

ABDUL AHAD AZAD MEMORIAL DEGREE COLLEGE, BEMINA,

CLUSTER UNIVERSITY SRINAGAR

COURSE OUTCOME

FACULTY OF SCIENCE/COMMERCE/ARTS

DEPARTMENT OF PHYSICS

Course Outcome

1st Semester

Course Title: Mechanics and relativity

After successful completion of the course the students are expected to:

- ✓ Understand the concept of coordinate systems and Laws of Motion.
- ✓ Get knowledge about momentum and energy, mass energy relation, special theory of relativity.
- ✓ Will be able to understand the Newton's law of Gravitation, central forces, Oscillations.
- ✓ Understand the elastic behavior of materials, elastic constants, rigidity, etc.

2nd Semester

Course Title: Electricity and Magnetism

After successful completion of the course the students are expected to:

- ✓ Understand the concept of charge, Coloumb's Law, electric current, Gauss's theorem.
- ✓ Explain the magnetic effects of current, certain laws like Biot-Savart's law, Ampere's Circuital law.
- ✓ Understand electric and magnetic dipoles
- ✓ Learn the magnetic behavior of solids.
- ✓ Understand divergence and curl of vectors.
- ✓ Understand concepts like electric and magnetic potentials.

3rd Semester

Course Title: Thermodynamics and Statistical Physics

After successful completion of the course the students are expected to:

- ✓ Understand the meaning of understand the behavior of gases with temperature and how transport phenomenon take place.
- ✓ Will get idea about the concept of entropy, Carnot engine, Laws of thermodynamics, temperature dependent properties of materials.
- ✓ Understand the terms like microstate, macrostate, ensembles.
- ✓ Learn about Boltzmann entropy relation, partition function, Fermi-Dirac and Bose-Einstein statistics.

4th Semester

Course Title: Waves and Optics

After successful completion of the course the student is expected to:

- ✓ Know the concepts of **group velocity and phase velocity**.
- ✓ Get idea about **Huygens principle and Young's double slit experiment**.
- ✓ Understand the concept of polarization of light.
- ✓ Understand the phenomena like Diffraction and Interference.
- ✓ Know about fluids, surface tension and Viscosity.

5th Semester

Course Title: Modern Physics

After successful completion of the course the students are expected to:

- ✓ Get an idea about the loop holes of the classical mechanics
- ✓ Able to explain the meaning of matter waves and uncertainty principle.
- ✓ Get basics about the quantum mechanics and will be able to have knowledge about the wavefunction.
- ✓ Understand the various things like electron spin, quantum numbers, coupling, Zeeman effect etc.
- ✓ Get knowledge about nuclear physics as well as particle physics.

6th Semester

Course Title: Solid State Physics and Devices

After successful completion of the course the student is expected to:

- ✓ Understand the basics of solids like lattice, crystal, crystal systems, etc.
- ✓ Learn about Brillion zones.
- ✓ Understand the basics of semiconductors.
- ✓ Understand the basic electronics.
- ✓ Get idea about diodes, FET, MOSFET, etc.

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Programme: *Environmental Studies* (AECC /Module)

(Ability Enhancement Compulsory Course)

PROGRAMME OUTCOME

On the successful completion of the AECC course, the students are expected:

1. To have a holistic view of environment and its importance for the survival of life.
2. To understand the modern era threats to the species in particular and environment in general.
3. To identify the potential risks of the race for development and identify the scope of sustainable development for the betterment of nature.
4. To developing critical thinking for shaping strategies (scientific, social, economic and legal) for environmental protection and conservation of biodiversity, social equity and sustainable development.
5. To acquire values and attitudes towards understanding complex environmental, socio-economic challenges, etc., and participating actively in solving current environmental problems and preventing the future ones.
6. To understand the need for stringent implementation of laws available, in letter and spirit, for protecting our environment.
7. To have developed an ethical obligation regarding the conservation of mother nature.

COURSE OUTCOME

Semester 1st / 2nd Course title: *Environmental Studies* (AECC)

Course outcome: On the completion of this course the student is expected to:

- 1) Understand the basic structure of ecosystems thriving on this planet.
- 2) Develop an insight regarding the ecosystem services provided by the nature to us free of cost.
- 3) Evaluate the importance of resources available to us.
- 4) Understand the need of conservation of water.
- 5) Develop a temperament for promoting the water conservation strategies like, rainwater harvesting, watershed management, etc.
- 6) Have understood the need of shifting from conventional energy sources to renewable and alternative sources of energy.
- 7) Have understood the importance of biodiversity and the need for conservation of it for the future generations to come as our duty.
- 8) Understand the basic threats to the present biodiversity and the remedial measures of reviving the lost or degraded biodiversity.

- 9) Get acquainted with the modern era environmental challenges like different types of pollution episodes and the possible methods of controlling the same.
- 10) Aware the masses regarding the environmental threats that are going to strike us in near future unless we take proper measures in time to check them.
- 11) Understand the need of incorporating Environmental Studies as an AECC course at under-graduation level.
- 12) Generate the basic understanding of implementation of tougher laws for controlling the degradation of environment at government level.

COURSE OUTCOME

with Environmental Sciences (as core subject) PROGRAMME

OUTCOME

On the successful completion of the B.Sc. degree, the students are expected:

8. To have a holistic view of environment and its importance for the survival of life.
9. To have developed an ethical obligation regarding the conservation of mother nature.
10. To understand the modern era threats to the species in particular and environment in general.
11. To identify the complex processes involved in different biomes/ecosystems.
12. To identify the complex nature of different pollutions occurring in our environment and the aftermath, if not checked early.
13. To identify the potential risks of the race for development.
14. To identify the possibilities of management of degraded ecosystems.
15. To identify the scope of sustainable development for the betterment of nature.
16. To understand the importance of EIA as a tool for attaining the goals of sustainable development.
17. To understand the implementation of laws available, in letter and spirit, for protecting our environment.

COURSE OUTCOME

Semester 1st

Course title: Fundamentals of Environmental Sciences

Course outcome: On the completion of this course the student is expected to:

- 13) Understand the basic frame work and components of our environment.
- 14) Develop an insight regarding moral and ethical approach to environment, environmental issues.
- 15) Develop an understanding of the how life originated and appreciation of its antiquity.
- 16) Human population growth, its features and issues posed to overall environment by the un-bridled human population growth.

Semester 2nd

Course title: Ecosystem Dynamics

Course outcome: On the completion of this course the student is expected to:

- 1) Develop an in-depth understanding regarding the formation, structure and function of different ecosystems.
- 2) Develop knowledge and understanding and be able to distinguish major ecosystems found across our earth.
- 3) Be able to understand the importance of energy resources and distinguish between major energy resources as well as the issues associated therein.
- 4) Understand the importance of natural resources and develop an insight regarding the resources available within our valley and their economic potential.

Semester 3rd

Course title: Environmental Pollution -I

Course outcome: On the completion of this course the student is expected to:

- 1) Understand the basics of global pollution problem especially anthropogenic pollution confronting our environment as a whole.
- 2) Understand the carrying capacity, effect, and modification of environmental components especially air and water due to anthropogenic pollution
- 3) Develop knowledge and understanding regarding the sources, control and mitigation strategies for air pollution.
- 4) Develop knowledge and understanding regarding the sources, control and mitigation strategies for water pollution.

Semester 4th

Course title: Environmental Pollution -II

Course outcome: On the completion of this course the student is expected to:

- 1) Further understand the issues created by anthropogenic pollution especially the types that do not get wide spread coverage like soil, thermal, noise, radiation, on our environment.
- 2) Develop knowledge and understanding regarding the sources, control and mitigation strategies for soil pollution.
- 3) Develop knowledge and understanding regarding the sources, control and mitigation strategies for noise pollution
- 4) Develop knowledge and understanding regarding the sources, control and mitigation strategies for radioactive pollution
- 5) Develop knowledge and understanding regarding the sources, control and mitigation strategies for thermal pollution.
- 6) To understand the movement and modification of pollutants and toxins through food chains and food webs and issues complex created by it.

Semester 5th

Course title: Management of Environment

Course outcome: On the completion of this course the student is expected to:

- 1) To have an understanding of the need for environmental management, resource management and ecosystem restoration,
- 2) Understand the basic principles of environment and ecosystem management.
- 3) To have knowledge regarding the tools of ecosystem restoration.
- 4) To develop practical insight through case studies regarding the management and restoration of different ecosystems like forest, grassland agro-ecosystems.
- 5) To develop practical insight through case studies regarding the management and conservation of major resources like water and soil.
- 6) Learn about management of different wastes and waste to resource approach.

Semester 6th

Course title: Environment Impact Assessment, Environmental Education and Laws

Course outcome: On the completion of this course the student is expected to:

- 1) Become a responsible citizen by understanding their roles in the developmental activities like understanding the importance of EIA and public participation for making the development sustainable.
- 2) develop insights among the students about the indispensable values of studying the Environmental Sciences both by formal and informal ways.
- 3) Realise the values and dimensions of environment and making them the ambassadors of a better Environment to all life forms on earth.
- 4) create awareness among the students regarding what citizen rights and duties are already enshrined in our constitution for safeguarding our environment,
- 5) understand how relevant and effective environmental laws policies are in promoting healthy and equitable development and resource distribution.

