

Mugberia Gangadhar Mahavidyalaya

Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution

Department of Commerce

Programme outcome, Course outcome and Programme specific outcome

Bachelors in Commerce [B.Com]

Programme Outcome: PO

PO – 1:

After completing three years for Bachelors in Commerce (B.Com) program, students would gain thorough grounding in the fundamentals of Commerce and Finance.

PO – 2:

The outlook of the commerce programme impart various skills like accounting skills, managerial skills, communication skills and overall personality development of the students, also to make the students competent to face the challenges in present competitive market.

PO -3:

To commerce and finance focused curriculum helps the students to develop an entrepreneurship and to give the ideas about the modern business strategies.

Course Outcome: CO

CO -1: Financial Accounting (FA)

FA in course aims to develop conceptual understanding of fundamentals of Financial Accounting system and to impart skills in accounting for various kinds of business transactions.

CO -2: Business Communication

It aims to develop communication skills and overall personality development of the students.

CO -3: Business Economics

The objective of this course is to acquaint the students with the business economic principles as are applicable in business.

CO -4: Principles of Business Management and practice

To know to make planning, decision making, controlling, staffing, organizing etc. to understand new approaches in management.

CO -5: Cost Accounting

To understand knowledge of cost accounting, single output costing, material cost, labour cost and overhead.

CO -6: Banking and Finance

To study the Indian Banking system, Banking regulation act 1949, Commercial Bank, Development Bank and Digital Bank.

CO -7: Management Accounting

The objective of this paper course is to equip the students with the ability to analysis interpret and use accounting information in managerial decision making. The student is expected to have a good working knowledge of the subject. This course provides the students an understanding of the application of accounting techniques for management.

CO -8: Business Regulatory Framework and Corporate Law

The Objective of these two papers is to provide a brief idea about the framework of Indian Business Law and to acquire knowledge and develop understanding of the necessary framework of companies with reference to various provisions or company act-2013

CO -9: Income tax

To give knowledge of direct and indirect tax system in the country.

Programme Specific Outcome: PSO

After completing Bachelor of Commerce (B.Com) course, students are able to:

PSO – 1: To build a strong foundation of knowledge in different areas of Commerce.

PSO – 2: To develop the skill of applying concepts and techniques used in Commerce.

PSO – 3: Students will demonstrate progressive affective domain development of values, the role of accounting in society and business

PSO – 4: Students will learn relevant managerial accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.

PSO – 5: Learners will be able to prove proficiency with the ability to engage in competitive exams like CA, CS, ICWA and other courses.

PSO – 6: Learners will be able to do higher education and advance research in the field of commerce and finance.

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Apart from the **B.Com** course, Mugberia Gangadhar Mahavidyalaya offers two Career Oriented Programmes [COP] to the students of commerce with the help of University Grant Commission [UGC].

- 1. Career Oriented Programme in Income Tax & GST**
- 2. Career Oriented Programme in Business Management**

Career Oriented Programme in Income Tax & GST

Programme outcome, Course outcome and Programme specific outcome

Programme Outcome: PO

PO – 1:

This course provides an introduction and overview of, fundamental concepts of income tax law. Topics include Introduction to Taxation, including income tax, capital gains tax, fringe benefits tax, and goods and services tax [GST]; Jurisdiction to Tax; Assessable Income, including taxation of capital gains and losses; Non-Assessable Income; Deductions; Tax Accounting; Tax Treatment of Tax Entities; Anti-avoidance; and Tax Administration.

Course Outcome: CO

This course is designed to

CO -1:

Provide students with an understanding of the Indian income tax system.

CO -2:

Provide knowledge of fundamental concepts of Indian income tax law.

CO -3:

Enable students to develop experience in identifying tax issues and applying the income tax law to arrive at reasoned solutions to problems.

CO -4:

Provide students with an understanding of the Indian GST system.

Programme Specific Outcome: PSO

PSO – 1:

Learners can also acquire practical skills to work as tax consultant for GST as well as for income tax, audit assistant and other financial supporting services.

PSO – 2:

Students will be able to demonstrate progressive learning of various tax issues and tax forms related to individuals and sole proprietorships.

PSO – 3:

Address tax situations for a variety of taxpayers, such as wage earners, salespersons, owners of small business, professionals, investors, home and rental property owners, farmers, etc

Career Oriented Programme in Business Management

Programme Outcome: PO

PO -1:

This course provides an introduction and overview of how to make planning, decision making, controlling, staffing, organizing etc. to understand new approaches in management.

PO -2:

Objective of this Course is to provide a sound understanding of the basic principles of Business Management and their applications in the business & industry

Course Outcome: CO

CO -1:

Demonstrate a general knowledge framework and understanding of key functions in management as applied in practice;

CO -2:

Obtain through electives in-depth knowledge and understanding in more specific management related areas such as planning, decision making, controlling, staffing, organizing etc.

CO -3:

On successful completion of this course the students acquires the knowledge about the various types of business organizations, office managements and modern trends in management process.

Programme Specific Outcome: PSO

PSO – 1:

Students will able to understand, analyze and apply management concepts for efficient running of the business organization in competitive era.

PSO – 2:

Students will establish themselves as effective professionals by solving real problems through the use of business management knowledge.

COURSE OUTCOME : DEPARTMENT OF GEOGRAPHY

❖ **Course1:Geotectoniocs and Geomorphology**

To have an introductory knowledge about the Earth, its age, processes operating, the various features associated with it and its outcome. The objective is to assist in the knowledge of the Earth as the home of man. This encompasses the basic definition of the subject matter of Geography as a Physical Science. The course also explains the basic of structural geology, both micro- and macro level, how they develop, analysis techniques, interpretation of structures with respect to tectonic processes. It aims at unravelling the deformational history of the rocks.

- **Outcome:** After the completion of the course, the students have a basic knowledge of the subject and a full concept of the Earths variable landforms. They can describe the nature and principles of plate tectonics and related crustal deformation along with the principle methods of isotopic geochronology.

❖ **Course 2: Human Geography**

To encompass the Human elements in the study of Geography. It includes the study of society, settlement and its role in man's life. It studies the various aspects of social geography and examines how society and space are mutually constituted. The objective is to emphasize on the human as the inhabitant of the Earth.

