into maintaining healthy relationships with their opposite gender and allows them to make right choice about their life partner thus preventing congenital/consanguial diseases.

Biochemistry & Endocrinology:

- CO1 Seeks to understand the mechanisms that work to keep the human body alive and functioning
- CO2 Physiological and biochemical understanding through scientific enquiry into the nature of mechanical, physical, and biochemical functions of humans, their organs, and the cells of which they are composed
- CO3 Interactions and interdependence of physiological and biochemical processes

Ecology, Animal Behaviour:

- CO1 Distribution of fauna in different realms interaction
- CO2 Understand Animal behaviour and response of animals to different instincts
- CO3 Interaction of biota abiota
- CO4 various kinds of Animal adaptations

Evolution

- CO1 Students learn the concepts of endocrine systems and homeostasis a brief account of genetics and organic evolution.
- CO2 This course helps students to gain fundamental knowledge in these topics
- CO3 Students gain fundamental knowledge of physiology and endocrine systems
- CO4 Students gain fundamental knowledge of physiology of homeostasis
- CO5 Understanding of basic concepts of genetics, laws of inheritance and central dogma of biology
- CO6 Understanding of genetic basis of evolution, human karyotyping and speciation.

B.Sc. Third year

Ecology

- CO1 Distribution of fauna in different realms interaction
- CO2 Understand Animal behaviour and response of animals to different instincts
- CO3 Interaction of biota abiota
- CO4 various kinds of Animal adaptations

Fishery Science- I

- CO1 by This topics Student know about overview of commercial fishing & Sport fishing & also recent fish catch statistics.
 - CO2 Deals with different species of fish require different habits & food sources for survival
 - CO3 Useful to know the characters of streams, riverine systems in India & their fishery
 - CO4 Useful to know the east coast river systems & West Coast river systems
 - CO5 Subject includes different reservoirs of river systems in India. & Andhra Pradesh
- Department of Fisheries Course Outcomes 1 Biology of Finfish 2 Biology of Shell Fish 3 Capture Fisheries

Evolution

- CO1 Students learn the concepts of endocrine systems and homeostasis a brief account of genetics and organic evolution.
- CO2 This course helps students to gain fundamental knowledge in these topics
- CO3 Students gain fundamental knowledge of physiology and endocrine systems
- CO4 Students gain fundamental knowledge of physiology of homeostasis
- CO5 Understanding of basic concepts of genetics, laws of inheritance and central dogma of biology
- CO6 Understanding of genetic basis of evolution, human karyotyping and speciation.

Fishery Science- II

- CO1 By learning this topic the students can easily identify the fish species
- CO2 Understand the basic nutritional requirements of fishes, recognize different prescription diets on the animals basic indications for use.
- CO3 Distinguish between the main stages of embryonic & larval development & behavioural changes that occur across the breeding period.
- CO4 By learning this subject students can easily identify the different stages that present in the life cycle of fin fishes
- CO5 By learning, the student can easily identify the locomotion activities.

**Mrs. Kesharbai Sonajirao Kshirsagar Alias Kaku Arts, Science &
Commerce College, Beed 43122
P.G. Zoology Course Outcomes:**

M.Sc. First Year

Biosystematics and Animal Diversity

- CO01 To give a thorough understanding in the principles and practice of systematics.
- CO02 To help students acquire an in-depth knowledge on the diversity and relationships in animal world.
- CO03 To develop an holistic appreciation on the phylogeny and adaptations in animals.

Biochemistry

- CO1 Seeks to understand the mechanisms that work to keep the human body alive and functioning
- CO2 Physiological and biochemical understanding through scientific enquiry into the nature of mechanical, physical, and biochemical functions of humans, their organs, and the cells of which they are composed
- CO3 Interactions and interdependence of physiological and biochemical processes.

Ecology

- CO1 Distribution of fauna in different realms interaction
- CO2 Understand Animal behaviour and response of animals to different instincts
- CO3 Interaction of biota abiota
- CO4 various kinds of Animal adaptations.

Helminthology

- CO01 Distinguish the individual parasitic infectious diseases.
- CO02 Recognize the protozoanal infectious diseases.
- CO03 Explain the methods used for diagnosis and treatment of protozoanal infectious diseases.
- CO04 Recognize the protozoanal infectious agents of individual flora regions of human body.
- CO05 Distinguish the individual helminthic infectious diseases.
- CO06 Recognize the helminthic agents.
- CO07 Explain the methods used for diagnosis and treatment of helminthic infectious diseases.
- CO08 Recognize the trematode agents.
- CO09 Explain the methods used for diagnosis and treatment of trematode infectious diseases.
- CO10 Recognize the nematode agents.
- CO11 Explain the methods used for diagnosis and treatment of nematode infectious diseases.
- CO12 Distinguish the methods used for protection of parasitic infectious diseases.

Research Methodology [RM]

- CO1 The course provides wide knowledge about research, experimental & sampling design,
- CO2 Data collection, analysis & interpretation of data and allows student to present the research data in scientific method
- CO3 Gains skill to solve problems using inferential statistical tools
- CO4 Learns to collect literature collection, literature citation, and components of research report –
Text, tables, figures, bibliography.

- CO5 Writing of dissertations, project proposals, project reports, research papers.
CO6 Intellectual Property Rights – Biopiracy, copyrights, patent and traditional knowledge and plagiarism.
CO7 Understanding of Laboratory safety measures, laboratory good practices, animal model systems, animal ethics- animal welfare guidelines for care and use of animals.

Genetics & Bioinformatics

- CO01 Knowledge and awareness of the basic principles and concepts of biology, computer science and mathematics
CO02 Existing software effectively to extract information from large databases and to use this information in computer modelling.
CO03 Problem-solving skills, including the ability to develop new algorithms and analysis methods an understanding of the intersection of life and information sciences, the core of shared concepts, language and skills the ability to speak the language of structure-function relationships, information theory, gene expression, and database queries
CO04 Concept behind genetic disorder, gene mutations- various causes associated with inborn errors of metabolism
CO05 Theories of Evolution
CO06 Knowledge of eras and evolution of species.

Cell and Molecular Biology

- CO01 This course introduces the students to the basics of cell and its components.
CO02 This gives them a strong foundation on the basic unit of life.
CO03 At the end of the course, the student has a strong foundation on the functions of the cell.

Biophysics

- CO01 Foundations: Examine biophysical scenarios using both a conceptual understanding of the core concepts of biology, chemistry, and physics, and calculations using the appropriate methods of mathematical, theoretical, and computational physics.
COI02 Scientific communication: Effectively communicate biophysics content through both written reports and oral presentation.
CO03 Experimental methods: Use modern experimental equipment and techniques to acquire data, assess the advantages and limitations of these techniques, and design experiments to leverage their probative power.
CO04 Applications: Assess biophysics questions by applying their physics and biophysics experience and knowledge to interpret experimental data and draw scientific conclusions.

M.Sc. Second Year

Developmental Biology

- CO1 Basic concepts of developmental biology.
CO2 Gains knowledge about gametogenesis, cleavage mechanisms, gastrulation and role of hormones in metamorphosis and regeneration
CO4 Provides students insight into maintaining healthy relationships with their opposite gender and allows them to make right choice about their life partner thus preventing congenital/consanguial diseases.

Immunology [IMM]

- CO1 Provides basics knowledge about immune system and allows the student to create insight as how to improve their immune system and good health.
- CO2 Types of immunity, antigens-antibodies and their properties
- CO3 Complement system, MHC's and immune responses
- CO4 Understanding of types of hypersensitivity reactions and auto immune diseases
- CO5 Ability to understand concepts of tumour immunology and transplantation immunology

Animal Biotechnology [AB]

- CO1 It gives insight into various cell/tissues culture techniques
- CO2 Understanding of in vitro culturing of organisms and production of transgenic animals.
- CO3 Understanding of cloning of mammals, large scale culture and production from recombinant microorganisms
- CO4 Gains skills in medical, environmental biotechnology, bio pesticides, Biotechnology of aquaculture and use of animals as bioreactors
- CO5 This insight allows students to take into consideration about ethical issues involved in production transgenic animals and BT products.