DEPARTMENT OF STATISTICS

COURSE OUTCOME

Programme: B.A / B.Sc STATISTICS

Programme Outcome

On the successful completion of the B.A / B.Sc Programme, the students are expected

PO1: to acquire a holistic knowledge and understanding of basic concepts in statistics and its linkages with art, science and technology.

PO2: To enable the students to understand basic concepts and aspects related to research, various techniques to collect the data, analyse the data and interpret the results thereafter.

PO3: to demonstrate the ability to use skills in Statistics and different practicing areas for formulating and tackling Statistics related problems and identifying and applying appropriate principles and methodologies to solve a wide range of problems associated with Statistics.

PO4: To acquire systematic understanding of the academic field of Statistics and its different learning areas and applications.

PO5: To acquire procedural knowledge that creates different types of professionals related to subject area of Statistics, including professionals engaged in government/public service and private sectors;

PO6: to achieve skills in areas related to one's specialization area within the subject area of Statistics and emerging developments in the field of Statistics.

PO7: to Team building and leadership skills, communication, creative and critical thinking skills, and innovative problem solving skills.

PO8: To provide scientific approaches to develop the domain of human knowledge through the use of empirical data expressed in quantitative form.

Semester 1st: Descriptive Statistics

Course Outcome

After completion of this course, the students are expected

CO1: To identify the area of population, the art of collection of data, meaningful segregation, presentation of data and interpretation of collected data so as to deal with data analysis.

CO2: to handle various types of data and their graphical representation. To use the data for further analysis using measures of central tendency.

CO3: to find the summary measures, viz. measure of dispersion, measures of skewness and kurtosis of a univariate data.

CO4: to find the degree of association/correlation between the two concerned variables in case of a bivariate data so as to use in real life problems. Fit linear and non-linear curves for predicting the value of one variable, given the value of another, in case of bivariate data.

Semester 2nd: Probability Theory and Probability Distributions

After completion of this course, the students are expected

CO1: to be able to understand the random experiment, sample space and probability theory, different approaches to the theory of probability, important theorems on probability and their use in solving problems.

CO2: to know the one / two dimensional random variables and their properties in discrete / continuous framework. To know about properties of expectation of random variables and moment generation functions and find out mean and variance using expectation and moment generating methods.

CO3: to recognize various discrete distributions and their properties. To learn how to fit the real-life problems in these distributions.

CO4: to recognize various continuous distributions and their properties like that of normal distribution. To learn how to fit the real-life problems in these distributions.

Semester 3rd: Statistical Methods

After completion of this course, the students are expected

CO1: To understand the concept of statistic, parameter and standard error of sampling distribution, basic concepts of hypothesis testing, including framing of null and alternative hypothesis. Hypothesis testing based on a single sample and two samples and types of errors and level of significance and critical region.

CO2: To study the tests of significance for large samples for testing single mean, single proportion and their difference and using these tests and learn about making hypothesis and hence the decisions about real life research.

CO3: To analyze categorical data by using Chi square techniques.

CO4: To make use of t and F distributions and their applications in real life problems.

SKILL ENHANCEMENT COURSE : 3th SEMESTER (Statistical Methods-I)

After completion of this course, the students are expected

CO1: to transform the raw data into discrete and continuous frequency distribution, represent any real-life data into various form of statistical diagrams. Use any sort of real data for further computational analysis using measures of central tendency.

CO2: To find the relationship between various measures of central tendency with the help of data sets.

CO3: to Use various computational techniques of dispersion. Also analyse how change of origin and scale effect standard deviation.

CO4: to have clear concept of Theory of Attributes and its computational techniques.

Semester 4th : Sampling Theory After completion of this course, the students are expected

CO1: to understand the fundamental concepts of population and sample, need for sampling, the basic concepts of survey, the principles of sample survey and the steps involved in selecting a sample.

CO2: to be able to know the method of selecting sample with the help of Simple Random Sampling Technique and its merits and de-merits.

CO3: to know the method of selecting sample with the help of Stratified Random Sampling Technique, the need for using these techniques and its practical application in life.

CO4: To study Systematic Sampling and compare its efficiency with other type of sampling.

SKILL ENHANCEMENT COURSE: 4th SEMESTER (Statistical Methods-II)

After completion of this course, the students are expected

CO1: to be able to use computational techniques for Skewness based on Quartiles.

CO2: to be able to use computational techniques of central and raw moments using data sets and find skewness and Kurtosis on its basis.

CO3: to be able to use computational techniques of various methods of Correlation and use them in real life problems.

CO4: to have clear concept of regression and use the regression technique in solving the mathematical problems. To use the principles of least squares for fitting of first degree polynomial and parabola is also done by the students.

Semester 5th : Design of Experiments

After completion of this course, the students are expected

CO1: To understand the difference between various statistical tests and one way and two way classification of Analysis of Variance with the help of examples.

CO2: to use skill of using different designs for experiments in real life like CRD and RBD, as it deals with planning, conducting, analyzing, and interpreting controlled tests to evaluate the factors that control the value of a parameter or group of parameters.

CO3: to using designs for experiments in real life like Latin Square Design, advantages and disadvantages. To find the relative efficiency of LSD over CRD and RBD.

CO4: to have the knowledge of Factorial Experiments.

DISCIPLINE SPECIFIC ELECTIVE FOR 5TH SEMESTER (OPERATIONS RESEARCH) DSE-01

Students completing this course will be able to:

CO1: Be familiar with various definitions of OR, its historical perspective, characteristics and different phases of scientific study and understand the need of using OR as a quantitative approach for effective decision making.

CO2: to describe the basic concepts of convex sets and basis. To identify situations where linear programming problem (LPP) can be applied and appreciate the assumptions of linear programming method with a view to interpret the solution.

CO3: to formulate real-world problems as a linear programming model and describe the theoretical workings of the graphical and simplex method, demonstrate the solution process by hand and solver.

CO4: to formulate real-world problems using transportation problems.

SKILL ENHANCEMENT COURSE: 5th SEMESTER (Biostatistics)

After completion of this course, the students are expected

CO1: To be able to compute problems based on single mean and difference of mean using large sample test also apply these to practical problems.

CO2: To be able to compute problems based on large sample test for single proportions using data sets.

CO3: To use the Chi-Square technique for Goodness of fit. Application of this technique to various real life problems.

CO4: to be able to use t-test for single mean, difference of means for practical problems and compute examples for Variance Ratio Test.

Semester 6th: Statistical Inference and Industrial Statistics

After completion of this course, the students are expected

CO1: To understand fully the concept of parameter, parametric space and sampling distribution. To have the concept of statistical inference, its types, and desirable properties of an estimator and how to find a good estimate from a sample data for the practical use.

CO2: To know the usage of various methods of Estimation to the problems.

CO3: To understand the general idea of quality and monitoring of industrial experiments. To understand basic difference between process control and product control

CO4: to be familiar with control chart techniques for attributes like fraction defective, number of defectives chart and acceptance sampling plan. Students will have basic knowledge of computers and its importance in statistics.

DISCIPLINE SPECIFIC ELECTIVE: 6th SEMESTER (Applied Statistics) (DSE-04)

After completion of this course, the students are expected

CO1: To be able to solve examples based on Index number.

CO2: to understand and apply the concept of the analysis of time series data in various contexts (such as actuarial studies, climatology, economics, finance, geography, meteorology, political science, and sociology)

CO3: to fit the trend by Moving Average method. Determination of seasonal indices by various methods of trend.

CO4: to calculate measures of fertility and mortality useful for helping the govt. to make decisions

SKILL ENHANCEMENT COURSE : 6th SEM (Applied Statistics)

After completion of this course, the students are expected

CO1: To be able to solve examples based on one way and two way classification.

CO2: To be able to compute examples based on Completely Randomised Design and apply them in agricultural fields.

CO3: To be able to compute examples based on Randomised Block Design and Latin Square Design and apply them in agricultural fields.

CO4: To formulate the problems regarding Operations Research and solve real life problems using Graphical and Simplex method for Linear Programming Problem.

DEPARTMENT OF CHEMISTRY

Course title: Instrumental methods of Chemical Analysis.

CO1: students will get acquainted with modern methods being used for analysis in chemistry.

CO2: Effective use of such techniques in research programmes if taken later.

Co3: use of these methods in day-to-day life for detecting adulteration of foods, drugs, drinking water etc.

Course title: Polymer Chemistry

After completing the course, students will be able to

CO1: Distinguish between the different types of polymers; encourage use of safer biodegradable ones & restrict or discourage the use of dangerous ones.

CO2: identify the substitutes for the in use polymers with greater degree of risk & danger.

Co3: To get jobs in manufacturing & processing units of polymer industry with background knowledge about processing & moulding, fibres, encapsulation and composite films.

DEPARTMENT OF ZOOLOGY

COURSE OUTCOME

Course Title: ANIMAL DIVERSITY

After the successful completion of this course the students are able to Understand:

- CO1. The general taxonomic rules on animal classification and how organisms are classified and identified.
- CO2. the diversity in non-chordates and their systematic position and also make them aware of the economic importance of some classes.
- CO3. the diversity in chordates and their systematic position and also helps them to understand economic importance of some classes.
- CO4. The differences and similarities in the various aspects of classification.
- CO5. the practical knowledge in identification of animal diversity around them which they can use for sensitizing the common masses and ultimately helps in conservation of animals.