- **Outcome:** The students, after the course, have a shift in focus from the physical nature of the subject thereby including the concept of man in it. They can understand how space and place mediate the production and reproduction of key social divides – such as class, race, caste, etc and can understand the structure and components of society and culture.

❖ **Course 3: Climatology**

The course takes up the study of Earth in three forms, i.e, as a study of Atmosphere, the study of Soil and the study of Ecosystem. All the three study elaborates the physical basis of Geographical study, thereby including the atmospheric elements, its nature, structure, functioning and effect on human nature. Also, in the study of Soil, the nature, structure, character and its role in human development are dealt along. Ecosystem study includes the study of Earth as the home of various floral and faunal variety.

- **Outcome:** After the course, the students can learn and judge the various activities of the day to day change in atmosphere and can assess its role in the study of Geography. Also, the concept of climate change is elaborately understood by the students. They learn the importance of soil science and can effectively utilize their knowledge. The study of ecosystem not only emancipates the study of the students but, they can understand the various conventions, political agendas regarding ecosystem retention. The sustainability of the Earth is also understood through the course.

❖ **Course 4: Geographic Thought/ Philosophy**

The course tries to seek the history behind the study of Geography. The various historical and philosophical ideas that shape up the subject are read in the subject. Also, the study of India, in particular is taken up alongside that forms a micro analysis of the spatial science.

- **Outcome:** after the completion of the course, the students learn the history and philosophy of the subject, what actually led to the evolution and popularity of the discourse. Also, the various branches of the subject are known by the students which can help them in choosing their future study. After, the study of India's regional geography, the students develop a core understanding of India which is regarded as a very important part of the study of geography that helps to understand ones home better.

❖ **Course 5: Regional Geography of India**

This course is rather a micro analysis of the study of India. The course focusses on the Indian perspective of analysis and hence discusses on the regional study of India in particular, on the light of the general geographical knowledge.

- **Outcome:** After the students take up this course, they are more concerned with the study of the region they are familiar with, i.e, India. India has a variation in Topography, climatic, soil and all other geographical features which can be better analysed by the students, once they complete the course. Also, the various cultural features are shaped up by the varied physical events which can also be well understood by the students in due course of time.

❖ **Course 6: Population Geography**

This course gradually shifts the focus of the subject matter of geography from physical geography to human geography and discusses about the demographic detailing in the study. The study examines how and why aspects of population have been understood as 'problems' in different places and times. To develop this critical geographic approach to population issues, the study analyses trends in population, population patterns at several scales (global, national, urban) and the population processes (fertility, mortality, migration) that create them. The course further envisages in to the detailed discussion of the various demographic models and tries to bring about the problems of a demographic imbalance.

- **Outcome:** The course ensures that the students know the basic problem of the human geography, i.e. population, which can, if wisely used, be served as a resource, and if carelessly increased, can be a resistance. It lets the students to investigate how population processes are shaped by, and engender, larger processes of political, environmental, urban, economic, and cultural change.

❖ **Course 7: Settlement Geography**

The course aims at discussing the settlement geography in general with various models and theories associated with the settlement pattern in particular. The study is global and seeks generalization of the science of human settlement settlement as a home of man on earth. Here, the various morphologies, analogies and model building is taught.

- **Outcome:** this course ensures a strong foundation of the student about the various types of rural and urban settlement pattern thereby making the study objective and letting the student decide about the various settlement models around the earth.

❖ **Course 8: Regional Planning**

This course is a specialized attempt to study the regional planning in detail. It examines regional planning in advanced economies and the relationship between regional planning and more conventional land use planning. The course considers the origin and development of regional planning as a discipline, as well as its contemporary applications.

- **Outcome:** After the successful completion of the course, the students can Identify and describe regions based on physical, geographical, land use, environment, social,

economic and cultural characteristics. They can also outline and review key contemporary planning challenges and opportunities in rural and regional contexts.

❖ **Course 9: Remote Sensing and GIS**

The course aims at examining the history and modern-day scope of remote sensing and continue with an in-depth review of the full electromagnetic spectrum. Also, it seeks to examine the fundamentals involved in image acquisition, by examining a variety of topics associated with digital photographic sensor systems, the role and importance of digital data, the typical steps that would be involved in transforming these digital data into information (i.e. image interpretation), the various Earth observation missions launched.

- **Outcome:** After the successful completion of the course, the students can explain the principles of remote sensing and the technical characteristics and constraints of Earth Observation missions they can understand the main concepts that define Geographic Information Systems and can describe the geographic space with concepts and terms commonly used to build operating models in GIS.

❖ **Course 10: Practical**

- **Elements of Map:** The study/ course is designed to acquaint the learner with the essential component of a map in order to develop map reading skills.

I. Directions and Scale

- a) Definition of a map; types of maps
- b) Directions- True North and Magnetic North.
- c) Scale – Representation of scales on map. (i) Statement of scale, (ii) Representative Fraction (R.F.) (iii) Linear scale and its construction.
- d) Latitude and longitudes. (i) Important latitudes; (ii) Longitude and time, IST and date line and (iii) Grid of latitudes and longitudes and location of places on maps.

This course involves the conceptual practical knowledge of scale, numbering and its understanding. It also studies various cartographic and diagrammatic representation of the data and its interpretation.

- **Survey Instruments**

The study further encompasses the use of various survey instruments and lets the student handle the various types of survey with instruments like Prismatic Compass, Dumpy Level, Theodolite, Geographic Positioning System etc. also, the various types of error correction is also discussed.

- **Projection**

This course discusses the details of projection:

- I. Maps – grids of latitude and longitudes.
- II. The globe and maps – their merits and demerits.
- III. Developable and non-developable surfaces.
- IV. Classification of map projections.
- V. Map projection –basis, identification and uses
- VI. Choice of map projection for India.

➤ **Statistical Methods**

This is an introductory course in statistics. Students are introduced to the fundamental concepts involved in using sample data to make inferences about populations. Included are the study of measures of central tendency and dispersion distributions, statistical inferences from large and small samples, linear regression, and correlation. It is designed to acquaint the learner with various methods of statistical techniques and also interpreting data for drawing meaning but inferences and converting them into visual and more comprehensible forms.