Biostatistics

- CO01 Explain key components of research design and statistical analysis, including observational studies, clinical trials, and survey studies
- CO02 Use statistical software to apply statistical methods and techniques
- CO03 Perform statistical analysis using modern statistical methods.

Pisciculture

- CO1 Course provides them comprehensive understanding about aquatic ecosystem and various economical important fishes.
- CO2 Students gain knowledge in the areas of responses characterization and classification of Ostracoderms, placoderms, acanthodians, holocephali, elasmobranchs.
- CO3 Students gain knowledge of integumentary system - basic structure of skin, dermal and epidermal pigments, fins, and scales.
- CO4 Understanding of embryogenesis - Early development and post embryonic development
- CO5 Understanding of fishes habits and habitats and their functional anatomy
- CO6 The students will be well equipped to become very competent in research or teaching fields
- CO7 It is one of the small scale industry which can provide the student employment opportunity.

Fishery Science

- CO1 By learning this topic the students can easily identify the fish species
- CO2 Understand the basic nutritional requirements of fishes, recognize different prescription diets on the animals basic indications for use.
- CO3 Distinguish between the main stages of embryonic & larval development & behavioural changes that occur across the breeding period.
- CO4 By learning this subject students can easily identify the different stages that present in the life cycle of fin fishes
- CO5 By learning, the student can easily identify the locomotion activities.

Evolution & Behaviour

- CO1 Imparts knowledge regarding the various theories of evolution, evolutionary process such as variation, speciation, natural selection, origin of primates and man
- CO2 Understanding of origin and salient features of Ostracoderms to Actinopterygii, adaptive radiation of Amphibians, Reptiles, birds and Mammals
- CO3 Gains knowledge of functional anatomy of vertebrates from fishes to mammals
- CO4 Understanding of evolutionary significance of internal fertilization, neoteny and paedogenesis
- CO5 Identifies the significance of amniotic egg its structure and evolutionary significance of skeletal system

tical

General & Comparative Animal Physiology

- CO1 Comparative animal physiology is a comprehensive subject that gives in depth knowledge of various physiological processes in the animal kingdom
- CO2 students gain knowledge about the comparative physiological concepts of nutrition digestion respiration excretion metabolism and osmoregulation.
- CO3 Course provides students comprehensive understanding about neurobiology, neurophysiology, molecular neurobiology
- CO4 Understanding of cognitive/ behaviour neurobiology, thus allowing then to correlate the human behaviour under given situation.
- CO5 It gives comprehensive understanding regarding inborn disorders and deranged metabolisms.
- CO6 Students feel confident in teaching physiology as well as executing research projects
- CO1 With the study of this paper students gain knowledge in the areas of responses to environment with study of receptors CNS integration of behaviour
- CO2 Understanding of the functions of effectors in all aspects as well as the circulatory physiology and reproduction and adaptations by animals to environment
- CO3 The students will be well equipped to become very competent in research.
- CO4 The course provides employability in teaching fields

cs
lg

Animal Tissue Culture

- CO01 There are several applications of plant tissue culture. The outcomes of application of plant tissue culture are as follows:
- CO02 Micropropagation is widely used for the development and preparation of foliage and ornamental plants. By this technique, ornamental plants are produced in large numbers which are used for decoration purposes.
- CO03 Through the process of apical meristem culture, virus free germplasm is produced. By obtaining the technique of somatic embryogenesis, several types of artificial synthetic seeds are produced.
- CO04 Plant tissue culture is used for the production of secondary metabolites in large quantities.
- CO05 Protoplasmic fusion enables the genomes of incompatible crops to form somatic hybrids together.

Project

- CO1: Make research proposal
- CO2: Construct tool of data collection
- CO3: Learn fieldwork modalities
- CO4: Understand the process of data analysis
- CO5: Writing research report

Dr. Shelke A.N.
Dept. of Zoology

Mrs. K. S. K. College, Beed.
DEPARTMENT OF PHYSICS
2023-24

B.Sc. Physics- Specific Objectives and Course Specific Outcomes

- CSO.1.**To prepares students with latest knowledge in any technology and illustrates theoretical concepts of Heat and Thermodynamics.
- CSO.2.**To improve student's ability in science concept and practical laboratory process skills and to verify basic ideas of Mechanics, Properties of matter and sound.
- CSO.3.**Provide a systematic understanding of Physical concepts, principles and theories of optics along with their applications and to identify major challenges that students face in doing practical laboratory work.
- CSO.4.**To empower the students with the knowledge of electronic components and repairing and to Testing, Repairing and Maintenance of these equipment's. Apply and illustrate theoretical concepts of electricity and magnetism.
- CSO.5.** Apply and verify knowledge of Mathematical and Statistical Physics for solving complex problems
- CSO.6.**Understand the knowledge of Modern Physics and describe the different types of nuclear reactions and nuclear models, accelerators, detectors and their applications for evaluation of safety, harmful, peaceful and social issues.
- CSO.7.**Ask to draw circuit diagrams, connect circuits, Understanding of core knowledge on various papers of Physics. Create Curiosity for learning General Electronics.
- CSO.8.**Understand the basic aspects of crystallography in solid state physics, to device method(s) that help tackle with these problems.
- CSO.9.**Describe the Principle and applications of Atomic, molecular physics and Laser.
- CSO.10.**Detailed study of nonconventional energy sources and optical fibers which produce awareness among students related to energy issues.
- CSO.11.**Apply and illustrate the knowledge of classical and quantum mechanics to the solution of complex problems
- CSO.12.**Acquire adequate knowledge of Electrodynamics

Course outcomes

On Successful completion of this course students will be able to

1. Students show analytic ability to solve Problems relevant to statistical mechanics and demonstrate knowledge of Special relativity.
2. Students will be able to explain the experimental set up and apply it for applications in specific fields of their interest.
3. Students should be employed sensor and instrumental physics for industrial Process monitoring applications
4. Students will be able to operate semiconductor devices, techniques, and various circuits
5. Students will be able to recognize common crustal structures, different types on bonds and bonding in solids
6. Students should be known the advantages and limitations, the need of renewable energy resources and latest developments in renewable energy resources.
7. Students should be familiar and experience with various mechanical and Electrical tools through hands on mode.
8. Students should be able to provide adequate knowledge about equipments
9. Relate their knowledge and skills in carrying out independent work.
10. Performance Evaluation through Laboratory Experiments, laboratory practices enhance the students learning experience
11. Assessment through presentation in Students Seminars
12. Allow for Self-Assessment, formulate and solve problems in a systematic and logical manner.
13. Assess through formal tests, Assess through class tests
14. Possess advanced knowledge and skills in job market for various technical industries. Allow for Group discussion
15. Demonstrate skills and competencies to conduct scientific experiments related to Physics Clear the concepts which help them in understanding physical phenomenon in nature.
16. Giving Homework and classroom assessment technique
17. Possess advanced knowledge and skills in job market for various technical industries. Assess through concept test
18. Assessment through presentation in Students Seminars, analyze situations, search for truth and extract information, formulate and solve problems in a systematic and logical manner.
19. Allow for Group discussion, debate and communicate in a clear and logical way.
20. Identify their area of interest Assessing through Group work and informal observation

Mrs. K. S. K. College, Beed

Department of Chemistry

Course Outcomes

M. Sc. I Year

➤ **Paper name- Analytical chemistry-I**

- Understand why analytical measurement need to be made.
- Understand the importance of the producing reliable results.
- Define what is meant by quality.
- Understand the importance of sampling and able to identify different types of samples
- Understand the basis in each separation techniques, via. Crystallization, sublimation distillation, extraction.
- Understand the theory of liquid liquid extraction
- Understand the theory of solid phase extraction
- Understand basic of chromatographic techniques for separation of constituent of mixtures
- Understand rate and play theory of chromatography

➤ **Paper name -Inorganic chemistry -I**

- To understand the stability constant of metal complex step wise and overall formation constant
- To describe the factors affecting for stability of metal complexes
- To identify and describe technologies for determination of formation constant of metal complexes
- To analyze the structural and Stereoisomerism of metal complexes and their Mechanism
- To understand the mechanism in metal complexes
- To understand acid and base hydrolysis of metal complex and their mechanism
- To understand the role of trans effect in the synthesis of platinum complex
- To distinguish between the inner and outer sphere mechanism of electron transfer reaction of metal complex
- To memorize the function of essential and trace element in biological system