Course Title: COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES

On completion of the course, students are able to understand:

- CO1. the structural comparisons of vertebrate systems in major groups of vertebrates.
- CO2. Ontogenetic and phylogenetic developmental in vertebrates.
- CO3. the terms: Gametogenesis, Fertilization and early development.
- CO4. cleavage and its types based upon egg organization, cell types and cell patterns.
- CO5. about embryonic membranes, placenta types, gene activation, determination, differentiation and cell movement and cell death.

Course Title: ANIMAL PHYSIOLOGY AND BIOCHEMISTRY

On completion of this course, the students able to:

- CO1. Understand the Knowledge of basic principles of Digestion, Excretion, respiration and Circulation.
- CO2: Understand the Knowledge of Physiology of vision, hearing and Molecular and chemical basis of muscle contraction.
- CO3. Understand the Knowledge about various hormones of the body and their function.
- CO4. Understand the Knowledge about metabolism of Carbohydrates, Lipids and Proteins and also about the classification of enzymes and their action.
- CO5. Get practical knowledge of techniques used for estimation of Carbohydrates, RBC & WBC counting, Haemoglobin count and Salivary amylase activity.

Course Title: GENETICS AND EVOLUTIONARY BIOLOGY

On completion of the course, students are able to:

- CO1. Know the concepts of genetic variation through linkage and crossing over, Multiple alleles, Extrachromosomal inheritance and organization of genetic materials in Prokaryotes and eukaryotes.
- CO2. Understand the concept of Mutations, Replication, Transcription and translation, Sex determination and extrachromosomal inheritances.
- CO3. Get the knowledge of basic theories of Evolution, types of fossils, process of fossilization, natural selection.
- CO4. know biological species concept, modes of speciation, extinction and causes of extinctions.
- CO5. Get practical knowledge about Human karyotyping and field knowledge regarding National parks and their importance.

Course Title: APPLIED ZOOLOGY

On successful completion of this course, students are able to:

- CO1. Understand about Host- parasite relationship, life cycles of some important parasites.
- CO2. Gain knowledge about various disease related vectors and their impact on human.
- CO3. Gain Knowledge about insects of Economic importance, Medical Importance, Insect pests and Insect pest management.
- CO4. Understands processes of fisheries, poultry and dairy farming.
- CO5. Get practical training on maintenance of fresh water aquariums and visits animal breeding centres, hatcheries or poultry farm.

Course Title: IMMUNOLOGY

on the completion of this course, the students are expected to:

- CO1. develop knowledge about structures and function of immune cells, immunoglobulins, antigens and their interactions with antibodies.
- CO2. Describe the fundamental concept of Innate and adaptive immunity
- CO3. know about MHC molecules, cytokines, hyper sensitivity reactions and cellular mode of immunity development.
- CO4. Develop the basic concepts of Antigenicity and immunogenicity
- CO5. Describe the molecular structure and function of major histocompatibility complex and the types of hypersensitivity and mechanism of tolerance.

DEPARTMENT OF COMPUTER APPLICATIONS

Course Outcomes

1st Semester

Course Title: Fundamentals of Computers

After successful completion of the course the student is expected to:

- ✓ Understand the basic computer hardware.
- ✓ Know the basic terminology of Computers.
- ✓ Understand the meanings of different input and output devices of the computer.
- ✓ Differentiate the hardware and the software of the computer.
- ✓ Know about the basic Operating System concepts.
- ✓ Know about the channels of the communication and the networks topologies.

2nd Semester

Course Title: C Programming

After successful completion of the course the student is expected to:

- ✓ Understand the meaning of C-Programming and its applications.
- ✓ Explain the structure of the program and various terms like variables, constants, keywords etc.
- ✓ Learn the meaning of operators and expressions.
- ✓ Understand the different types of operators and their use in programs.
- ✓ Describe the control structures and functions in C programming.
- ✓ Understand the arrays and pointers.

3rd Semester

Course Title: Database Systems

After successful completion of the course the student is expected to:

- ✓ Understand the limitations of file management system and the introduction of Database Management System.
- ✓ Know the database architecture.
- ✓ Understand data modeling using relational models and ER diagram.
- ✓ Learn conversion of ER model to Relational model.
- ✓ Describe the database normalization.
- ✓ Implementation of Relational model using SQL.

4th Semester

Course Title: Multimedia and Internet Technologies

After successful completion of the course the student is expected to:

- ✓ Know the basics of Multimedia systems.
- ✓ Know the data digitalization techniques in multimedia.
- ✓ Understand the history of Internet and its evolution.
- ✓ Demonstrate the HTML tags and their use to design various attractive web pages.
- ✓ Design different webpages and make them look attractive.

5th Semester

Course Title: Object oriented programming using C++

After successful completion of the course the student is expected to:

- ✓ Able to explain the meaning of OOP and the difference between OOP and POP.
- ✓ Describe the concept of class and object using programs.
- ✓ Understand the various control structures and functions in C++.
- ✓ Learn the various terminology of Object Oriented Programming like inheritance, polymorphism using C++.

6th Semester

Course Title: VB.NET

After successful completion of the course the student is expected to:

- ✓ Understand the basics of Microsoft VB.NET platform.
- ✓ Learn the basic terminology of .NET technology.
- ✓ Implement control structures and functions in VB.NET.
- ✓ Understand the basics of OOP concepts.
- ✓ Understand the concept of Inheritance, Polymorphism, and other OOP concepts through VB.NET.
- ✓ Implement Data Connectivity in VB.NET

DEPARTMENT OF INFORMATION TECHNOLOGY

Course Outcomes

1st Semester

Course Title :Fundamentals of IT

After successful completion of the course the student is expected to:

- ✓ Understand the meaning of Data and Information in information technology.
- ✓ Differentiate the hardware and the software of the computer.
- ✓ Learn the various Input and Output devices in a computer.
- ✓ Understand the various storage devices.
- ✓ Know about the basic Operating System concepts.
- ✓ Know about the channels of the communication and the networks topologies.

2nd Semester

Course Title: C Programming

After successful completion of the course the student is expected to:

- ✓ Understand the meaning of C-Programming and its applications.
- ✓ Explain the structure of the program and various terms like variables, constants, keywords etc.
- ✓ Learn the meaning of operators and expressions.
- ✓ Understand the different types of operators and their use in programs.
- ✓ Describe the control structures and functions in C programming.
- ✓ Understand the arrays and pointers.

3rd Semester

Course Title: Object oriented Programming through C++

After successful completion of the course the student is expected to:

- ✓ Able to explain the meaning of OOP and the difference between OOP and POP.
- ✓ Describe the concept of class and object using programs.
- ✓ Understand the various control structures and functions in C++.
- ✓ Learn the various terminology of Object Oriented Programming like inheritance, polymorphism using C++.

4th Semester

Course Title: Database Systems

After successful completion of the course the student is expected to:

- ✓ Understand the limitations of file management system and the introduction of Database Management System.
- ✓ Know the database architecture.
- ✓ Understand data modeling using relational models and ER diagram.
- ✓ Learn conversion of ER model to Relational model.
- ✓ Describe the database normalization.
- ✓ Implementation of Relational model using SQL.

5th Semester

Course Title: Java Programming

After successful completion of the course the student is expected to:

- ✓ Able to explain the meaning of OOP and the difference between OOP and POP.
- ✓ Know the fundamentals of Java Virtual Machine (JVM), Java Runtime Environment (JRE), Java Development Kit (JDK)
- ✓ Describe the concept of class and object using programs.
- ✓ Understand the various control structures and functions in C++.
- ✓ Learn the various terminology of Object Oriented Programming like inheritance, polymorphism using C++.

6th Semester

Course Title: Data Communication and Computer Networks

After successful completion of the course the student is expected to:

- ✓ Explain the meaning of data communication and Networking.
- ✓ Explain the various channel of communication.
- ✓ Know about the networking topologies in communication and their use.
- ✓ Identify various networking components.
- ✓ Understand the similarities and difference between TCP/IP model and OSI model.
- ✓ Implement resource sharing using networking.