Outcome: The primary outcome of this course is Quantitative Reasoning, which is to understand and apply mathematical concepts and reasoning, and analyze and interpret various types of data. This course provides students with skills for proficiency in statistics, and the opportunity to learn to communicate and reason statistically.

➤ **Map Interpretation**

This course is designed to acquaint the learner with various types of maps, their characteristics and the interpretation.

- I. Maps and their Interpretation
 - a. Interpretation of Topographical Map.
 - i. Marginal Information
 - ii. Use of conventional signs and symbols;
 - iii. Methods of representing relief on map contours level colouring spot heights, benchmarks.
 - iv. Identification of relief features on a map through contours
 - v. Drawing of a cross-section or a profile from a contour map;
 - vi. Interpretation of topographical sheets.
 - b. Weather Instruments and Interpretation of Weather Maps
 - i. Significance of weather maps.
 - ii. Weather Symbols.
 - iii. Study of January and July Indian weather maps in respect of temperature, pressure, wind direction, velocity, cloud cover and precipitation.
 - c. Geological Maps
 - i. Importance of Geological Maps

- ii. Study of the concept of Uncorformity, Dip, Strike, etc.
- iii. Cross section of Geological Map and to mark its true dip and apparent dip

➤ **Field Work/ Field Survey**

The students are taken to a rural or urban municipal area, to perform their survey work that involve: 1. Land-use survey of a village 2. Socio Economic Survey of a Rural Mouja or a Panchayat Area. 3. Survey of a Market/Weekly market 3. Survey of Civic Amenities in an area. 4. Survey of Landforms of an area.

Outcome: The student, after the field trip learns the processes involved in socio-economic survey of an area to study its various aspects:

A. Field And Its Purpose: 1. Role of Fieldwork in Geography.

2. Aim and Formulation of Hypothesis

3. The Different Approaches to Fieldwork.

B. Design and Methodology of Field Work: 1. Design: Importance, Components and Types.

2. Selection of samples and sample size.

3. Formulation of Questionnaires and

Schedules; Field Sketches etc.

C. Collection of Information: 1. Methods of administering the questionnaires and survey schedule

2. Identification of samples; (c) Use of Field Sketches

3. Precautions in collecting the information.

D. Processing and Presentation of Information: 1. Processing of primary data.

2. Presentation of data: tabular and cartographic

Programme Outcome:

AFTER SUCCESSFUL COMPLETION OF THE COURSE,.....

- Students will have a general understanding of physical geographic processes, the global distribution of landforms and ecosystems, and the role of the physical environment on human populations.
- Students will have a general understanding of the various theoretical and methodological approaches in both physical and human geography and be able to develop research questions and critically analyze both qualitative and quantitative data to answer those questions.
- Students will be able to think in spatial terms to explain what has occurred in the past as well as using geographic principles to understand the present and plan for the future.
- Students will read, interpret, and generate maps and other geographic representations as well as extract, analyze, and present information from a spatial perspective.
- Students will understand through lectures and field trip, the interconnection between people and places and have a general comprehension of how variations in culture and personal experiences may affect our perception and management of places and regions.
- Students will have a general understanding of cultural geographic processes, the global distribution of cultural mosaics, and the history and types of interaction between people within and among these mosaics
- Students will understand general demographic principles and their patterns at regional and global scales.
- Students will be able to locate on a map major physical features, cultural regions, and individual states and urban centers.
- Graduates will identify and critically analyze patterns of human-environment interactions, including perception, distribution and use of natural resources.
- Students will demonstrate their knowledge of urban and regional planning and how effective land management influences the utility of the land.
- Students will demonstrate knowledge of quantitative methods used by geographers and their ability to use statistics to solve the problem.

Department of Chemistry

Mugberia Gangadhar Mahavidyalaya

The purpose of the undergraduate chemistry program is to provide the key knowledge base and laboratory resources to prepare students for careers as professionals in the field of chemistry, for graduate study in chemistry, biological chemistry and related fields, and for professional school including medical, dental, law and business programs.

- Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistries. They will be familiar with the application of safety and chemical hygiene regulations and practices.
- Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
- Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
- Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats to both scientists and the public at large.
- Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.
- Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
- Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.
- Students will be able to function as a member of an interdisciplinary problem solving team.

Besides, a degree in Chemistry will open the door to a multitude of possibilities for industry leading jobs. Chemists are highly recruited from different industries for their ability to think analytically and their knowledge and understanding of the natural world. Recent graduates have found meaningful employment in a variety of areas which include:

- Pharmaceutical Drug Design and Synthesis
- Cancer Research
- Pharmaceutical Sales
- Process and Medicinal Chemist

- Water and Air Quality Analyst
- Forensic Scientist
- Laboratory Instrument Technician
- Energy Related Industries
- Food and Drug Administration (FDA)
- Center for Disease Control (CDC)
- Polymers and Materials
- Toxicology

There are countless more possibilities for a unique and profitable career with a Chemistry or Biochemistry degree.

Course Outcomes

Paper I, III & VI: Organic Chemistry (Group – A)

At the end of the course the students will

1. Know and recall the fundamental principles of organic chemistry that include chemical bonding, nomenclature, structural isomerism, stereochemistry, chemical reactions and mechanism.
2. Name the functional groups and different class of organic compounds.
3. Recognize the basic practical skills for the synthesis and analysis of organic compounds.
4. Predict the major and minor products of a variety of organic reactions with appropriate stereochemistry and regio-chemistry.
5. Understand and reproduce accepted mechanisms of organic reactions including all intermediates, arrows, charges, and resonance structures.
6. Understand and interpret spectra (IR, ¹H NMR, Mass Spec., and UV-VIS) of organic molecules.
7. Name or draw the structure of an organic molecule using substitutive and/or functional class IUPAC nomenclature.
8. Devise reasonable high-yield synthesis of a target molecule from given organic starting materials.

9. Understand physical properties of organic molecules.
10. Perform a laboratory experiment using conventional equipment, instrumentation, and techniques and understand the principles well enough to interpret the data collected.