➤ **Paper name-Organic chemistry –I**

- Understand the chemical and molecular process in organic chemical reaction
- Study the concept of alternate and non-alternate hydrocarbons.
- Study the energy level of molecular orbitals
- Explain the concept of aromaticity
- Know the types of mechanisms in organic reactions
- Understand the correlation between the thermodynamic and kinetic parameters.
- study the different intermediates in all in organic chemical reaction.
- learn the various types of aliphatic nucleophiles substitution reaction

➤ **Paper name-Physical chemistry –I**

- To understand the fundamental principle of chemical kinetics to learn different theories of chemical kinetics
- To understand concept of fast and slow reaction based on their rate constant and rate reaction rates
- To understand the concept of thermodynamics to apply critical thinking and problems solving skills to solve problem related
- To thermodynamics and chemical kinetics to understand the basic concept of micelles

➤ **Inorganic chemistry laboratory course-I**

- To understand the difference between quality and constitute analysis
- To understand the concept of quality to and continue to chemical analysis and their chemical reaction and constant
- To understand the design and development of experimental setup and procedure for volumetric and gravimetric analysis of chemical compound
- To identify constituent of chemical qualitative and quantitatively
- To understand importance of accuracy and precision in measurement of chemical analysis
- To apply grasped knowledge to solve chemical analysis related issue of stockholder
- To understand importance of liability skills recursions accuracy and decision
- To separate and identify acidic and basic radicals from chemical sample
- To apply the grasped knowledge in chemical analysis of unknown sample

➤

Organic chemistry laboratory course-I

- Understand the separation and purification techniques
- Understand various tips in all in identification of organic compounds
- Understand the handling of equipment required for analysis of organic compounds
- Understand the structure of the reaction to check the purity of components using TLC
- To check the melting point

➤ Physical chemistry laboratory course-I

- To analyze sample by various instrumental techniques
- To handling of electronic equipment to understand liberty skills precautions accuracy and precision
- To design experimental procedure for analysis importance chemical and samples
- To understand the physical properties of chemicals
- To distinguish accuracy of results in instrumental and non-instrumental methods

➤ Paper name-Analytical chemistry-2

- To define the different region of an electromagnetic radiation
- To understand the interaction transition of the matter with different region of electromagnetic radiation
- To define basic elements of spectroscopic technique
- To calculate the wavelength at which molecule show maximum absorption of UV visible radiation
- To interpret the ultraviolet visible spectrum
- To define the bands in the IR spectrum due to fundamental frequency and overtone combinations bands and Fermi resonance
- To define the vibrational frequency of particular bond
- To calculate the vibrational frequency of a particular bond
- To interpret the infrared spectrum to predict the structure using UV visible and IR Spectrum.

➤ Organic chemistry -2

- Understand the concept of stereochemistry
- know the stereochemical notation
- know the difference between species stereospecific and stereoselective reactions
- Study the stereochemistry of some chiral molecules like Biphenyl, allenes and spiranes.
- Acquire the knowledge of various methods of resolution
- Understanding of the compounds containing nitrogen, sulfur and phosphorus

➤

Paper Name-Research Methodology

- Understand the basic concept of research methodology
- Know recent trends in chemical research.
- acquire the fundamental knowledge of various characterization techniques.
- apply of characterization techniques viz. XRD, SEM,TEM,UV,IR,NMR and Mass Spectroscopy

➤ Analytical chemistry -3

- To understand the basic principle of different chromatography techniques for separation of constituent of mixture
- To understand theory instrumentation working procedure and applications as well as limitations of TLC
- To understand theory instrumentation working procedure and applications as well as limitations of liquid liquid partition chromatography
- To understand theory instrumentation working procedure and applications as well as limitations of column chromatography
- To understand theory instrumentation working procedure and application as well as limitations of gel permeation chromatography
- To understand theory instrumentation working procedure and application as well as in limitation of ion exchange chromatography

➤ Inorganic chemistry -3

- Define and classify metal carbonyls
- To design procedure to synthesize mononuclear and binuclear metal carbonyl
- To understand the properties and structure metal carbonate
- To apply the concept of effective atomic number for prediction of stability of metal carbonyls
- To synthesize the nitrosyl halide and their properties
- To understand the structure and properties and applications of sodium nitroprusside
- To apply the knowledge of EAN and 18 electron rule metal carbonyl compounds of transition elements
- To understand the orbital splitting in different environment
- To understand factor affecting crystal field energy
- To describe John Teller distortion and CFSE for high and low spin complexes.

➤

Organic chemistry -3

- Understand various reaction in all in addition to C-C and C-O double bond
- Acquired chemical aspects in addition reaction
- Demonstrate apply the concept involved in elimination reaction
- Understand mechanism of various name reactions

➤ Physical chemistry -3

- To understand the fundamental principle of quantum mechanics.
- To solid equation calculate real function in energy levels
- To understand the postulate of quantum mechanics
- To understand the molecular theory of conjugate system and it's applications.

➤ Inorganic Chemistry Laboratory course – II

- To design experimental procedure for synthesis of metal complexes calculation of conversion factor and characterization of synthesized coordination complex compounds
- To understand which skills are required in chemical laboratory
- To understand importance of accuracy and precision in chemical analysis
- To design the experimental procedure for separation and estimation of metals from mixture solution
- To estimate the common of constituents of chemicals by volumetric and gravimetric methods
- To apply grasped knowledge for finding purity of chemicals

➤ Organic chemistry laboratory course-II

- To perform demonstrate the techniques in order in organic binary mixture separations specifically solid-liquid mixture
- To perform distillation techniques for verification of organic compounds
- To use apply the technique of separation crystallization derivatives derivation and functional group detection
- To use the methods for the separation of useful compounds using name reaction

➤ **Physical chemistry laboratory course –II**

- To analyses sample by various instrumental techniques.
- To handling of electronic equipment
- To design experimental procedure for analysis importance chemical and samples
- To understand the physical properties of chemicals
- To distinguish accuracy of result in the instrumental and non-instrumental methods

➤ **Analytical chemistry -4**

- To be able to define the factors that determine chemical shift
- To be able to locate chemical shift positions of H1 attached to common functional groups
- To be able to determine the characteristics chemical for different protons
- To be able to predict the structure of component using NMR data
- To be able to produce the structure of compounds using UV-Visible, IR and NMR
- To understand the principle, instrumentation and application
- To be able to define different ionization techniques in the mass spectrometry
- To understand the fragmentation process in mass spectrometric

➤ **Organic chemistry -4**

- Understand aromatic electrophilic substitution reaction
- Acquire the knowledge of direct nature of functional groups
- Know directing nature of attacking electrophilic on various aromatics
- Understand requirement for aromatic nucleophilic substitution reaction
- Describe the basic consists in molecular Rearrangement
- Acquire the knowledge of migratory aptitude.

M. Sc. II Year

Chemistry

➤ Paper name- Structural elucidation by spectral methods

- Understand elementary ideas of coupling spin.
- Understand of the principle of Microwave, IR, Raman, Electronic, NMR, ESR and Mossbauer spectroscopy
- know applications of mass spectroscopy in determination of structures.
- Understand the chemical shifts of aliphatic olefin alkyne aromatic heteroatomic and carbonyl carbon

➤ Paper Name-Organic synthesis

- Understand various reactions and rearrangements.
- Understand and write mechanism of reactions and their applications.
- Understand how to convert one molecule into another by using oxidizing and reducing, reagents.
- Apply theoretical knowledge in practical for various conversions.

➤ Paper name-Asymmetric synthesis and Bio-organic chemistry

- Understand the Classification, Nomenclature activity of enzyme.
- Understand the supramolecular chemistry and biomimetic chemistry
- Understand various ways of attack on electrophilic species by a nucleophile
- To predict enantioselective product.
- Understand mechanisms in asymmetric reaction.
- Visualize 3D structure of molecules.
- Develop interest in Asymmetric synthesis of naturally occurring essential compounds

➤ Paper name- Photochemistry, free radicals and pericyclic reaction

- Understand various Pericyclic and photochemical reactions and rearrangements.
- Understand and write mechanism of reactions and their applications.
- Understand how to synthesize five, six and seven-membered heterocycles.
- Utilize their knowledge in practical for various heterocyclic and photochemical conversions.