DEPARTMENT OF BOTANY

Course Outcomes

After completion of the programme, the students

- PO1.** Are equipped with knowledge and understanding of plant biodiversity.
- PO2.** Understand the diversity within various plant groups in terms of structure and utility.
- PO3.** Are well informed about the role of plants as efficient photo-synthesisers and primary producers of the biosphere.
- PO4.** Understand the role of plant species in augmenting the global carbon foot print, thus downgrading the effects of global warming.
- PO5.** Become conscious citizens, thereby having better understanding of environment and its conservation. They remain abreast with environmental ethics and its conservation strategies.
- PO6.** Understand the mechanism of various intracellular reactions involved in the food production, its breakdown into energy; which keeps every individual going in this universe.
- PO7.** Explore the utilization of plant hormones as adjuvant in applied horticulture in terms of fruit ripening.
- PO8.** Develop inquest for research and innovations by exposing them to myriad of bio molecules, genomes and various types of cellular processes.
- PO9.** Can transcend the theoretical knowledge of producing staple crops in field, thus overcoming the socio-economic barriers.
- PO10.** Are acquainted with vast medicinal and aromatic flora of the valley, they may evolve as start-up entrepreneurs by developing their own herbal and medicinal parks and may also settle as setting up of their own perfumeries and cut flower business units.
- PO11.** Are cognizant about the contemporary biotechnological techniques, thus can replicate the knowledge in the form of setting up of testing units and biochemical laboratories.
- PO12.** Are equipped with laboratory skills in the form of practical knowledge, thus tapping this expertise in future research and innovations.
- PO13.** Are familiar with the concept of edible fungi, thus can end up as budding entrepreneurs in the form of owing their Mushroom cultivation units owing to its present lucrative turnover.

Course Outcomes

B.Sc. Part-1, Semester-1

Paper-1: Biodiversity (Microbes, Algae, Fungi, and Archegoniate)

On completion of the course, students are able to:

- CO1.** Know the evolutionary link between various plant groups.
- CO2.** Understand the positive and negative role of microbes, their pivotal role in important processes of fermentation, biological nitrogen fixation and scavenging.
- CO3.** Recognise the role of blue green algae in nitrogen fixation and thereby tapping their potential as bio fertilizers.
- CO4.** Have a deep insight about the role of Algae in the sustenance of the marine life and global carbon and phosphorus cycles.
- CO5.** Understand the role of lichens as pioneers of succession, thereby reclaiming vast barren lands into fertile lush green landscapes.
- CO6.** Acknowledge the role of gymnosperms as a “Green Gold” thus alleviating the economy of the places by furnishing timber, resins, rosins, firewood and chilgoza nuts.

Semester 2nd: Plant Ecology and Taxonomy

On completion of the course, students are able to:

- CO1.** Understand the very basic concept of environment and its sustenance.
- CO2.** Realize the critical role of bio-geochemical cycles in the sentence of life.
- CO3.** Conceptualize the idea of species diversity and work accordingly for its conservation in par with conservation strategies in the form of germplasm conservation, seed banks and protected area networks like “sanctuaries”, “national parks”, “biosphere reserves” and ‘Ramsar sites’
- CO4.** Have a deeper understanding of contemporary issues of “Global warming and Climate change”.
- CO5.** Comprehend the concept of “plant communities”, “plant succession” and “ecological adaptations of plants”.
- CO6.** Are able to learn the basics of plant systematics, the various taxonomic hierarchical categories and ranks; discern the local flora.
- CO7.** Familiarize themselves with the “floristic” and “botanical regions” of India
- CO8.** Make “herbariums”, “monographs” and “taxonomic keys”

Semester-3rd: Plant Embryology and Anatomy

On completion of the course, students are able to:

- CO1.** Grasp the various tissue systems of plants.
- CO2.** Perceive various “meristems”, their role in building the lofty angiosperm and gymnosperm trees.
- CO3.** Have a better comprehension of defence mechanism of plants in the form of spines, prickles, thorns, stinging hairs and the formation of cork.
- CO4.** Distinguish the structure, texture and durability of various forms of woods.
- CO5.** Understand the essentials of pollination, fruit set, seed and fruit dispersal mechanism; the flower as the basic unit of the above phenomena.

Semester-4th: Plant Physiology and Metabolism

On completion of the course, students are able to:

- CO1.** Assimilate the concept of plant physiology, mineral nutrition and transport of nutrients and water in plants.
- CO2.** See the very basic biological reactions which are responsible for the continuity of life viz., carbon dioxide fixation and respiration; role of enzymes as catalysts in driving these reactions.
- CO3.** Understand the chemical nature of “bio molecules”.
- CO4.** Have a clear vision of phenomenon of “photoperiodism” and “vernalization” and their indispensable role in flowering of plants.
- CO5.** Sense the role of plant hormones in normal growth, fruit ripening and stress biology.

Semester-5th: Cell and Molecular Biology

On completion of the course, students are able to:

- CO1.** Have a deep insight regarding the origin of cell, cell types and structural variability among various cell types.
- CO2.** Visualize the importance of cellular organelles in the sustenance of cell, significance of plasma membrane in maintaining the structural integrity of cell and also membrane transport.
- CO3.** Are able to realise the role of cell cycles in facilitating the growth and reproduction.
- CO4.** Understand the vast concept of genomes, their role in heredity and evolution.
- CO5.** To assess the concept of “Operons”.

Semester-6th: Economic Botany and Biotechnology

On completion of the course, students are able to:

- CO1.** Distinguish between grains, legumes and oil seeds; the cropping techniques involved for their better yield. Students can understand the Vavilov's centres of origin of crop plants.
- CO2.** Assimilate the beneficial effects of spices and condiments by way of incorporating them in daily cuisines.
- CO3.** Imbibe the techniques involved in the extraction of edible and aromatic oils.
- CO4.** Utilize the fundamental techniques of Recombinant DNA technology in production of transgenics and bio-molecules.
- CO5.** Follow the principles and basic protocols of plant tissue culture, thus exploiting this technique for mass production of plantlets which after transplantation can be helpful in setting up of nurseries; a start-up entrepreneur.

DEPARTMENT OF ELECTRONICS

COURSE OUTCOME

Programme: B.Sc.

Course Title: Network Analysis and Analog Electronics

After the successful completion of this course the students will be able to understand

CO1: Concept of current and voltage and the various laws governing their distribution in a circuit.

CO2: Formation of various PN devices their characteristics, analysis and applications.

CO3: Need for biasing and stabilization, various biasing circuits, their advantages and disadvantages

CO4: Concept of feedback, its types and application in oscillators and amplifiers.

CO5: Various unipolar devices, their construction, working, equivalent circuits and applications.

Course Title: Linear and Digital Integrated Circuits

After the successful completion of this course the students will be able to understand

CO1: Operational amplifiers, their ideal and practical characteristics. Open and closed loop configuration. Various applications of Op-amp.

CO2: Various number systems and codes used in digital electronics. Truth table of various logic gates.

CO3: Standard representation of logic functions and their minimization techniques.

CO4: Data processing circuits, clock and timer, sequential circuits, shift registers and counters.

CO5: Practical design of various filter circuits and DAC of given specifications.

Course Title: Communication Electronics

After the successful completion of this course the students will be able to understand

CO1: Need for modulation, its types, its generations and demodulation.

CO2: Satellite communication, earth station, uplink and downlink frequencies.

CO3: Need for digital communication, digital modulation techniques and their generations.

CO4: Mobile telephony system, frequency bands used and need for data encryption.

CO5: Practical design of various modulators and demodulators.

Course Title: Microprocessor and Microcontroller

After the successful completion of this course the students will be able to understand

CO1: Various input, output and memory devices of computers, memory organization.

CO2: Main features of 8085 (pin-out diagram, data and address buses, stack memory, program counter).

CO3: Timing and control circuitry, timing diagram of various instructions.

CO4: Main features of 8051, its family, its architecture and addressing modes.

CO5: Embedded systems (architecture, classification, applications).

Course Title: Electronic Instrumentation.

After the successful completion of this course the students will be able to understand

CO1: Various measuring instruments, their accuracy, precision and errors involved in the measurement.

CO2: Various bridge circuits (working principle, analysis and applications).

CO3: Oscilloscope, its construction, working principle and applications.

CO4: Various signal generators and transducers.

CO5: Virtual instrumentation (interfacing techniques, Arduino microcontroller, Lab View).

Course Title: Photonic Devices and Power Electronics.

After the successful completion of this course the students will be able to understand

CO1: Interaction of radiation and matter and LASER activity.

CO2: Various photodetectors, their construction, working and applications.

CO3: Evolution of fiber optic system and elements of optical fiber transmission link.

CO4: Need for semiconductor power devices, their construction, I-V characteristics and application.

CO5: Commutation, its need and its various types.

FACULTY OF COMMERCE

COURSE OUTCOME

Course/learning outcomes

Business Economics

IMCOM 7th semester

1. To develop an understanding of the concepts of scarcity and opportunity cost and the role of marginal analysis to evaluate trade-offs so as to make business decisions.
2. To develop an understanding of how markets work to allocate resources and the optimal individual decision making that underlines the market outcomes.
3. To comprehend as to how price and output is determined under different market structures.
4. To comprehend the impact of monetary and fiscal policies on inflation.
5. To understand the efficacy of the 'principle of marginality' in business decision making.

Principles of Marketing

IMCOM 5th semester

1. To develop an understanding of how marketers work to create value for customers and capture value in return.
2. To have an understanding of how marketplace addresses wants and needs by creating opportunities for the exchange of products, services, experiences and ideas.
3. To develop an understanding of different marketing concepts in practice.
4. To develop an understanding of the role of marketing in building and managing customer relationships.

Management Principles and Applications

IMCOM 3rd semester

1. To develop an understanding of the roles, skills and functions of management.
2. To develop an understanding of how human resources of an organisation are effectively managed.
3. To develop an understanding of strategic planning in business.

4. To understand the importance of different management concepts like Management by Objectives (MBO) and Management by Exception (MBE) in contemporary business world.