Paper I, III & VI: Inorganic Chemistry (Group – B)

At the end of the course the students will

1. Predict physical and electronic properties of atoms using current models and theories in chemistry (emphasis placed on the quantum mechanical model).
2. Apply current chemistry models/theories to understand and predict the physical/electronic properties, bonding, and reactivity that occur in inorganic complexes with emphasis on coordination complexes containing transition metals.
3. Construct qualitative sets of molecular orbital for simple molecules and inorganic complexes.
4. Describe the physical and electronic properties of solid-state materials and bioinorganic molecules.
5. By completing this course students will understand the foundational principles and topics relevant to the field of inorganic chemistry. This will aid the program outcomes to prepare students for employment or further educational training.
6. Using concepts and models applicable to inorganic chemistry, students will analyze inorganic systems in a systematic and detailed fashion. Predictions of physical and chemical properties will be based on these analyses.
7. As well as learning content, students will also develop (or further develop) important process skills which will enable lifelong learning

Paper II (Group-A), IV & VII: Physical Chemistry

At the end of the course the students will

1. Investigate and understand the physical models underlying our current perception of atomic and molecular behavior at the most basic, fundamental level. Understand basic terminology of quantum chemistry and spectroscopy in context of these models.

2. Develop an ability to use conceptual and mathematical tools to express and predict atomic and molecular behavior.
3. Analyze and interpret experimental data using quantum mechanical models.
4. Culture a basic understanding of how computational chemistry can be used to determine atomic and molecular properties.
5. Increase critical reading and critical thinking abilities.
6. Increase an appreciation for the creations of the Lord.
7. Statistical mechanics: Apply probability principles to the behavior of large ensembles of atoms or molecules, and to use this to predict thermodynamic properties of a system.
8. Thermodynamics: Develop a competent knowledge of classical thermodynamic principles, compare these to those from statistical mechanics, and apply them to a variety of phase (gas, liquid, solid, and solution) and reaction equilibrium.
9. Examine basic principles of thermodynamics and kinetics together.
10. Analyze and interpret experimental data using these thermodynamic, statistical and kinetic models.
11. Increase critical reading and critical thinking abilities.

Paper II (Group-B) – Industrial Chemistry

At the end of the course the students will

1. Know the fundamental concepts on the principal classes of reactions and raw materials utilized in the industrial chemical production and management of the same reactions from an application point of view, developing sensitivity to the problems connected with safety and environmental sustainability.
2. In particular these concepts will be helpful to analyze simplified flow sheets of chemical processes that take in reagent treatment, reaction, product separation and purification and to evaluate dangerous and using flammable reaction mixtures processes.

General Chemistry

At the end of the course the students will

1. Explain the behavior of, and interactions between, matter and energy at both the atomic

and molecular levels.

2. Use standardized names and symbols to represent atoms, molecules, ions and chemical reactions.
3. Predict atomic structure, chemical bonding or molecular geometry based on accepted models.
4. Apply quantitative reasoning skills to matter and energy, and physical or chemical changes that occur.
5. Use accepted models to describe the reactions between acids and bases and basic equilibrium concepts
6. Understand the principles of kinetics and thermodynamics as applied to rates and equilibrium positions of chemical reactions.
7. Use quantitative measures of solution concentration in describing colligative, acid-base, solubility, and electrochemical principles of aqueous solutions.
8. Interpret nuclear processes such as radioactivity, fission, and fusion in terms of kinetic and thermodynamic principles.
9. Demonstrate competence in collecting and interpreting data in the laboratory.

Paper V & VIII- Practical Chemistry

By the end of this course the following outcomes will be obtained

1. All students must be able to readily identify glassware commonly used in the chemistry laboratory and know how to properly utilize the glassware.
2. Learn basic chemistry techniques, such as how to calculate percent yields, how to properly use measuring devices, how to properly clean glassware at the end of an experiment.
3. Learn the safety requirements and methods needed to work in a chemistry laboratory.
4. Learn how to safely handle, utilize and dispose of chemicals.
5. Learn how to document laboratory experiments, how to maintain a scientific notebook.
6. Communication in the form of laboratory reports will be clear, purposeful, and make appropriate use of evidence, data and technology as applicable.

7. In laboratory experiments, student should be able to both individually and within a team with fellow classmates, conduct laboratory experiments, critically analyze data, draw conclusions from the data, and clearly and concisely report the observations and conclusions drawn from the laboratory experiments.
8. Students will develop and execute effective processes for completing tasks.
9. Students will be able to interpret, test and demonstrate principles revealed in empirical data.
10. Students will be able to work together toward a shared purpose relevant to the course or discipline with a sense of shared responsibility for meeting that purpose.

Program Outcomes

A. Depth and breadth of knowledge

1. Be able to describe the fundamental scientific principles in the subfields of chemistry (analytical, inorganic, organic and physical), and apply these principles to problems.
2. Be able to explain, integrate and apply relevant knowledge to problems that emerge from the broader interdisciplinary subfields (life, environmental and materials sciences).

B. Knowledge of methodologies

3. Be able to identify and describe the underlying principles behind chemical techniques relevant to academia, industry and government.
4. With guidance, be able to apply the methodologies in order to conduct chemical syntheses, analyses or other chemical investigations.
5. Obtain information from library, online and literature resources that will support the solving of chemical and research problems.

C. Application of knowledge

6. Be able to use chemical knowledge to predict and rationalize properties, mechanisms and patterns of reactivity.
7. Be able to develop a testable hypothesis, execute research experiments, compile raw data and

provide conclusions.

D. Communications skills

8. Be able to prepare logical, organized and concise written reports, and oral and poster presentations that effectively communicate chemical content to other scientists.
9. Be able to field questions pertaining to chemical theory, research experimental design and data interpretation.

E. Awareness of the limits of knowledge

10. Recognize assumptions and limitations in the scientific models and simulations, and propose their possible impact on the results.
11. Evaluate the accuracy of, and the sources of errors in, experimental measurements.

F. Autonomy and professional capacity

12. Be able to work productively and collaboratively as a team member.
13. Be able to conduct laboratory experiments safely; evaluate the potential impact chemistry may have on society, health, and the environment.

Department of Mathematics (UG & PG)

Mathematics Programme Mission

The mission of the mathematics programme of the Department is to provide high quality education in pure and applied mathematics in order to prepare students for graduate studies or professional careers in mathematical sciences and related fields. So the UG & PG program, will have knowledge and appreciation of the breadth and depth of mathematics, including the connections between different areas of mathematics, and between mathematics and other disciplines. They will be prepared for immediate participation in the workforce or for graduate study.