➤ Paper name-Organic synthesis: Retrosynthetic approach

- Understand retrosynthesis analysis and designing of the synthesis.
- Understand protection and deprotection of hydroxy, carbonyl in aldehyde and ketones, amines, carboxylic acids alkenes and alkynes.
- Understand the ring synthesis rearrangement and photochemistry in synthesis aromatic heterocycles

➤ **Paper Name-Advanced Organic and Heterocyclic Chemistry**

- Understand heterocyclic chemistry in a broad perspective.
- Understand the most important heterocyclic systems, such as pyridines, quinolines, isoquinolines, pyrroles, furanes, thiophenes, indoles, pyrimidines, purines, imidazoles, aziridines and oxiranes.
- Understand Pummerer, Payne, Eschenmoser fragmentation, Brook, Wagner-Meerwein, Wolf rearrangements.

➤ **Paper Name-Chemistry Of Natural Product**

- Understand different Secondary metabolites and their importance.
- Become familiar with many reagents used in organic synthesis
- Understand nature better by studying mechanisms in biological reactions.
- Understand various laboratory methods to determine structure of unknown organic sample.
- Develop interest in Biogenesis of naturally occurring essential compounds.

➤ **Paper name-Medicinal chemistry**

- To understand the drug metabolic pathways, adverse effect and therapeutic value of drugs
- To know the structural activity relationship of different class of drugs.
- Well acquainted with the synthesis of some important class of drugs.
- Knowledge about the mechanism pathways of different class of medicinal compounds.
- To understand the chemistry of drugs with respect to their pharmacological activity.



Head

Department of Chemistry
Mrs. K.S.K. College, Beed.

Mrs. K. S. K. College, Beed

Department of Chemistry

Course Outcomes

❖ **B. Sc I Year**

➤ **Paper-I Inorganic Chemistry (Theory)**

- Introduction of quantum mechanical model of the atom, quantum numbers, electronic configuration, radial and angular distribution curves and shapes of various orbitals
- Learn to draw the plausible structures and geometries of molecules using Radius Ratio Rules, VSEPR theory and molecular orbital diagrams
- Learn the concept and periodic trends in atomic radii, ionic radii, ionization energy and electron affinity of elements
- Understand the concept of lattice energy

➤ **Paper-II Organic Chemistry (Theory)**

- Know structure and bonding of compounds of carbon and factors that control their reactivity such as inductive effect, resonance, hyper conjugation etc.
- Gain basic knowledge of stereochemistry of organic molecules.
- Understand the basic concepts in Organic Chemistry to be used in the subsequent semesters.
- Learn the details of hybridization, electronic displacement and their applications.
- Detailed study of the chemistry of hydrocarbons aliphatic and aromatic.
- Enhance the knowledge on various reaction mechanisms through correlation with the fundamental properties of the reactants

➤ **Laboratory Course-I (Practical)**

- Learn the calibration and use of apparatus
- Learn to prepare solutions of titrants of different Molarity/Normality
- Learn the principles of acid-base titrations and redox titrations
- Learn to determine strength of solutions
- Analyze an inorganic mixture qualitatively for Acidic and Basic radicals

➤ **Paper-III Physical Chemistry (Theory)**

- Understand of behavior of gases, ideal gas as a model system and its extension to real gases
- The dependence of physical state on pressure, volume and temperature.
- The first, second and third laws of thermodynamics.
- The concept of kinetics , terms used , rate laws , types of order
- To discuss examples of first order and second order reaction
- The factors affecting on rate of reaction.

➤ **Paper-IV Applied Chemistry (Theory)**

- Explain various techniques of chromatography like Thin Layer Chromatography, Paper chromatography, Column chromatography and their applications to separate & purify the mixture of components.
- Able to study the process of manufacture of glass.
- Understanding of fertilizers and its types and necessity of good fertilizers
- Study of principle, electronic transition and applications of ultra violet Spectroscopy.

➤ **Laboratory course-II (Practical)**

- To determine viscosity of given liquid (water/ ethanol) by viscometer.
- To determine surface tension of given liquid by staganometer.
- Identify and separate the components of given mixture of two acid amino acids (any amino acid) by paper chromatography.
- To study the effect of acid strength on the hydrolysis of an ester.

❖ **B. Sc II Year**

➤ **Paper-V Organic chemistry (Theory)**

- Understanding chemistry of nitrogen containing functional groups, polynuclear hydrocarbons, heterocyclic compounds and natural compounds
- General method of synthesis of furan, pyrrole, thiophene, pyridine, indole, quinoline & isoquinoline & their reactions.
- Understand structure and aromaticity of benzene and mechanism of electrophilic substitution reactions.

- Study different classes of aromatic compounds such as aromatic halogen amino, diazonium salts, aromatic sulphonic acids, phenols, aldehydes and ketones, polynuclear hydrocarbons, heterocyclic compounds.

➤ **Paper-VI Physical Chemistry (Theory)**

- Understand elementary Quantum Mechanics
- Understand Photochemistry, Surface Chemistry, chemistry of dilute solutions and colligative properties
- Understand Chemical and Phase Equilibrium
- The theoretical basis of adsorption phenomena, dynamic nature of surface and its applications in catalysis and in dispersed phases

➤ **Paper-VII Inorganic Chemistry (Theory)**

- Understand crystal field theory for coordination compounds and their electronic spectra
- Understand the concept of oxidation & reduction, oxidizing agent, reducing agent, redox reaction, oxidation number
- Study various theories of bonding like valence bond theory, crystal field theory, ligand field theory and molecular field theory
- Understanding the application of crystal field theory.

➤ **Paper-VIII Applied Chemistry (Theory)**

- Understand Infrared spectroscopy and its applications.
- Understand the Raman spectroscopy and rotational raman spectra of linear diatomic molecule.
- Understand fundamental and properties of pigments and dyes.

➤ **Practical Paper –V Physical Chemistry**

- To use colorimeter for the determination of conductance of different solutions.
- Demonstrate the application of colorimeter for studying various acid - base titrations
- Experimentally study the kinetics of Iodine -persulphate reaction.
- Understood reference electrode- Primary and secondary reference electrode.

➤ **Practical Paper –VI Organic Chemistry**

- Qualitative analysis of unknown organic compounds such as alcohols, carboxylic acids etc.
- Students get an idea how to identify an unknown organic compound, which is very useful in subsequent semesters.
- Systematic analysis involves alcohols, carboxylic acid, phenols, carbonyl compounds and esters
- Preparation of ethyl benzoate, phthalic acid, Hydroquinone.. etc

- Determination of equivalent weight of carboxylic acid by titration.

➤ **Practical Paper –VI Inorganic Chemistry**

- Learning method development for analysis of different samples.
- Learn separation of analytes by chromatography.
- Learn to separate amino acids from organic acids by ion exchange chromatography.
- Learn to determine exchange capacity of cation and anion exchange resins.
- Learn extraction of components using solvent extraction.

➤ **Practical Paper –VII Applied Chemistry**

- Estimation of Aspirin from given tablet and find errors in qualitative analysis.
- Estimation of Paracetamol content in Tablet.
- Determination of Hardness of water from given sample by complex metric titration.
- Determination of molecular weight of polymer by using different concentration of solution.

❖ **B. Sc III Year**

➤ **Paper-XIII Physical Chemistry (Theory)**

- Understand elementary Quantum Mechanics
- Understand nuclear forces, radioactivity and its applications
- Study Statistical/ Molecular Thermodynamics
- Understand Rotational, Vibrational and Electronic Spectroscopy

➤ **Paper-XIV Organic Chemistry (Theory)**

- Understand brief description of NMR, including what peaks represents and their structure.
- Understand Preparation and properties of Organometallic compounds.
- Understand Idea about Grignard reagents (formation, structure and chemical properties).
- Study the important synthetic routes and reactivity for five and six member hetero aromatic compounds.
- Understand the important physical and chemical properties of five and six member hetero aromatic compound

➤ **Practical Paper –XV Organic Chemistry (Practical)**

- Inorganic Qualitative Analysis (Semi-Micro Analysis)

- Estimation of oxalic acid and H_2SO_4 in a given mixture
- Solution using NaOH and KMnO_4 solution
- Separation of calcium and Barium and estimation of Ca-volumetrically
- Estimation of Fe by potassium dichromate using diphenyl ammine indicator.