Programme title: IG Commerce Sem:8th

Course title: ORGANIZATION CHANGE & DEVELOPMENT

Course learning outcomes:

The primary objectives of this course are to:

- (1) provide the students with an opportunity to become familiar with the basic theories of “change management,”
- (2) develop an awareness and fundamental knowledge of the need for change, why organizations change or fail to change, and how to plan for, manage and measure change,
- (3) develop an awareness of the leadership issues and role of the leader in organizational change, and
- (4) help further develop and expand their critical thinking and analytical skills.

Some specific course objectives, include:

1. Developing a basic understanding and appreciation for the issues and conditions creating the need for change in modern organizations.
2. Exploring some of the ethical issues associated with change and organizational development.
3. Developing an understanding of the strategic role of change in the organization and the impact of change (or failure to change) on organizational performance.
4. Developing a basic understanding and fundamental knowledge of the models and theories of change management and OD.
5. Developing a basic understanding of how organizations behave and react to change, why change efforts can fail, overcoming organizational resistance, and making change possible.

Title of the course: Principles of marketing Semester: B.Com 5th semester

Co1. The objective of this course is to provide basic knowledge of concepts, principles, tools and techniques of marketing

Co2. To know how to identify, understand and satisfy the needs of customers and markets.

Co3. To analyse companies and competitors and to introduce marketing strategy to increase awareness of the strategic and tactical decisions behind today's top performing brands.

Title of the course: Corporate Accounting Semester: B. Com 4th semester

COURSE OBJECTIVES:

CO1. The students will be able to know the basic knowledge of corporate Accounting.

CO2. The students will be able to understand the process for Issue and forfeiture of shares and issue and redemption of Preference shares and debentures in India.

CO3. The students will be able to Construct the financial statements of company within the frame work of Ind AS as per companies Act 2013

CO4. The students will be able to Prepare of cash flow statement as per Indian Accounting Standards.

CO5. The students will be able to Calibrate the procedure involved in Amalgamation of companies and internal reconstruction.

CO6. The students will be able to prepare Accounts of Holding companies and Banking companies.

Title of the course: Business Ethics: Semester: IMCOM 8th semester

COURSE OBJECTIVES:

Co1. To understand the business ethics and to provide best practices of business ethics.

Co2. To understand various principles of Business Ethics.

Co3. To understand ethics in human resources and job of whistle blowers in companies.

Co4. To identify ethical issues in marketing and Advertising.

CO5. To highlight the aspects of consumer protection.

Title of the course: Entrepreneurship Semester: IMCOM 4th semester

Course objectives

CO1. To orient the learner towards entrepreneurship as a career option and creative thinking and behaviour.

Co2. To understand various dimensions of entrepreneurship.

CO3. To understand the significance of writing a business plan and the preparation of project report and its appraisal by various financial/non-financial institutions.

CO4. To orient learners about basic start-up problems.

Title of the course: Marketing Management Semester: M. Com 3rd semester

Course Objectives:

Co1. The objective of this course is to provide basic knowledge of concepts, principles, tools and techniques of marketing

Co2. To know how to identify, understand and satisfy the needs of customers and markets.

Co3. To analyse companies and competitors and to introduce marketing strategy to increase awareness of the strategic and tactical decisions behind today's top performing brands.

Co4. To comprehend products, pricing, promotional and distribution decisions taken in marketing.

Course Title: INCOME TAX LAW & PRACTICE After completion of this course, the student will be able

CO1: To get acquainted with the rules related to direct taxation.

CO2: To comprehend the concept of residential status and understand the scope of total income for an assessee with different kinds of residential status.

CO3: To compute income under various heads namely income from salaries, house property, business/ profession, capital gains and income from other sources.

CO4: To compute the tax liability of an individual and file income tax returns.

CO5: To recognize potential opportunities for tax savings and tax planning.

CO6: To convert intricate and professional tax terminology into simpler ones.

BUSINESS LAW

After completion of this course, the student will be able to

CO1: Get acquainted with the basic concepts and laws of business.

CO2: Identify the fundamental legal principles behind contractual agreements

CO3: Get acquainted with the remedies available for breach of contract.

CO4: Be familiarized with the provisions of the Sale of Goods Act, 1930.

CO5: Classify various negotiable instruments and reasons for their dishonour.

CO6: Recognize legal issues when making business decisions

Course Title: Company law: After completion of this course, the student is expected:

C01: To impart basic knowledge of the provisions of companies Act 2013

C02: To have an understanding of different forms of business organizations and privileges of company form of organization over other forms

C03: To understand the reasons for the creation of NCLT and NCLAT.

C04: To learn about the documents needed for the incorporation of the company and raising of capital by companies in compliance with SEBI guidelines.

C05: to understand about the director's appointment, legal position and their powers, meeting of shareholders and board of directors.

C06: to learn about the winding up of the company.

Course Title: Auditing : After completion of this course, the student is expected:

C01: To get the knowledge of auditing principles, procedures, and techniques in accordance with current legal requirements and professional standards.

C02: To know about the auditor, their types, qualifications, disqualifications and appointment.

C03: to understand different types of audit, business organizations can go for.

C04: To learn about the audit of special concerns and institutions like banking companies, insurance companies and educational institutions.

Course Title: ORGANIZATIONAL BEHAVIOUR

After completion of this course, the student is expected

CO1: Develop a Clear understanding, knowledge and skills in the field of organizational behaviour.

CO2: Understand how application of OB frameworks, tools, and concepts can enhance individual, group, and organizational effectiveness.

CO3: Reflect own beliefs, assumptions and behaviours with respect to how individuals, groups and organizations act in order to expand approaches and increase own organizational effectiveness.

CO4: Deepen the knowledge of organizational behaviour from an individual, group, and organizational perspective; and

CO5: To encourage students to reflect on and apply this knowledge in ways that will enhance their abilities as a manager.

Course Title: RESEARCH METHODOLOGY

After completion of this course, the student is expected

CO1: To provide students with the tools and skills necessary to solve business problems by applying the basics of research and statistics.

CO2: To understand how to obtain a reliable forecast of statistical variables of interest.

CO3: To learn an applied scientific method, which can be used for improving decision making skills.

CO4: To understand how to present and describe information and understand the concept of process improvement.

CO5: To understand how a conclusion can be drawn from a sample of small size taken from a large population.

Course Title

3. HUMAN RESOURCE MANAGEMENT

Course Outcome

After completion of this course, the student is expected

CO1: To familiarize with the conceptual & theoretical constructs of the various dimensions of HRM.

CO2: To be equipped with the requisite skills & tools to undertake HR & its allied functions.

CO3: To develop a holistic HR perspective to achieve organizational goals.

CO4: Discuss how to strategically plan for the human resources needed to meet organizational goals and objectives.

CO5: To evaluate the impact of HR activities on the organizations' overall performance.

CO6: Define the process of job analysis and discuss its importance as a foundation for human resource management practices.

Course Title

4. FINANCIAL MANAGEMENT

Course Outcome

After completion of this course, the student is expected

CO1: To comprehend about the corporate financial goals and how the goal of shareowners' wealth maximization is socially compatible.

CO2: To understand the financial tools and techniques used in financial decision making in the 'real world'.

CO3: To know the concepts of working capital and acquaint them with various aspects related to estimation of working capital, financing of working capital and in the management of individual current assets.

CO4: To develop a Clear understanding, knowledge and skills in the field of Security analysis and portfolio management.

CO5: To discuss the basic concepts of financial management, mathematics of finance and to the framework used in the management of working capital.

FACULTY OF ARTS

DEPARTMENT OF SOCIOLOGY

Sociology is a social science which helps to make sense of the way society works. It is the study of social life, social change, and the social causes and consequences of human behaviour. Sociology is the study of how human beings interact with one another, specifically within the context of different social structures, institutions, and frameworks. Sociology seeks to understand all aspects of human social behaviour, including the behaviour of individuals as well as the social dynamics of small groups, large organizations, communities, institutions, and entire societies. Sociologists are typically, motivated both by the desire to better understand the principles of social life and by the conviction that understanding these principles may help in the formulation of enlightened and effective social policy, thereby leading to a better society.

A student of Sociology should be able to develop:

Critical Thinking: The program seeks to develop in students the sociological knowledge and skills that will enable them to think critically and imaginatively about society and social issues.

Sociological understanding: The ability to demonstrate sociological understandings of phenomena, for example, how individual biographies are shaped by social structures, social institutions, cultural practices, and multiple axes of difference and inequality.

Better understanding of Real-life Situation: The ability to apply sociological concepts and theories to the real world and ultimately their everyday lives. **Observation Power:** A sensible observation power is necessary to identify the research problems in field study. So, a perception about human society slowly grows. **Communication and interaction skills:** Students of Sociology must have to work beyond the class room boundary at the time of field study activities. As a result, good communication skill develops while interacting with local people.

Ethical and Social responsibilities: Students have to learn about institutions, folkways, mores, culture, social control, social inequality, population composition, population policy, society and culture of India. All this helps to instil among the students of Sociology a sense of ethical and social responsibility.