Mathematics Course

This course is an essential pre-requisite for the more advanced courses offered by the Vidyasagar University as well as other Indian and International Universities. Thus, developing the ability to pursue advanced studies related to

Applied Mathematics, Pure Mathematics and Computer Applications is a major outcome of the B.Sc. Mathematics Honours Course.

The Syllabus covered in the B.Sc. Mathematics Honours Course of the University of Calcutta is a very well-planned and comprehensive one. In support of what has been said above, we briefly list below, the outcome of the course at the end of the three academic years.

By the end of the third year, students become familiar with the theory and application of:

C1. Classical, Abstract and Linear Algebra to the solution of algebraic linear, non-linear and transcendental equations and systems of simultaneous linear equations.

C2. Analytical Geometry of 2 and 3 Dimensions to the concept and use of vectors as a mathematical tool; the different types of

C3. Differential Calculus of a single and several variables in investigating the behaviour of a wide range of sequences, series (finite and infinite) the differentiation of functions, determination of extrema.

C4. Integral Calculus and Riemannian Integration for the evaluation of indefinite, definite and improper integrals and special f

C5. Ordinary and Partial Differential Equations and the theory of Integral Transforms.

C6. Operations Research, Linear Programming and Game Theory

C7. Analytical Statics to studies of rigid bodies in equilibrium under coplanar and non-coplanar force systems.

C8. Analytical Dynamics of a particle and rigid bodies.

C9. Hydrostatics

C10. Probability and Statistics

C11. Computer Programming in FORTRAN/C and BASIC with hands-on training and Boolean Algebra

C12. Numerical Methods with hands-on training

C13. Mathematical Modeling & Discrete mathematics

. Mathematics Programme outcome

Graduates of the mathematics program will be able to:

- Apply their knowledge in modern industry or teaching, or secure acceptance in high-quality graduate programs in mathematics and other fields such as the field of quantitative /mathematical finance, mathematical computing, statistics and actuarial science
- Apply critical thinking and communication skills to solve applied problems.
- Maintain a core of mathematical and technical knowledge that is adaptable to changing technologies and provides a solid foundation for future learning.
- Communicate effectively both orally and in writing

- Work effectively in teams
- Use knowledge and skills necessary for immediate employment or acceptance into the UG & PG program.
- Exhibit ethical and professional behavior

Acquire the basic skills and conceptual understanding regarding differential, integral and multivariable calculus, as well as that of fundamental mathematical objects introduced in our core courses such as sets, functions, equations, vectors, matrices, and groups.

- Demonstrate mathematical thinking skills, progressing from a procedural and computational understanding of mathematics to logical reasoning, pattern recognition, generalization, and abstraction, and to a formal proof.
- Communicate mathematical ideas orally and in writing, with precision, clarity and organization, using proper terminology and notation.
- Acquire proficiency in the use of technology to assist in learning and investigating mathematical ideas and in problem-solving.
- Use knowledge of content and mathematical procedures to solve problems and make connections between the different areas of mathematics.
- Use numerical techniques in solving problems

Read, understand and construct correct mathematical and statistical proofs and use the library and electronic data-bases to locate information on mathematical problems

Explain the importance of mathematics and its techniques to solve real life problems and provide the limitations of such techniques and the validity of the results

Propose new mathematical and statistical questions and suggest possible software

Packages like MATLAB, C Language and/or computer programming to find solutions to these questions

Continue to acquire mathematical and statistical knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematics

Create, use and analyze graphical representations of mathematical relationships

Communicate mathematical knowledge and understanding

Apply technology tools to solve problems

Perform abstract mathematical reasoning

Learn independently

Developed the skill for higher study, research activities and Project work, etc.

After completing UG / PG, a pass out student can contribute a lot to our society. For example a student after passing out can work in various sectors which are directly related to our society development.

The PG course is an essential pre-requisite for the more advanced courses offered by the Vidyasagar University as well as other Indian and International Universities. Thus, developing the ability to pursue advanced studies related to Applied Mathematics, Pure Mathematics and Computer Applications is a major outcome of the M.Sc. Mathematics Course

Course No.	Topics	Marks	No. of Lectures	Hours
MTM101	Real Analysis	50	50	40
MTM102	Complex Analysis	50	50	40
MTM103	Ordinary Differential Equations and Special Functions	50	50	40
MTM104	Advanced Programming in C and MATLAB	50	50	40
MTM105	Classical Mechanics and Non –linear Dynamics	50	50	40
MTM106				
	Unit-1			
	Graph Theory	25	25	20
MTM106				
	Unit-2			
	Lab. 1: (Computational Methods: Using MATLAB)	25	25	20
MTM201	Fluid Mechanics	50	50	40
MTM202	Numerical Analysis	50	50	40
MTM203				
	Unit-1			
	Advanced Abstract Algebra	25	25	20
MTM203				
	Unit-2			
	Advanced Linear Algebra	25	25	20
MTM 204	CBCS			
MTM205	General Theory of Continuum Mechanics	50	50	40
MTM205				
	Unit-1			
	General Topology	25	25	20
MTM206				
	Unit-2			
	Lab. 2: (Language: C Programming with Numerical Methods)	25	25	20
MTM301	Partial Differential Equations and Generalized Functions	50	50	40
MTM302	Transforms and Integral Equations	50	50	40
MTM303	Operations Research /Dynamical Oceanology and Meteorology	50	50	40
MTM304*	CBCS	50	50	40
MTM305	Special Paper-OM Dynamical Oceanology-I	50	50	40
MTM305	Special Paper-OM Dynamical Meteorology –I	50	50	40
MTM306	Special Paper-OR Advanced Optimization and Operations Research	50	50	40
MTM306	Special Paper-OR Operational Research Modelling-I	50	50	40
MTM401	Functional Analysis	50	50	40
MTM402				
	Unit-1			
	Fuzzy Sets and their Applications			