➤ **Paper XVI Inorganic Chemistry (Theory)**

- Understand Metal-Ligand Bonding in Transition Metal Complexes.
- Understand Crystal Field Splitting in Octahedral, Tetrahedral and Square Planar Complexes
- Selection rules for d-d transitions.
- Definition and classification of chromatography Paper and Thin Layer Chromatography and Applications.

➤ **Paper XVII Organic Chemistry (Theory)**

- Understand Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine.
- Determination of open chain structure of glucose & pyranose ring structure of glucose .
- Understand Definition, introduction, classification of drugs. Properties of ideal drug.
- Study Synthesis of chloromycetin, paracetamol, phenacetin, sulphaguanidine.

➤ **Paper XVIII Organic Chemistry (Practical)**

- Determine the Strength of HCl and CH_3COOH in a given mixture by titrating against strong base conductometrically.
- Determine the strength of oxalic acid conductometrically using sodium hydroxide solution. To determine the interfacial tension between two immiscible liquids.
- To study the effect of addition of an electrolyte NaCl / KCl on the solubility of benzoic acid at room temperature.




Head
Department of Chemistry
Mrs. K.S.K. College, Beed

Department of Mathematics

Course Outcomes (COs) of B.Sc. Mathematics

- CO1. After successful completion of the course the student will able to identify and study equation of plane, basic ideas of lines, Spheres and cylinders.
- CO2. Students will able to classify the sequences, check the limit and continuity of functions, evaluate and derivative of functions, find the curl divergence and gradient of functions.
- CO3. At the end of the course student will able to learn elementary knowledge of number theory, evaluate the greatest common division and solve Diophantine equations understanding of divisibility concept prime numbers and usefulness of congruence, use the results to solve problems.
- CO4. After successful completion of the course student will able to apply method of integration and find the integral of function, find the surface area and volume of given shape.
- CO5. Student we learn the basic methods of finding solution of differential equations. Determine solution of first order linear differential equation, determine solution of exact differential equation determine solution of linear equation with constant coefficient using general and short method, determine solution of linear homogeneous differential equation.
- CO6. Student will learn the fundamental properties of Laplace and Fourier transforms. Determine Laplace transform for various functions and understand the properties of Laplace transforms. Determine inverse Laplace transform properties of inverse Laplace transform and solve the problems using convolution theorem. Determine Fourier transform and understand the properties of Fourier transform courier sine and cosine transforms. Apply Laplace transform to find the solution of differential equations.
- CO6. Student will able to describe the forces, resultant of forces, factor moment of forces, moment of couples, laws and rules. Describe different types of forces, triangle law forces parallelogram of forces resultant of forces sine rule and cosine rule. Explain result of several coplanar forces, equation of the line of action of the resultant, equilibrium offer is it body under three coplanar forces, explain Lamis theorem, polygon of forces. Explain vector moment of a force and vector moment of a couple and describe basic concepts of centre of gravity and its applications.
- CO7. Student will learn the methods of finding the solution of partial differential equations. Solve Lagrange's equation, find different types of solutions like complete integral singular integral and general integral. Determine the solution of partial differential equations using 4 feet method, describe Monges method, method of transformation.
- CO8. Student will learn the final differences interpolating method numerical methods to solve differential equations. Describe final differences and apply Newton's formula for interpolation, explain and apply Lagrange's and Newton's divided difference formula for interpolation. Apply cost interpolating formula sterling and Bessel's formula, apply numerical differentiation and numerical quadrature formula.
- CO9. Student will able to find the velocity acceleration speed angular momentum field of force and motion under gravity.
- CO10. After successfully completion of the course student will learn the details about real valued functions, countability, sequence of real numbers, series of real numbers and Jacobians.
- CO10. After completion of the course student will get the knowledge about the group theory and ring theory.
- CO11. After completion of the course student will get the knowledge about limits in a matrix space continuous function on metric spaces connectedness completeness and compactness or Rieman integral, courier series. Elementary basic concepts of vector spaces linear independent and bases dual spaces inner product spaces modules, Linear equations with variable coefficient homogeneous equation with analytic coefficient, Legendre's equation, linear equations with regular singular points.


H.O.D.
Dept. of Mathematics
K. J. Somaiya Institute of Engineering & Technology, Vashi, Mumbai

Department of Mathematics

Course Outcomes (COs) of M.Sc. Mathematics

- CO1.** After completion of the course student will get the knowledge about limits in a matrix space continuous function on metric spaces connectedness completeness and compactness and Riemann integral, Fourier series.
- CO2.** Elementary basic concepts of vector spaces linear independent and bases dual spaces inner product spaces modules.
- CO3.** Linear equations with variable coefficient homogeneous equation with analytic coefficient legendary equation linear equations with regular singular points.
- CO4.** To learn algebraic structures such as groups cyclic groups permutation groups and their properties.
- CO5.** To understand the concept of isomorphism and its properties.
- CO6.** To study ideals and irreducible polynomials.
- CO7.** To learn Raymond stieltjes integral, fundamental theorem of calculus, point wise and uniform convergence.
- CO8.** To study theorems on uniform convergence, functions of several variables. Aqua scale of partial differentiation and Jacobian.
- CO9.** To learn complex number system branch of logarithm, roots of unity. Study analytic function, harmonic function, power series trailer series and Laurent series.
- CO10.** To determine bilinear transformation.
- CO11.** To introduce the nonlinear first order ordinary differential equations method of successive approximations existence and uniqueness theorem.
- CO12.** Recognize connections between different branches of mathematics.
- CO13.** Recognize and appreciate the connections between theory and applications.




H.O.D.

Dept. of Mathematics

Mrs. K.S.K. Alias Kaku College, Beed

कोर्स आउटकम्स हिंदी
(Course Outcomes-Hindi)

Course No.	Course Title	Course Outcomes
B.A. First Year	हिंदी साहित्य का इतिहास (आदि तथा मध्यकाल)	१ इस पाठ्यक्रम के अध्ययन से छात्र छात्राएं हिंदी साहित्य के इतिहास से परिचित होंगे।
		२ हिंदी की शब्द संपदा के विस्तार की जानकारी प्राप्त करेंगे।
		३ छात्र छात्राओं के जीवन दृष्टि एवं माननीय मूल्यों का विकास होगा।
	आधुनिक कविता	१ इस पाठ्यक्रम से छात्र छात्राओं का कविता के साथ सामान्य परिचय होगा।
		२ छात्र छात्राओं के व्यक्तित्व का विकास होगा। जीवन दृष्टि का विकास होगा।
		३ रचनात्मक कौशल में दक्षता होगी, जिससे उन्हें रोजगार की संभावनाएँ प्राप्त होगी।
B.A.II nd Year	नाटक साहित्य	१ इस पाठ्यक्रम से छात्र छात्राओं को नाट्य साहित्य से परिचित करवाना।
		२ छात्रों में नाट्य कौशल की वृद्धि कराना।
		३ नाटक मंथन तथा अभिनय अभिरुचि की वृद्धि कराना।
	कथेत्तर गद्य साहित्य	१ इस पाठ्यक्रम से छात्रों में व्यक्तिगत सामाजिक तथा राष्ट्रीय मूल्यों के प्रति जागृति कराना।
		२ गद्य साहित्य के पठन पाठन की अभिरुचि को विकसित कराना।
		३ गद्य साहित्य की विविध साहित्य विधा से छात्रों को परिचित कराना।
B.A.III rd Year	प्रादेशिक साहित्य	१ छात्रों को प्रादेशिक साहित्य के ज्ञान से परिचित कराना।
		२ इस पाठ्यक्रम के अध्ययन से छात्रों को हिंदी के प्रादेशिक कथा साहित्य से परिचय करवाना।
		३ जीवन मूल्यों के प्रति आस्था का विकास कराना।
	मध्यकालीन काव्य	१ भारतीय भक्ति आंदोलन से छात्रों को परिचित कराना।
		२ मध्यकालीन सांस्कृतिक संवेदना का अध्ययन कराना।
		३ इस पाठ्यक्रम के अध्ययन से छात्र मध्यकालीन कवियों की कविताओं से परिचित होंगे।