Professional and career opportunities: Students will have the opportunity to join professional careers in Sociology and allied fields. Sociology provides an intellectual background for students considering careers in business, social services, public policy, government service, nongovernmental organizations, foundations, or academia. This program lays foundation for further study in Sociology, Social work, Rural Development, Social Welfare and in other allied subjects.

1. DSE 1A: Introduction to sociology: Course Learning Outcome

CO1. The mandate of the course is to introduce the discipline to students from diverse academic and social backgrounds, trainings and capabilities. The course is intended to introduce the students to a sociological way of thinking. They learn how to apply sociological concepts to the everyday life.

CO2 The students are able to demonstrate the ability to apply the theoretical concepts learned to all kinds of societies whether simple or complex. They understand various aspects of society and how these are interlinked with each other. These include understanding the relationship of individuals with groups. By understanding these relationships, the student develops a sense of how closely the lives of individuals are intertwined and impact each other.

CO3 The course also introduces the students to the emergence of Sociology as a systematic and scientific field of study. The emergence of sociology as a science also helps them understand the changing conceptualization of what it means to be scientific. They are also for the first time exposed to the interdisciplinary nature of the social sciences like social anthropology, history and psychology. They learn how these relate to each other while maintain their disciplinary boundaries.

2. DSE 1B: Sociological Thought: Course Learning Outcome

CO1 Understanding the grand foundational themes of sociology.

CO2 Application of theories and concepts from classical sociological theories to develop intellectual openness and curiosity.

CO3 Appreciation of the classical concepts and theories to develop awareness of the limits of current knowledge.

CO4 Synthesize, apply and critique sociological theories.

3. DSE 1C: Indian Society: Structure and change: Course Learning Outcome

Studying the course students will be able to

CO1 Explore the roots of Indian civilization.

CO2 Know economy, polity and society of ancient, medieval and modern India.

CO3 Understand and analyse the key concepts of Hinduism, Jainism, Buddhism, Islam and impact of these religions on society.

CO4 Understand and analyse the areas of interrelations between India and South Asia.

CO5 Demonstrate social, economic, political transformation of Indian society under colonial rule.

CO6 Realize the basic issues of Indian society like unity in diversity, problems of nationalism and principles of Indian Constitution.

CO7 Define globalization and analyse its impact on social, economic, political, cultural spheres.

4. DSE 1D Methodology of Social Research: Course Learning Outcomes

- CO1** Students are introduced to sociological research both from a theoretical and methodological perspective. They understand the importance of research in social science.
- CO2** Students develop the ability to evaluate the methodological validity of the claims made by theory.
- CO3** The course enables students to evaluate a piece of research and move towards designing a simple research project.
- CO4** Identify the difference between quantitative and qualitative methods.
- CO5** Students will learn to identify ethical and practical issues in research. They also engage with the ideals of objectivity and reflexivity.
- CO6** Students learn that research methods are universal and not bound by cultural location.

5. DSE-1A: Primary Social Institutions: Course Learning Outcome:

- CO1** Students are introduced to the basic institutions functional in the society.
- CO2** They learn about the structure and the functions which each institution Performs.
- CO3** The course enables the students to trace out the inter-relation and inter-dependence of the primary institutions.
- CO4** They are also acquainted about the development and changes which the various institutions have undergone over a period of time and the reasons there off.

6. DSE- 1B: Social Movements: Course Learning Outcomes

1. At the end of the course, students should be able to distinguish the central principles of different theoretical perspectives in the sociology of social movements and relate them to specific historical and empirical contexts.
2. Understand the dynamics and motivations of individuals and groups participating

in social movements and identify reasons for success or failure of social movements.

3. Discuss and ask questions about social movement theories and methodologies with insight and precision.

7. DSE-2A: Social Stratification: Course Learning Outcomes:

1. Students will learn about the socio-historical context of stratification theoretical concerns and problems and contemporary issues related to inequalities and its forms.
2. Inculcate in them a truly inter-disciplinary approach in the study of society especially stratification in all its manifestations.
3. Understanding of stratification and theories would sensitize students to its various sociological aspects, providing ample scope for applied learning and application.
4. Examining forms of stratification, understanding the relevance of caste, race and ethnic identities in contemporary world.

8. SEC-01: Techniques of Social Research: Course Learning Outcomes

1. Students are introduced to the concept of conducting research, which is inclusive of formulating research designs, methods and analysis of data. Some knowledge of elementary statistics is also provided to the students to acquaint them with quantification of data.
 2. The thrust of the course is on empirical reasoning, understanding and analysis of social reality, which is integral to the concepts of quantitative research. Students learn to differentiate between qualitative and quantitative aspects of research in terms of collection and subsequent analysis of data.
 3. Through the competing theoretical perspectives and methodologies, students are able to understand that social reality is multi-faceted, heterogeneous and dynamic in nature.
 4. By imparting the knowledge of theory and praxis of research, students are prepared to arrive at a critical understanding of the course. It also equips them with necessary skills for employment in any social research organization.
-
1. Understanding the basic methodological approaches of the thinkers, through some original texts and their role in building sociological knowledge.

09. SEC-04: Sociology of Crime: Course Learning Outcomes:

1. The students shall understand the concept of crime and the different theoretical Perspectives on crime.
2. They shall be able to identify the different types of crimes plaguing the society, and the changing profile of crime in the highly industrialized world.

3. They will also understand the Criminal justice system and correctional measures put in place.

10. SEC-01: Techniques of Demographic Analysis: Course Learning Outcomes

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

1. Demonstrate a knowledge of key concepts in and different approaches to population studies.
2. Recognize the relations between population and social groups and processes by linking population size, composition, and growth with fertility, reproduction, and mortality.
3. Explain the dynamics between population, gender, and migration in terms of the role of institutions, policies and programmes, and social relations and groups.
4. Undertake a sociological analysis of international and national population dynamics and population policies.

11. GE-SOC-01: Sociology: Basic Concepts: Course Learning Outcome

1. The mandate of the course is to introduce the discipline of Sociology to students from diverse academic and social backgrounds, trainings and capabilities. The course is intended to introduce the students to a sociological way of thinking.
2. It familiarizes the students with the history and the fundamental concepts and concerns of the discipline.
3. The students get the knowledge of the basic groups, institution and the basic components of the society.

12. GE-SOC-02: Social Problems in India: Course Learning Outcomes

1. The purpose of the course is to acquaint the students with the major contemporary social problems in India.
2. The students shall be able to develop critical thinking on social problems and find the remedies thereof.
3. The knowledge gained can be used for pursuing social work.

DEPARTMENT OF ENGLISH

Programme: BA/BSc/B.Com/Integrated courses (I & II Semester) General English and Communicative English

Course Outcome:

CO1: Literature whips students with higher thinking skills.

CO2: Reading authentic literature improves vocabulary, reading comprehension, reading ability and language growth.

CO3: Communication and Phonetics advantages students with,

- English Language Proficiency
- Communication Skills
- Personality Development Skills
- Group Discussion and Personal Interview Skills
- International English Language Testing System
- Body Language Skills
- Leadership Skills
- Motivation Skills
- Reading Skills
- Listening Skills
- Speaking skills
- Positive Attitude Skills
- Public Speaking Skills
- Social Communication Skills etc.

Programme: BA/BSc/B.Com/Integrated courses (III & IV Semester) General English and Communicative English

Course Outcome:

O1: Reading authentic literature improves higher thinking skills, vocabulary, reading comprehension, reading ability and language growth.

CO2: Literature also strengthens the brain, increases empathy, prevents cognitive decline, reduces stress etc.

CO3: Writing Skills enable students to acquire knowledge through skill and attitude by learning proficiency in English Communication, writing ability, motivational skills, positive attitude skill, brainstorming, looping, story writing, review writing, business correspondence etc.

CO4: Reading skills enables students to acquire reading comprehension, develop Personality Development Skills, Communication Skills, , Group Discussion, Personal Interview Skills, Leadership Skills, Motivation Skills, Reading Skills and Social Communication Skills etc.

Programme: BA/BSc/B.Com/Integrated courses (V & VI Semester)
General English and Communicative English

Course Outcome:

CO1: Literature strengthens the brain, increases empathy, prevents cognitive decline, reduces stress etc.

CO2: Reading authentic literature also improves higher thinking skills, vocabulary, reading comprehension, reading ability and language growth.

CO3: Reading skills enables students to acquire reading comprehension, develop Personality Development Skills, Communication Skills, Group Discussion, Personal Interview Skills, Leadership Skills, Motivation Skills, Reading Skills and Social Communication Skills etc.

CO4: Writing Skills enable students to acquire knowledge through skill and attitude by learning proficiency in English Communication, writing ability, motivational skills, positive attitude skill, brainstorming, looping, story writing, review writing, business correspondence etc.

CO5: Communicative English also students to develop professional skills like layout, planning and structure a letter, planning presentation, resume writing, CV writing etc.

Programme: BG. (Skill Enhancement Course)

Semester: 3rd & 4th.

Course Title: Technical Writing I & II.