25 20
 MTM402
 Unit-2
 Stochastic Process and Regression
 25 20
 MTM403
 Unit-1
 Magneto Hydro-Dynamics 25 20
 MTM403
 Unit - 2
 Soft Computing 25 20
 MTM404 Special Paper-OM
 Dynamical Oceanology –II 50 40
 MTM405
 Unit-1
 Special Paper-OM Dynamical Meteorology –II 25 20
 MTM405
 Unit-2
 Lab.: (Dynamical Meteorology) 25 20
 MTM404 Special Paper-OR Nonlinear Optimization 50 40
 MTM405
 Unit-1
 Special Paper-OR Operational Research Modelling- II 25 20
 MTM405
 Unit-2
 Lab. on Special Paper: (Operations Research: Using
 MATLAB/LINGO/MATHEMATICA)25 20
 MTM406 Dissertation Project Work 50

Mathematics Programme outcome

Post Graduates of the mathematics program will be able to:

- Apply their knowledge in modern industry or teaching, or secure acceptance in high-quality graduate programs in mathematics and other fields such as the field of quantitative /mathematical finance, mathematical computing, statistics and actuarial science
- Apply critical thinking and communication skills to solve applied problems.
- Maintain a core of mathematical and technical knowledge that is adaptable to changing technologies and provides a solid foundation for future learning.
- Communicate effectively both orally and in writing
- Work effectively in teams
- Use knowledge and skills necessary for immediate employment or acceptance into the Research program.
- Exhibit ethical and professional behavior

Dept. of Physics

Sub: Course Outcome (CO) & Programme Outcome (PO)

The main purpose of education is to grow up the children into productive citizens who use and serve their learned skills and knowledge in future for a better society. Each curriculum is formed on the basis of those requirements of nation. Our course outcomes are given below

Course outcome:

Co-1: Mathematical Physics

The objectives of this course (differential equation, integration, numerical analysis, etc.) is to develop their skill in method of computing mathematical formula involved in physics. Also they learn “PYTHON PROGRAMMING”, “C-PROGRAMMING”, “FORTRAN PROGRAMMING” to solve linear, non linear and transcendental equations more easily. Together with this they also learn “GNU PLOT” to plot various types of 2D and 3D equations. Students can use this type of advanced programming on their future research.

Co-2: classical mechanics

It aims to gather more knowledge about fundamental dynamics, collision etc. and also by their practical knowledge they calculate phase and position of a system.

Co-3: EM Theory

It aims to electric and magnetic property of the system. By its practical knowledge we use various types of electric equipments in our daily life.

Co-4: Wave optics

The objective of this course is to explain properly some natural phenomena like dispersion and interference of light. It's knowledge prevent the error in vision of eyes.

Co-5: Thermal physics

It explains how heat and energy conduct naturally. It also explain working principle of engine & their behavioural change with heat.

Co-6: Solid state physics

It aims to explain internal structure of a substance & crystal by some technique like powder method, x-ray diffraction method, rotating crystal method etc.

Co-7: Electronics

It's aims to gathered knowledge about logical connections of electric equipment with their basic knowledge.

Co-8: Statistical mechanics

It helps us to get an elementary idea of statistical behavior of system. It is also a method of calculating some thermodynamical co-ordinate & parameters of a large system.

Co-9: Atomic & nuclear physics

The objective of this course is to analysis atomic and nuclear structure of atom & their macroscopic behavior.

PROGRAMME OUTCOME:

PO-1 After completing 3 yrs of bachelor's degree, students would gain the fundamental aspect of physics and mathematics.

PO-2 Students acquire knowledge of various electronics equipment in our daily life.

PO-3 After completing this course one can get job in different branches like IT sector, project assistant& maker, laboratory instructor, technical content writer etc.

Course outcome

Theory

PHYSIOLOGICAL ASPECTS OF NUTRITION

After the completion of the course, the students will have a basic knowledge of our body or physiological system like cardiovascular system, gastrointestinal system, reproductive system, excretory system, respiratory system, nervous system, musculoskeletal system, endocrine system, immune system & immunization

INFORMATION, EDUCATION AND COMMUNICATION (IEC) INCLUDING NUTRITION PROGRAMM

From this part students will gain knowledge - process of information development in the field of nutrition and health, nutrition education, role of nutrition education, impact of nutrition education, objective of communication, elements of communication, basic principle of communication, and different nutritional programmes.

HUMAN NUTRITION

After the completion of the course, the students have an idea of nutritional requirements and RDA, nutrition in women, children and adolescents, during pregnancy, during lactation, during infancy and also will have idea of geriatric nutrition , sports nutrition and space nutrition

COMMUNITY NUTRITION

From this course students will get idea of community, nutritional assessment and surveillance, nutritional problem in the community, concept of surveillance systems: role of international, national, regional agencies and organizations and public health, demography and epidemiology.

NUTRITIONAL BIOPHYSICS, BIOCHEMISTRY AND FOOD SCIENCE

After the completion of the course, the students will have sound knowledge on cell membrane transport system, surface tension, colorimetry, photometry, electrophoresis, acid, base, buffer, pH, enzymes, carbohydrates, lipids, proteins, dietary fibres, antioxidants, nutraceuticals, intermediary metabolism, lipoproteins, nucleic acids, water - metabolism & balance, vitamins, and minerals.

FOOD COMMODITIES

From this chapter students will get information on different food commodities like cereals and millets, pulses and legumes, milk and milk-products, eggs, meat, fish and poultry, vegetables and fruits, sugar and sugar products, fats and oils, raising and leavening agents, food adjuncts, convenience foods, salt, beverages, preserved products and new food.

DIET THERAPY

From this chapter students will enrich with knowledge of etiological factors, symptoms, diagnostic tests and management of upper GIT disease, intestinal diseases, malabsorption syndrome, celiac sprue, tropical sprue, intestinal brush border deficiencies, protein losing enteropathy, liver disorder, diseases of gall bladder and pancreas cholelithiasis, cholecystitis, cholecystectomy, pancreatitis, diet in disease of the endocrine ,cardiovascular system, renal diseases, allergies, inborn error of metabolism and anaemias.