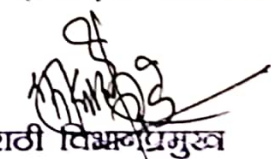

मुख्य शिक्षक
हिंदी विभाग
के.ए.पी.ए.जी. (क.ए.पी.ए.जी.)
कोड (क.ए.पी.ए.जी.) - 431122

Dept. of Marathi

PSO (Programmes Specific Outcomes) (अभ्यासक्रमाची फलनिष्पत्ती):

कला शाखेच्या पदवी आणि पदव्युत्तर पातळीवर मराठी भाषा आणि साहित्य हा विषय शिकवला जातो. प्राचीन साहित्यातील विविध संप्रदायांचा अभ्यास, मध्ययुगीन काळातील साहित्य, आंग्लकाळातील साहित्य, आधुनिक काळातील साहित्य, स्वातंत्र्यपूर्व आणि स्वातंत्र्योत्तर काळातील साहित्य अशा प्रकारचे स्वरूप या अभ्यासक्रमाचे आहे. याबरोबरच संशोधनशास्त्र, साहित्यशास्त्र, समीक्षाशास्त्र, भाषाशास्त्र, वाङ्मयाचा इतिहास आदी अभ्यासपत्रिकाही शिकवल्या जातात.

या एकूण अभ्यासपत्रिकांच्या अध्यापनातून लेखन कौशल्ये, वाचन कौशल्ये, पुस्तक परीक्षण, नाट्य आणि चित्रपट परीक्षण, पटकथालेखन, समीक्षालेखन, उपयोजित मराठीतील विविध कौशल्ये (उदा. संवाद कौशल्ये, मुलाखत कौशल्ये) ललित आणि वैचारिक निबंधलेखन कौशल्ये विद्यार्थी संपादन करतात. याबरोबर कविता, कथा, कादंबरी, नाटक यांचे प्रत्यक्ष लेखन करण्यासाठी प्रवृत्त होतात.


मराठी विभागप्रमुख
सौ.के.एस.के.महाविद्यालय,वी.

PROGRAMME OUTCOMES AND COURSE OUTCOMES

B.A ENGLISH

PROGRAMME OUTCOMES

- **Objectives**
 - Educate students in both the artistry and utility of the English language through the study of literature and other contemporary forms of culture.
 - Provide students with the critical faculties necessary in an academic environment, on the job, and in an increasingly complex, interdependent world.
 - Graduate students who are capable of performing research, analysis, and criticism of literary and cultural texts from different historical periods and genres.
 - Assist students in the development of intellectual flexibility, creativity, and cultural literacy so that they may engage in life-long learning.
- **Outcomes**
 - Students should be familiar with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.
 - Students should be able to apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres.
 - Students should be able to identify, analyze, interpret and describe the critical ideas, values, and themes that appear in literary and cultural texts and understand the way these ideas, values, and themes inform and impact culture and society, both now and in the past.
 - Students should be able to write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources.
 - Students should be able to ethically gather, understand, evaluate and synthesize information from a variety of written and electronic sources.
 - Students should be able to understand the process of communicating and interpreting human experiences through literary representation using historical contexts and disciplinary methodologies.
- **B. A. English**
 - **Course Outcome**
Semester I
- ENCR1- Methodology of Humanities and Literature
 - To know and appreciate the location of literature within humanities
 - To establish connections across frontiers of disciplines

- To critically engage with culture, gender and marginality
- To become acquainted with narration and representation.

Semester II

- ENCR2- Introduction to Language and Literature
 - Appreciate, interpret and critically evaluate literature.
 - Form an idea about the various stages in the development of English language.
 - Distinguish between the different varieties of English used all over the world.

Semester III

- ENCR3- Literature and Informatics
 - The students should have a thorough general awareness of computer hardware and software and have good practical skill in performing common basic tasks with the computers.
 - The students are expected to create PowerPoint presentations on any topic in literature incorporating extensively researched web sources.

Semester IV

- ENCR4- Reading Prose
 - To develop critical thinking in students
 - To enable them to write and appreciate different types of prose

Semester V

- ENCR5- Reading Poetry
 - To introduce the students to the basic elements of poetry- to enrich the students through various perspectives readings in poetry
- ENCR6- Reading Fiction
 - To develop critical thinking and imagination through long and short fiction and to familiarize students with cultural diversity through different representative samples of fiction.
- ENCR7- Reading Drama
 - On completion of the course, the students should be familiar with the plays of master- dramatists and will have developed the ability to appreciate and evaluate various types of plays.
- ENCR8- Language and Linguistics
 - To lead to a greater understanding of the human communicative action through an objective study of language.
 - To familiarize students with the key concepts of linguistics and develop awareness of the latest trends in language study.

- To help students move towards better and intelligible pronunciation and to improve the general standard of pronunciation in everyday conversation.

- **ENCR 9-Literary Criticism: Theory and Practice**

- Become able to differentiate between judgment and appreciation.
- To get in touch with various movements and schools of thought
- To equip them to attempt practical criticism of plays, passages and poems

Semester VI

- **ENCR 10- Post Colonial Literatures**

- The students will be familiar with literary productions that address issues related to cultural identity in colonized societies, the development of a national identity after colonial domination, and the ways in which writers articulate and celebrate such identity.
- The students will have been acquainted with the resistance of the colonized against the colonizer through literature that articulates it.

- **ENCR11- Women's Literature**

- The students will have an awareness of class, race and gender as social constructs and about how they influence women's lives.
- The students will have acquired the skill to understand feminism as a social movement and a critical tool.
- They will be able to explore the plurality of female experiences.
- They will be equipped with analytical, critical and creative skills to interrogate the biases in the construction of gender and patriarchal norms

- **ENCR12- Indian Writing in English**

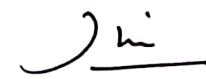
- To provide an overview of the various phases of the evolution of Indian writing in English.
- To introduce students to the thematic concerns, genres and trends of Indian writing in English.

- **ENCR13- Comparative Literature**

- To inculcate in the pupil a feel of various methods employed to identify shared features of various literatures and to equip him/her to make comparative and contrastive analysis of literary texts.

- **ENCR14- American Literature**

- To acquire knowledge about American literature, its cultural themes, literary periods and key artistic features.
- To understand the various aspects of American society through a critical examination of the literary texts representing different periods and cultures.


Dr. Shiny; N. Swinley

Programme outcomes of physical education

- 1: Through the application of basic science information that is applicable to education and sports sciences, physical education will assist students in finding solutions to complicated sports-related concerns and problems.
- 2: The curriculum gives students the skills to recognize, categorize, construct, and analyse intricate issues in physical education and sports sciences in order to come to accurate judgments.
- 3: Gain knowledge of how to create, carry out, and assess processes or programs in the area of physical education and sport sciences to suit desired needs.
4. Ability to enable cooperative or coordinated effort on the part of a group or a team in the interests of a common objective and operate skilfully as a player

5. Understanding of obligations in teaching, learning, and evaluation with regard to professional, ethical, legal, and societal issues. preventing unethical conduct and encouraging fair play. Urging against the use of medications to improve performance. encouraging participation in sports to help people develop their personalities overall.

6. Equip the students with the ability to communicate effectively among a range of stakeholders.
7. Prepare the students to analyse the local and global impact of physical activities and sports and games on individuals, organizations and society.
8. Acknowledgement of the need for and an ability to engage in ongoing professional development.
9. Ability to identify and analyse user needs and take them into account in the selection, creation, evaluation, and administration of physical education and sport sciences programs.
10. The physical and sports activities will develop a sense of discipline in the students.
11. Capability of asking relevant or appropriate questions relating to the issues and problems in the field of physical education.