Aim and Objectives:

1. It introduces the learner to the technicalities of writing skills.
2. The course focus is on the explicit teaching/learning of grammatical rules besides enabling students apply aspects of grammar in actual and relevant of communicative contexts like report and letter writing.
3. It facilitates learner's understanding of the functional value of grammar in real –life communicative situations.
4. The course aims to teach aspects, purpose, skills accessed, do's & do not's of topics like group discussions, presentations, conversations, considering the need of the present time for job placement which can be achieved if the students are able to meet the market need.
5. Awareness about the minutes of meeting, memos and advertisement.

DEPARTMENT OF POLITICAL SCIENCE

Programme and Course Outcome of Political Science

Programme: BA with Political Science

Programme Outcomes: Students are expected:

- PO1: To develop critical thinking regarding political structures and processing.
- PO2: To learn the techniques and methods for improving political condition of human civilization.
- PO3: To develop research attitude for knowledge-building in political studies.
- PO4: To work for improvisation of democracy as a means to live in political community.
- PO5: To strive for universal justice addressing the basic issues of concerning humanity.

BA-1st Semester

Total Courses: 01

Course Title: Introduction to Political Science

Course Outcome: Students are expected:

- CO1: To understand the basic nature of politics and political practices.
- CO2: To acknowledge the significance of liberty, equality, rights and justice in society..
- CO3: To evaluate the exercise of 'power' in reference to legitimacy, authority and rights of people in a given political setup.
- CO4: To evaluate state system and models of government for acknowledging democracy as the core value of human civilization.

BA-2nd Semester

Total Courses: 01

Course Title: Indian Government and Politics

Course Outcome: Students are expected:

- CO1: To evaluate and understand the nature of Indian polity.
- CO2: To evaluate political institutions and their functions in India.
- CO3: To realize the power of citizens in India in context of constitutional rights.
- CO4: To evaluate the legislative, executive and judicial processing in India.
- CO5: To examine the law-making process in context of democratic setup of India.

BA-3rd Semester

Total Courses: 02

01. Course Title: Comparative Government and Politics

Course Outcome: Students are expected:

- CO1: To understand diversity of politics across the globe.
- CO2: To examine the varying political structures on comparative basis.
- CO3: To evaluate the influences of local cultures as well as modernity on polity.
- CO4: To understand various trends of procedural democracy.

02. Course Title: Legislative Support

Course Outcome: Students are expected:

CO1: To understand the law-making process in India.

CO2: To understand the power of people in India while evaluating the functions of their representatives in parliament.

CO3: To evaluate the role of parliamentary committees in framing laws.

CO4: To examine the budgetary mechanism and processing in India.

BA-4th Semester

Total Courses: 02

01. Course Title: Introduction to International Relations

Course Outcome: Students are expected:

CO1: To acquire grounding in the academic debates and research in the field of International Relations.

CO2: To understand the application of theories and concepts of International Relations to global and regional issues.

CO3: To evaluate and analyze the historical discourse of power politics throughout the world.

CO4: To understand and evaluate resource politics in world affairs.

02. Course Title: Public Opinion and Survey Research

Course Outcome: Students are expected:

CO1: To evaluate the power of public opinion besides understanding its nature and significance.

CO2: To understand the links between public opinion and democracy.

CO3: To examine various research tools and methods of data collection, data analysis and data processing for research.

CO4: To develop research skills in the field of political studies.

BA-5th Semester

Total Courses: 04

01. Course Title: Western Thought: Thinkers and Themes

Course Outcome: Students are expected:

CO1: To examine the developments in political thought while focusing the western traditions of theorizing political studies.

CO2: To understand the context of western political thinkers for critically understanding and deliberating over political structures and processes of their times.

CO3: To understand the core political values of liberty and power, equality and justice, rights and obligation, and so on.

CO4: To develop the ability of interpretations for the sake of knowledge building and expansion while considering the western techniques of political thinking.

02. Course Title: Indian Thought: Thinkers and Themes

Course Outcome: Students are expected:

CO1: To understand the context of Indian political thinking from ancient to contemporary times.

CO2: To acknowledge the richness in debate and discussion about political values in Indian context.

CO3: To examine the role and impact of Indian political thinking on imperialist designs and exploitative tendencies of social structures in India.

CO4: To learn the method of synthesis of political values and local structures of society.

03. Course Title: Indian Political System

Course Outcome: Students are expected:

CO1: To understand the political structures and processes of independent India.

CO2: To understand the changing societal context and its bearing on legal system of India.

CO3: To examine the impact of constitutional machinery on injustice and inequality that was prevalent in India before and during the British era.

CO4: To evaluate the impact of diversity of India on its polity.

04. Course Title: Democratic Awareness with Legal Literacy

Course Outcome: Students are expected:

CO1: To understand democracy as procedural and substantive phenomenon.

CO2: To build democratic spirit for the betterment of all.

CO3: To understand the problems of vulnerable sections in India and acknowledge the constitutional mechanism for improving their condition.

CO4: To know the mechanism for effective implementation of laws meant for the protection of citizens of India.

BA-6th Semester

Total Courses: 04

01. Course Title: Administration and Public Policy: Concepts and Theories

Course Outcome: Students are expected:

CO1: To understand management aspects of political community.

CO2: To develop vision regarding law execution and administrative science.

CO3: To evaluate the process of governance in general.

CO4: To examine administrative patterns of public organizations;

02. Course Title: Understanding Globalization

Course Outcome: Students are expected:

CO1: To develop vision regarding global understanding and politics.

CO2: To explore global issues concerning the human security and survival.

CO3: To evaluate patterns and aspects of globalization.

CO4: To examine the role of global institutions and organizations.

03. Course Title: Human Rights, Gender and Environment

Course Outcome: Students are expected:

CO1: To develop understanding and vision regarding human rights.

CO2: To evaluate gender issue as a global phenomenon.

CO3: To examine development patterns throughout the globe and its bearings on environment.

04. Course Title: Peace and Conflict Studies

Course Outcome: Students are expected:

CO1: To acknowledge the significance peace.

CO2: To examine the imprints of conflict situation on human civilization.

CO3: To understand the patterns of peace structured via legal systems.

CO4: To evaluate the technicalities designing structures of peace.

DEPARTMENT OF ECONOMICS

Email: beminaeconomics2021@gmail.com

Program Outcome

- ✓ PO1: Understand basic concepts in economics and apply economic principles in real world situations
- ✓ PO2: Foster the economic way of thinking.
- ✓ PO3: Ability to apply knowledge of economics with powerful mathematical and statistical tools
- ✓ PO4: Ability to perform as a successful economic analyst for industry, trade and commerce, banking and non-banking financial institutions
- ✓ PO5: Acquiring knowledge, competency and confidence to take up career in Indian Economic Service

Course Outcomes

Course01- Principles of Micro Economic I {Core}

After the completion of Course, the student will be able to attain the following: -

CO1: It gives the foundation for economic analysis and problem solving.

CO2: To introduce the student to the basic micro economic concepts like demand, supply, production, cost and revenue and the theories explaining their determination.

CO3: Able to analyse consumer behaviour and consumer decisions.

Course 02- Principles of Micro Economic II {Core}

After the completion of Course, the student will be able to attain the following: -

CO1: Understand market and factor pricing patterns

CO2: Helps to understand the behavioural pattern of consumers in various market situations

CO3: Enable the students to use economic tools and principles in the analysis of economic policies

CO4: Provide an understanding of micro economic concepts and how to use that concept to solve specific questions

Course 03: Principles of Macro Economic I {Core}

After the completion of Course, the student will be able to attain the following: -

CO1: Provides the thorough understanding of emergence of macroeconomics

CO2: Provides a thorough understanding of economic issues and how treat them in macro perspectives

CO3: Thorough understanding of national income accounting

CO4: Helps to understand and compare a closed economy and open economy adjustment mechanism

Course 04: Principles of Macro Economic II {Core}

After the completion of Course, the student will be able to attain the following: -

CO1: Provide a theoretical understanding of aggregate economy

CO2: Compare and contrast classical and Keynesian approaches

CO3: To know about the various factors contributing to inflationary and deflationary pressures

CO4: Helps to understand the role of monetary and fiscal policies to address economic issues

CO5: Understanding of balance of payment and exchange rate mechanism

Course 05- Economic Development and Policy in India-I {DSC}

After the completion of Course, the student will be able to attain the following: -

CO1: A thorough understanding on Indian Economic System.

CO2: To understand and examine the major trends in aggregate economic indicators

CO3: A thorough understanding of Population, Poverty, Employment and economic development in Post-Independence era

CO4: Throws light on magnitude of poverty and inequality and aware the students about the need for social concern

Course06: Public Economics {DSC}

After the completion of Course, the student will be able to attain the following: -

CO1: The Course aims to introduce students to the main theoretical and empirical concepts in public economics

CO2: Equip students with a thorough analytical grasp of implications of government intervention for allocation, distribution and stabilization, and familiarize students with the main issues in government revenues and expenditure.

Course 07- Economic Development and Policy in India-I {DSC}

After the completion of Course, the student will be able to attain the following: -

CO1: Understand the sector specific trends in key indicators and their implication in the post-independence era.

CO2: Know about the policy issues relating to economy of India.

CO3: To know about the structural adjustment programme and the transformation of the Indian economy

CO4: To know about the sectoral contributions to the growth of the Indian economy

Course 08- Money and Banking {DSC}

After the completion of Course, the student will be able to attain the following: -

CO1: understand basic concepts about financial institutions and markets.