FOOD MICROBIOLOGY, HYGIENE AND SANITATION

Food Microbiology is a essential part of food technology along with knowledge of hygiene and sanitation is required to take the food safely. So from this chapter students will be familiar with cultivation of microorganisms, primary sources of microorganisms in foods, physical and chemical methods used in destruction of micro organisms in foods, fundamentals of control of micro organisms in foods, food spoilage, public health hazards due to contaminated foods; food borne infections and intoxications-symptoms, mode of transmission and methods of prevention; investigation and detection of food borne disease out-break,importance of sanitation and hygiene in foods, kitchen hygiene, employee health, food plant hygiene and food laws.

HEALTH STATISTICS, COMPUTER APPLICATION AND RESEARCH METHODOLOGY

To do research oriented activities students will be taught of following topics general concept of research, sampling, data collection method, and experimental design, tabulation of data – frequency distribution and its types, cumulative, bivariate and multivariate frequency distribution, graphical presentation of data, measurement of central tendency, standard deviation and standard error, test of significance, knowledge of computer -hardware and software, computer viruses, data processing and programming

Practical

MEAL MANAGEMENT

After studying this course students will be able to learn prepare diet chart and menu planning for adult men and women of different physical activity and economic status, infants, pre-school children and adolescents, pregnant, lactating and nursing mothers, elderly people.

PROJECT,

Studying this chapter students will be able to do project work on public health / nutritional biochemistry / nutritional survey.

INTERNSHIP

Students will be able to

- Prepare and provide guidance in the production of therapeutic diets.
- Supervise preparation of diets, assist and guide in tray setting with special emphasis on portion control and therapeutic modifications.
- Supervise delivery of trays to patients.
- Get feedback from patients regarding diets.
- The modification of diet through consultation doctors.
- Undertake case study at hospital situations.
- Visits to different dietary departments of various hospitals. Gain experience in the administrative set up of a dietary department.

EDUCATIONAL EXCURSION

Students will be aware about the visiting institute and learn principle of different instruments with uses from the institute.

NUTRITIONAL PHYSIOLOGY & ANTHROPOMETRY

Students will be able to identify cell of different human organs, able to determination of Haemoglobin, identification of WBC, Measurement of Blood Pressure and Pulse rate, Weight for age, Height for age, Weight for height, Mid upper arm circumference, BMI, W/H Ratio, Growth chart preparation (WHO, NCHS & ICMR).

NUTRITIONAL BIOCHEMISTRY

Students will be able to do qualitative analysis of carbohydrate, protein, fat, acetone, bile salt & pigment, urea, estimation of reducing and total sugars in foods, estimation of lactose in milk, qualitative test with saliva and urine, determination of acid value, saponification of natural fats and oils, estimation of total protein by biuret method, estimation of ascorbic acid content of foods vit-E, vit-A in foods by biochemical method, estimation of sodium, potassium, calcium and iron in different food stuffs.

DIET THERAPY

Students will be able for Planning and preparation of normal diets, fluid diets, soft/semi solid diets, high protein diets, low fat and low calorie diets, diets using sugar substitute for diabetic patients, high fiber diets, peptic ulcers, viral hepatitis, anaemia, diabetes mellitus, CHD and gout.

Program out come

Nutrition science is the area of knowledge regarding the role of food in maintenance of health. Good nutrition is the foundation for good health. Increasingly recognized as a vital part of public and individual health, nutrition graduates use their skills to help people and communities make the right eating choices. This discipline is gradually gaining importance in terms of career prospect of the students in the following ways

Government Sector: They can work with government hospitals, government's health department, schools, colleges, factories and office cafeterias for planning nutritional regimen.

Sports and Health Clubs: They can also work for sports hostels and athletes camps. Health and recreation clubs, canteen and nursing care facilities also require the services of nutritionists and dietitians. Employment opportunities are also open to them in catering department of star hotels and restaurants.

Teaching, Research and Development: Research and development involves conducting research on various food items to ensure their quality as well as studying the effects of various types of diet on the body chemistry in labs. The research dietician or nutritionists do research on nutritive value of food which helps to understand the various components of food we eat and the right type of food which provides a balanced mix of the essentials like vitamins, minerals etc. needed for the human body. They also can opt for research career mainly in universities, public or private sector research institutes, food product manufacturing companies and hospitals. Teaching the science of nutrition or dietetics in school, colleges and universities is also a good option.

Mass Media: Moreover they could find openings in the mass media where top priority is given to disseminating vital information on healthy living.

Gyms, Slimming Centers: In these gyms and slimming centers nutritionist or dietitians are required to do making diet plan.

Private Consultant/ Practitioner: Experienced dietitians may become assistant, associate, or director of a dietetic department, or become self-employed. Some dietitians specialize in areas such as renal or paediatric dietetics. Besides all these they can also work as private consultant or private practitioner.

Department of Zoology

Course outcome

For U.G. CBCS Hons. Course

1. Non-chordates

- To study the diversity of non-chordates throughout the world.
- Their systematic positions, salient characters, behaviors and social value.
- Some of them are also practically identified to help students at their practical level.

2. Chordates

- To study the diversity of non-chordates throughout the world.
- Their systematic positions, salient characters, behaviors and social value.
- Some of them are also practically identified to help students at their practical level.

3. Ecology and environmental biology

- a) It is totally a field based topic which helps to know about environment, its present scenario, diversity, damage, causes of damage and remedy.
- b) We are always trying to do practically to promote students for the repairing of affected ecosystem.
- c) It is also related to study differential ecosystem and its utilization.

4. Cytology

- a) It is the study related with cell biology which gives us the knowledge about cell, its origin, types, and structure in microscopic form.
- b) It's also applicable to study differential cells to study their morphological variations, functional importance.
- c) It has practical value which gives the scope to study the cell's life span by cell culture which is a burning research aspect today.

5. Applied Zoology

- a) Application of zoology specifically use of animals in modern science is called applied zoology.
- b) It has enormous scope to apply in biology viz. apiculture, sericulture, silk culture, etc.
- c) Students are equipped with such practices to learn these applications to make some beneficial works in relation to earn money.
- d) India, specially West Bengal are now engaged with these practices to increase the financial value.

6. Animal Physiology and biochemistry

- a) This topic is related to learn physiological, anatomical and biochemical importance, values and functional aspects of different parts, organs present in animal body.
- b) It has great application in today's research world as different disease are always affect different parts of animals body, so that it is really need to know the details about each part of animal body and symptoms.