H.O.D

Dept of phy. Edu

N.S.S.R.S
Mrs. K.S.K Collage Beed
Course Outcomes
Department of Economics
(BA I,II, III)

Sr. No	Semister	Name of the paper	Out comes
1	I	Micro Economics	Developing Social Consciousness
2	I	Macro Economics	Economics makes us able to perform economical transaction accurately
3	I	public finance	Knowledge about expenditure and income
4	I	Financial Institut and Market	Get the Knowledge to invest Money in various fields
5	I	International Economics	We gain the Knowledge of various Market
6	I	Agriculture Economic's	Gain the Knowledge of Selling goods
7	I	Thoughts of Economic History	Give Us Economic Knowledge
8	I	Labour Economic's	Various opportunities of employment
9	II	Micro Economics	Economics transaction accurately
10	I	Macro Economics	Economics discusses the Economic problems
11	II	Indian Economic's	Imparting Value framework that is global yet national
12	II	Data collection and Analysis	Get the knowledge to invest money in various fields
13	II	Research method Economics	For NET/SET/UPSC/MPSC examination economics is useful
14	II	Regional Economic's	Opportunities in departments like planning
15	II	Industrial Economic's	Opportunities in import and export department
16	II	Indian Economic's Thought	Give Various knowledge
17	II	Economy of Maharashtra	Various opportunities of Employment
18	II	Project Work	Study about general Economics



Dr. Chaudhari V.M

HOD Department of Economic's
Sow K.S.K Collage Beed

Mrs.K.S.K.Alias Kaku Arts,Science & Commerce

College,Beed

Music Department

B.A. (ARTS)
HINDUSTANI MUSIC

Programme Specific Outcomes

- ☑ These courses will definitely be beneficial to those students who want to pursue Music as a profession.
- ☑ These courses will enhance the capabilities of students in other fields too, with aptitude and interest in music.
- ☑ With this course students will be able to achieve their graduation degrees besides improving their skills in Music.
- ☑ They can go for higher studies in performing arts.
- ☑ They can become Music Teachers, Instructors.
- ☑ Students can also become professionals and pursue their careers as professional artists.
- ☑ Students will be in a position to appreciate the rich Indian Culture and performing arts.
- ☑ This course will also lead to self actualization by the students which will enhance their self-esteem.

They can go for higher studies in performing arts. They can become Music Teachers, Instructors. Students can also become professionals and pursue their careers as professional artists. Students will be in a position to appreciate the rich Indian Culture and performing arts.

Correlate internal hearing with singing and pitch identification.

Identify and perform various rhythmic patterns of increasing complexity.

Sing a piece of music at sight based on the tonal, modal, chromatic, and atonal systems.

Notate a piece of music in different musical styles.

Sanjoshi
music Dept.

300

Program specific outcomes
programs outcomes sociology

1. Articulate a sociological perspective.
2. Apply sociological theories to understand social phenomena.
3. Critically evaluate explanations of human behaviour and social phenomena.
4. Apply scientific principles to understand the social world.
5. Evaluate the quality of social scientific methods and data.
6. Rigorously analyse social scientific data.
7. Use sociological knowledge to inform policy debates and promote public understanding.

Our degree programs are designed to produce graduates who can engage the world thoughtfully, critically, and creatively. Our hope is that the coursework we require will not only provide a solid base of anthropological or sociological knowledge and a set of skills to collect and evaluate information, but also that our assignments, readings, and classroom discussions will foster a sense of engagement as citizens committed to making the world more humane and liveable.

More specifically, each of our programs has articulated a set of learning outcomes for students. These outcomes are the basis for our on-going assessment of the effectiveness of our courses and our curricula.

Dept of sociology
Khetri
Asst prof Khetri H.R.

Mrs. K.S.K. College, Beed

COURSE OUTCOMES

DEPARTMENT OF PUBLIC ADMINISTRATION (B.A. I, II, III)

SR.NO.	SEMESTER	NAME OF THE PAPER	OUTCOMES
1	I	Introduction to public administration -I Paper -I	To understand public administration including principles of management and organization.
2	I	Indian Administration -I Paper -II	Explain the development of Indian Administration from ancient to contemporary times.
3	II	Introduction to public administration -I Paper -III	To understand the features and principles of organization
4	II	Indian Administration -I Paper -IV	Understanding the development of Indian Administration from ancient to contemporary times.
5	III	Personnel Administration Paper -V	This course intends to familiarize the students with Bureaucracy, various aspects of personnel Administration such as; Classification of services, Recruitment, Training and promotion , Employer-Employee relationship
6	III	Panchayati Raj and Rural Development Paper -VI	To understand village local government that plays a significant role in the development of village like primary education, health, agricultural development , women and child development and women participation in local government.
7	IV	Financial Administration Paper -VII	1) Demonstrate an understanding of the overall role and importance of the finance function and basic finance management knowledge. 2) This course intends to familiarize the students about financial structure of government, economic policy Monetary policy and fiscal policy etc.
8	IV	Urban local self Government and Urban Development Paper -VIII	1) To understand the functions of water supply, construction and maintenance of road, streets, bridges, subways and other public works, street lighting, drainage and sewerage, garbage collection and disposal. 2) To promote local economic development, social justice, and infrastructure development.
9	V	Human Resource Development paper- IX	1) To understand better Utilization of Human. 2) Prepare employees for future posts. Develop new

			attitudes, skills and knowledge to take on leadership position.
10	V	Educational Administration in India paper - X	1) Educational Administrators are professionals who work with teachers to design an age-appropriate curriculum for students. They focus on implementing new ways to educate students and ensure they apply concepts in real life. 2) They focus on long-range planning to identify the best way to insure excellent performance of students and achieve state and district education goals.
11	V	Administrative thinkers paper- XI	To acquaint the students with the administrative thinkers life and their works specially contributions and thought to public administration
12	V	Project paper - XII	It occur result of your action. It improves your thinking ability; determine scope of your resources.
13	VI	Public Policy and Development paper XIII	The paper attempts to make the students understand the policy formulation, policy implementation and evaluation of public policy along with various issues and challenges related to public policy and development
14	VI	Health Administration in India paper XIV	To develop an understanding about the functioning of health administration along with various health mission and issues and challenges in dealing them.
15	VI	Recent Trends in public Administration and Important Laws Paper -XV	To understand resent trends in public administration i.e. Good governance, E- governance, Disaster management, civil society, public choice approach and the laws
16	VI	Project paper XVI	it occur result of your action. It improves your thinking ability; determine scope of your resources.

J. J. J.
 Dr. Isidore P. B.
 Dept. of Public Administration

N.S.S.R.'s
Mrs. K.S.K. College, Beed
Department of Home Science
Programme Outcomes

After successful completion of three years degree program in B.A. (Home Science)

- 1- Developed problem solving competencies in life skills.
- 2- Understood the role of interdisciplinary sciences in the development of individual, families and communities.
- 3-Enhanced the application of science and technologies in quality of life of individual.
- 4- Acquired professional and entrepreneurial skills for Economic empowerment of self in particular and community in general.
- 5- Trained students in professional skills.
- 6- Developed professional skills in foods and nutrition, textiles Science, housing, product making, communication technologies and human development.
- 7- Adopted and transfer the scientific innovations from lab to the community.
- 8 - Foster social skills and peer interaction enabling them to make all people feel valued and respect their differences by being responsible citizens for creating a socially inclusive society.

N.S.S.R.'s
Mrs. K.S.K. College, Beed
Department of Home Science
Course Outcomes

B.A. I

by completion of these course students will be able to –

- 1) Understand the field of Home Science.
- 2) Create awareness among the students about resources and their management in the family.
- 3) Aware about decision making and to enhance the decision making capability of the women
- 4) Understand the basic concept of Nutrition.
- 5) understand the knowledge of food, food functions and Nutritive value of foods.
- 6) Develop abilities to plan Diets for Various stages.
- 7) Gain Knowledge about food Adulteration
- 8) Develop the Entrepreneurial skills 9) Realize the problems of community and the scientific intervention

B.A. II

By completion of these course students will be able to –

- 1) Understand the role of heredity and environment in development.
- 2) State the role of parent and teacher in child development.
- 3) Understand the problems of child.
- 4) Develop skill based activity.
- 5) Understand the concept of Human Development.
- 6) Know the factors affecting of human Development.
- 7) Enable students to understand effect of finished product and its simultaneous effect on market demands
- 8) Acquire knowledge of various dyes used on textile fibers.
- 9) Impart knowledge of Extension Education

B.A. III

By completion of these course students will be able to –

- 1) Provide knowledge and develop skills regarding fundamentals of art and design, principles and methods of interior decorations.
- 2) Develop skill regarding preparing the Bouquets and Flower Arrangements for decoration and enhance the chances of employment.
- 3) Acquire basic knowledge of principles involved in planning of residential house.
- 4) Learn and apply various methods and techniques of the work simplification.
- 5) Develop employability skills and the 'skill of earning while learning'.
- 6) Train the students from self-employment of view.
- 7) Development abilities to plan diets for various diseases
- 8) Encourage the students for self-employments.
- 9) Aware the work of different agencies in the area of health.

nskhandaat
23.9.23
Prof. Khandaat M.S.
HOD, Dept. of Home Science
Mrs. K. S. K. College, Beed.