CO2: Know the changing role of financial sector of the economy

CO3: Understand the role of financial institutions and markets in the modern economies.

CO4: To know about the developmental and stabilising services of financial products

Course 09- Environmental Economics {DSC}

After the completion of Course, the student will be able to attain the following: -

CO1: Achieve a mission of sustainable society.

CO2: How to protect the environment while promoting development

CO3: Acquire the skills of solving environmental problems.

CO4: Provide an understanding of renewable and non-renewable resources

CO5: An understanding of civil, political, economic and social rights

Course 10: General Economics {Generic Elective}

After the completion n of Course, the student will be able to attain the following: -

CO1: Students will be able to understand economic vocabulary, methodologies, tools and analysis procedures

CO2: Foster the knowledge of economics

CO3: Provide an understanding of subject matter

Course 11: Growth and Development {Generic Elective}

After the completion n of Course, the student will be able to attain the following: -

CO1: This course introduces students to the basics of development economics

CO2: Understanding the compositional aspects of growth and development

CO3: In depth discussions of the concepts of development, growth, poverty, Employments and inequality

Course 12: Statistical Tools for Data Analysis {Skill}

CO1: To familiarize the students with statistical tools and techniques.

CO2: To acquaint students with data and data collection techniques.

CO3: To enable them to apply these tools in economics

Course 13 - Mathematical Economics {Skill}

After the completion of Course, the student will be able to attain the following: -

CO1: Getting awareness on the increased use of mathematical methods in Economics.

CO2: Enable to solve optimisation problems of goal equilibrium of a household, business firm or policy makers.

CO3: Enables to analyse a static equilibrium in which the economic unit or system is modelled as stationary.

CO4: Apply mathematical tools and methods for understanding the theory of Economics and develop the capability of applying the same in solving problems in

Economics

Course14: Entrepreneurship for Self-Employment in J & K

After the completion of Course, the student will be able to attain the following: -

CO1: Students are exposed to macroeconomic overview of J & K Economy

CO2: Introduces various employment generation schemes and avenues available in J & K Economy.

CO3: Thorough and Practical guide for self-employment and Entrepreneurship in J & K Economy.

DEPARTMENT OF ARABIC

Course Outcomes

Arabic Literature (Core/DSC/DSE)

At the successful completion of this course the student is expected

1. To have developed all the four language skills in a practical and applied manner
2. To have a good command on the communicative area of the subject and competence to understand the morphological and syntactical structures of the language.
3. To be capable enough to channelize his/her potentialities for the betterment of his/her career and livelihood.
4. To be in a position to work as a language instructor and interpreter at the public and private sphere.

Spoken Arabic (Skill Enhancement Course)

At the successful completion of this course the student is expected;

1. To be an effective communicator and self – reliant about the language. He is also expected to be equipped with the relevant skills of presentation and expression needed in the academic and professional domain.
2. To Explore the available opportunities in the subject especially in the field of translation and interpretation.

MIL and Generic Elective Courses

At the successful completion of these course the student is expected;

1. To Understand the basic Arabic Grammar with considerable knowledge of Arabic vocabulary, Phrases, constructions and expressions regarding various occasions.
2. To read and write the Arabic Text in a clear, meticulous and error- free manner.

DEPARTMENT OF URDU,

- Demonstrate a set of basic skills in literary & linguistic communications & explication of literary practices & process with clarity.
- Demonstrate a coherent & systematic knowledge of the field of Urdu literature & other literature translated into Urdu, showing & understanding of the contemporary world.
- Cultivate ability to look at & evaluate the language of literary texts as field of study & as part of the wider network of the local & global culture by using digital resources
- Display knowledge to cultivate a better understanding of values- both in the use of different language registers & literary forms & genres to arrive at transparent understanding of values of life at all stages
- Recognize employability options in Urdu literature & language studies program as part of skill development & as a carrier avenues open to graduates in today's global world such as professional writing, translation, teaching Urdu at different levels, mass media, journalism, & personality development.

COURSE OUTCOME

CORE PAPER/DSE (Urdu Literature):

- In this paper students will have a comprehensive knowledge regarding different forms of Urdu literature.
- This will give students an understanding of how different forms of writings have evolved over the period of time.
- Learning different form of writing can add to the creativity among students and can form careers in the same.
- Personality development comes as a bonus after understanding abstract ideas that various authors and poets have shared through their works.
- It will also make students have a better command over the language and its technicalities.

Skill Enhancement (Drama/Mass Media/Translations):

- This course allows students to apply their knowledge in base in to practical and make careers out of these.
- This shows how Urdu literature has developed as a contemporary means of communication through newspaper, magazines etc.
- Dramas add a knack to the course which allows creative writing to be turned into enactment.
- Translations have added a new dimension to the language as different works from different authors could be accessed by the people through books, articles, reviews etc.
- Language barrier has become null and void due to translations done in Urdu from different languages. It has broadened the horizon of Comprehensive understanding of ideas and cultures.

Generic courses (Basic Understanding of Urdu literature):

- This gives students background about how Urdu language has evolved and who has contributed to the same.
- To understand how the language is written and spoken in error free manner
- It also gives students an understanding of basic Urdu grammar with considerable vocabulary.
- It interests students to know more about the language after learning about famous authors and poets.

Program Name B.A., BSc. Mathematics

Programme outcomes

- I. Scientific temper will be developed in Students.
- II. Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects.
- III. Students will become employable; they will be eligible for career opportunities in Industry, or will be able to opt for entrepreneurship.
- IV. Students will possess basic subject knowledge required for higher studies, professional and applied.
- V. Students will be aware of and able to develop solution-oriented approach towards various Social and Environmental issues.

Programme specific outcomes

- I. A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology.
- II. A student should get adequate exposure to global and local concerns that explore them many aspects of mathematical sciences.
- III. Student is equipped with mathematical modeling ability, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
- IV. Student should be able to apply their skills and knowledge that is translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.
- V. Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Course outcomes

First Semester

Course: MA-17101: Differential Calculus and Complex Trigonometry

- I. To study functions in detail which is a fundamental structure in all sciences, and to be able to check continuity of a function.
 - II. To apply notion of derivative in mean value theorem and also in higher order derivatives which arise in all applied sciences
 - III. Theoretical concepts are strengthened by solving maximum no. of problems
 - IV. Due to one-to-one interaction with the teacher doubts of the students get cleared if any.
 - V. Students learn how to apply mathematical concepts to practical and real-life problems.
 - VI. Interdisciplinary approach is developed
-

Second Semester

Course: MA-17201: Integration and Differential Equations.

- I. To study the integration in detail which is a fundamental tool for finding the solution of Differential equations
 - II. To learn methods to solve linear differential equation with constant coefficients.
 - III. To learn methods for solving non-homogenous differential equation.
 - IV. Problem solving skills of students are enhanced.
 - V. Theoretical concepts are strengthened by solving maximum no. of problems
 - VI. Due to one to one interaction with the teacher doubts of the students get cleared if any
 - VII. Students learn how to apply mathematical concepts to practical and real-life problems.
 - VIII. Interdisciplinary approach is developed.
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Third Semester

Course: MA-17301 Real Analysis

- I. To learn basic techniques and examples in analysis to be well prepared for courses like Topology, Measure theory and Functional analysis.
 - II. To study various types of sets and relations, and concept of countable and uncountable.
 - III. To study concept of sequence and series and hence find sum of infinite terms with Different methods.
 - IV. To study notion of lub and glb which helps to learn integrations which helps to find area under any functions.
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Fourth Semester

Course: MA-17401 Abstract Algebra

- I. To learn fundamental properties and mathematical tools such as closure, identity, inverse and generators.
 - II. To study algebraic structure 'Groups' in detail which is useful in study of Rings,
 - III. To enhance abstract thinking of students.
 - IV. To learn to compare two different algebraic structures and study transfer of properties in-between these structures through homomorphism and isomorphism
 - V. To study the algebraic structure Ring in detail through various examples.
 - VI. To learn the construction of field of quotients of an integral domain.
 - VII. To study the Rings of polynomials and its factorization over a field.
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Fifth Semester

Course: MA-17501(DSC) Solid Geometry and Advanced Calculus

- I. To learn fundamental properties of Sphere, Cone, Cylinder, Conicoids.
 - II. To study functions of several variables.
 - III. To study the notion of Continuity and Differentiability of multivariate functions.
 - IV. To find extreme values of multivariable functions using derivatives.
 - V. To learn evaluation of double and triple integration and its application to area and volume.
 - VI. To learn evaluation of Beta, Gamma functions and relation between them.
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Sixth Semester

Course: MA-17601 Linear Algebra

- I. To learn how to solve linear equations of two and more than two variables by matrix method
- II. To learn the importance of linear transformation in Physics, Engineering, Social sciences and various branches of Mathematics.
- III. To learn to find Eigen values and Eigen vectors of a matrix which is used in the study of vibrations, chemical reactions and geometry.
- IV. To learn Inner Product spaces and Gram-Schmidt process of orthogonalization.
- V. To get well equipped with Mathematical Modelling abilities.