Course Outcomes of Urdu

- The students will have conscious, fluid Urdu writing and speaking abilities.

The students will be well-trained in acceptable language use through reading prose and poetry, and they will be able to translate literature from other languages into Urdu.

- The student's ability to pronounce words clearly will improve.
- The student will be well acquainted with the Urdu grammar.
- The student will be able to discuss and critically analyse different aspects of literature.
- The student will be able to differentiate between literary language and ordinary language.
- The student will develop their language skills through the listening and reading of Dastan.
- They'll be aware of the subtleties of speaking and writing.
- The Urdu Drama will be taught to the students.
- Students will put their linguistic abilities to practice in everyday situations.
- To have a fundamental understanding of poetry and aesthetics.
- To contrast the poetics and aesthetics of the East and the West.
- To comprehend the perspectives of many eastern and western thinkers on how aesthetics contribute to the creation of high-quality writing.
- To examine the effects of different literary movements, such as modernism and postmodernism, on Urdu literature and language.



H.O.D

Navgan Shikshan Sanstha Rajur's
Mrs. Kesharbai Sonajirao Kshirsagar College, Beed

DEPARTMENT OF HISTORY
Course Outcomes

B.A. I

By completing these courses students will be able to

1. Students will Understand the History of Marathas and their Culture.
2. Create awareness among the students about Ancient Indian History, socio-culture, eco-politics and religion.
3. It will enhance students' knowledge about various historical sources and types of sources.
4. It will increase students' knowledge regarding various Indian origin religion's roots and their development.
5. It will help students to understand the roots of their socio-culture.
6. through this Knowledge students will get benefits in various Civil Services Examination.

B.A. II

By completion of these courses students will be able to -

1. Students will understand the history of medieval Indian History and cultural transition.
2. Create awareness among the students about Ancient Indian History, socio-culture, eco-politics and religion.
3. The Course will enhance knowledge of museology and Archival sources and techniques.
4. Skill enhancement courses enlighten students in the studies of archaeology, Tourism, and fundamentals of Digital Library as a repository, and also increase research aptitude and data analysis.

B.A. III

By completion of these courses, students will be able to-

1. It will provide knowledge about the development of Indian National Movements,
2. Increase knowledge regarding Women's Struggle in Modern India.
3. Create awareness about various fields of History such as Archaeology, Museology, Tourism etc.
4. It will provide Insite in the field of local history of Marathwada
5. Students will understand nationalist movements in South East Asia.
6. The Course will give space for students to increase their research aptitude.

COS OF BOTANY

- COs 1:-** Student should have the detail knowledge of taxonomy of plant.
- COs 2 :-** Student should know the all wild varieties of plants from nearby forest.
- Cos 3 :-** Student should know the all medicinal plants, their habits & uses
- Cos 4:-** Student should understand the nature & basic concept of cell biology in order to study different plant cell events.
- COs 5 :-** Student should able to analyse the karyotype of different useful plants
- Cos 6:-** Be familiar with the technique of isolation of biofertilizer from wild plants & alage. .
- Cos 7 :-** Students should be perfect in different laboratory techniques like- microscopy, centrifugation, gel electrophoresis chromatography.
- Cos 8 :-** Be familiar with host (plant) pathogen relationship, in order to study the life cycle of various plant diseases.
- COs9 :-** Students should have detail knowledge about genetic material of various bacteria, fungi & mechanism of transfer of DNA. (Pathogenic/desired) & understand the importance of recombinant DNA technology.
- Cos 10 :-** Students should have the techniques of tissue culture -general technique & specific- technique also they should have knowledge of micropropagation technique.
- Cos 11 :-** Student should able to produce the different plant seeds, i.e. seed production & distribution of crops like wheat, jowar, bajra, groundnut, sunflower.
- COs 12:-** Should understand ecosystem of their surrounding concept of biodiversity, biogeography & their conservation.
- COs13:-** Student should understand the nature & basic concept of cell biology in order to study different plant cell events



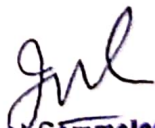
Head
Department of Botany,
M. K. S. K. College Road

DEPARTMENT OF COMMERCE

Programme outcomes:-

The framework also provides a set of broad learning outcomes that summarise the knowledge, understanding, skills, values and attitudes essential for all students to succeed in and beyond their schooling. These broad learning outcomes indicate that students will:

- Understand, develop and communicate ideas and information
- Access, analyse, evaluate and use information from a variety of sources
- Work collaboratively with others to achieve individual and collective goals
- Possess the knowledge and skills necessary to maintain a safe and healthy lifestyle
- Understand and appreciate the physical, biological and technological world and make
- Responsible and informed decisions in relation to their world
- Understand and appreciate social, cultural, geographical and historical contexts, and
- Participate as active and informed citizens
- Express themselves through creative activity and engage with the artistic, cultural and Intellectual work of others
- Understand and apply a variety of analytical and creative techniques to solve problems
- Understand, interpret and apply concepts related to numerical and spatial patterns, Structures and relationships
- Be productive, creative and confident in the use of technology and understand the impact
- Of technology on society
- Understand the work environment and be equipped with the knowledge, understanding and
- Skills to evaluate potential career options and pathways
- Develop a system of personal values based on their understanding of moral, ethical and Spiritual matters.


Dept of Commerce
N. S. Mrs. K. S. K. Allao
Kaku Arts, Sci. & Comm. College Gond

Course Outcomes:-

- Commerce education is business education. Commerce education is that area of education which develops the required knowledge, skills and attitudes for the handling of Trade, Commerce and Industry. The recent commerce graduate can enhance their education and has emerged in the form of Chartered Accountant, Cost and works accountant, Company secretary and Business administrator. Commerce education is a totally different from other disciplines. Hence, it must charter new routes to service the aspirations of the nation.
- To meet the growing needs of the business society, there is greater demand for sound development of commerce education. The relevance of commerce education has become more imperative, this means a marked change in the way commerce and management education is perceived in India. Through teaching, research, and service, the College of Commerce is dedicated to developing tomorrow's leaders, managers, and professionals.
- Commerce provides the knowledge, skills, understanding and values that form the foundation on which young people make sound decisions on consumer, financial, business, legal and employment issues. It develops in students an understanding of commercial and legal processes and competencies for personal financial management. Through the study of Commerce students develop financial literacy which enables them to participate in the financial system in an informed way.
- Central to the course is the development of an understanding of the relationships between consumers, businesses and governments in the overall economy. Through their investigation of these relationships, students develop the capacity to apply problem-solving strategies which incorporate the skills of analysis and evaluation. Students engage in the learning process which promotes critical thinking, reflective learning and the opportunity to participate in the community.
- To function competently in our democratic and pluralistic society, students need to develop the ability to research information, evaluate options, and participate in collaborative decision making within the commercial and legal framework and acquire the necessary skills to become self-directed lifelong learners.
- Commerce provides for a range of learning styles and experiences that suit the interests and needs of all students. It emphasises the potential and use of information and communication technologies. Students gain greater competence in problem-solving and decision-making by evaluating the range of consumer, financial, business, legal and employment strategies. In examining these they also develop attitudes and values that promote ethical behaviour and social responsibility and a commitment to contribute to a more just and equitable society.


Head Dept. of Commerce
S. R. S. Mrs K. S. K. Alias
Kaku Arts. Sci & Comm. College Uda