7. Aquatic biology

- a) It is a part of applied zoology related with culture of aquatic organisms.
- b) This study is related with modern culture practices viz. pisciculture, prawn culture, integrated fish farming, pearl culture, etc. which has immense importance in export and import to earn foreign money.

- c) Many students get this knowledge to skilled themselves to do some income policies.

For U.G. General Course

1. Non-chordates

- d) To study the diversity of non-chordates throughout the world.
e) Their systematic positions, salient characters, behaviors and social value.
f) Some of them are also practically identified to help students at their practical level.

2. Chordates

- d) To study the diversity of non-chordates throughout the world.
e) Their systematic positions, salient characters, behaviors and social value.
f) Some of them are also practically identified to help students at their practical level.

3. Genetics

- a) Genetics is the study to study about genes which has hereditary importance.
b) It has also applicable to study the diversity of organisms or species because it's related with genetic diversity.
c) Genetic material such as DNA, RNA etc. is also studied practically to evaluate differential changes responsible for species diversity.

4. Molecular Biology and biotechnology

- a) It is the study of cells, their genes in molecular level which gives us the knowledge about biochemical reactions continuously occurred within cells.
b) It has immense scope to use in modern research work viz. PCR, ELISA, DNA fingerprinting, western blotting, southern and northern blotting, etc.

Programme outcome

There are many scopes in Zoology oriented, but it depends what students want to do in future like research or govt job or private jobs.

- If your choice is research, then you have taken a wise decision taking Zoolog. Now a days there are golden opportunities for biology students in research field. Chemistry students are researching in biochemistr relaed study. The research field of chemistry has totally becomes bio-based. Even engineering students are taking biomechanics, bioengineering, biotechnology, biochemic engineering, biomedical engineering, etc. So B.Sc. Zoology (Hons. and General) is a good decision. In B.Sc. Zoology, there are

different types of interesting subjects like biochemistry, molecular biology, biostatistics, cell biology, genetics and more, all are biotechnology related subjects. So while having a BSc in Zoology, you can choose your passion, is it biochemistry or biophysics or biotechnology or molecular biology or anything other? Then do a M.Sc. in the subject where you can see your interest.

- If you choose biochemistry or biotechnology or genetics, you can also do M. Tech in those subjects after your M.Sc or you may also take general Zoology in M.Sc if you like. After the M.Sc or M.Tech you may go for JRF and can research in different labs. You should do PhD. PhD degree will help you to clear concepts and allow you to research anywhere.
- You may also do MSC in Forensic Science and go for research in Forensic labs.
- If you like teaching then simply do M.Sc, PhD, NET, SET and give CSC and become a Assistant Professor in Govt. or Govt. approved undergraduate and post graduate degree colleges.
- After M.Sc, studied for Bed and give School Service Exam and become school teacher.
- If you want to do govt jobs then after BSc you can sit for any competitive exam like SSC, LIC, Bank, rail, Psc, SCSC or UPSC.
- You may be forest officer as in IFS exam Zoology and Botany students get preference or you may be also apply for food supply office by giving the exam of food supply.
- If your interest is in private jobs then you may apply in agriculture based companies or pharmaceutical companies though it is true that India has not good faculty for private jobs for biology students but after B.Sc. in Zoology if u do MBA from IIM or such like reputed MBA colleges, then you must get good placement.
- You can do MBA in biotechnology and then you will get job with a fat salary and good placement in reputed biotech related or biochemic related companies.

Course outcome & Programme out come

1. Cardio Vascular Physiology

Here we discuss about the cardiac muscle & vascular feature and different state of heart, also ECG wave of both normal and abnormal.

2. Blood & immune system

Here we make a discussion about blood grouping, blood cell determination, blood transfusion & hazards of blood transfusion etc.

3. Muscle Physiology

It correlates with various work in day to day in our life, also discuss about the nature of work either static or dynamic those are involved in muscle contraction relaxation, and their types properties etc.

4. Nervous Systems

Those are involved in inauguration of different organ to supernal environment and make a decision to achieved a particular goals.

5. Endocrine system

Also integrate the all other organ and system together with nervous system to maintained physiological activities and internal signaling like neural transmission.

6. Reproductive Physiology

That deals about different and their work properties in our body and also roll in new born formation by female with male.

7. Bio stat

Here we discuss about different small and large calculation and result from large and small population for example percentage of Hb of a finite student group and their mean, median, S D etc.

8. Bio Physics

Here we discuss about different physical properties and their reactants in reaction those are performed at the time of chemical reaction.

9. Digestive system

It deals about different chemical reaction and their product like carbohydrate, protein & fat from digesting any food stuff & their absorption to blood, for making energy also we take proper nutrients from food.

10. Instrumental Physiology

Here we discuss about the different instrument that are used with principle to determine various human disease & state like pregnancy, tumor, internal, blood clotting, brain disease etc.

11. Community Physiology

Here we make about the conception for population control and family planning in our family also among different community by means of different family planning programme among individuals. Also cause of different affected disease among person to person & their remedy.

Mugberia Gangadhar Mahavidyalaya

Programme outcome:

- PO-1 After completing three years for bachelors in Bio-General (with Botany), students would gain the fundamentals of Botany.
- PO-2 Students acquire knowledge on various plants and their importance for human and social welfare.
- PO-3 The outlook of the Bio-General (with Botany) impart in skills like-different crop, fruit, wood, oil, medicinal and ornamental plant's agricultural process, process of organic fertilizer, biopesticide. Overall, they learn agricultural process.

Course outcome:

CO-1 Microbes

Its aims to develop conceptual knowledge on various types microbes, their discovery and economic importance.

CO-1.1 Algae

It aims to develop knowledge about algae and their economic importance.

CO1.2 Fungi

The objective of this course is to acquaint the knowledge about general features of fungi, their reproductive nature and used in human welfare also.

CO-1.3 Archegoniate

Acquire the knowledge on general features of archegoniate.

CO-1.4 Bryophyte

Students gain from study this topic about various types of bryophyte, their characters, life cycle and importance

CO-1.5 develop skills on- preparation of permanent slides on algae, fungi, bryophyte, pteridophyte and gymnosperm, set the slide under light microscope.

CO-2 Plant ecology and taxonomy

CO-2.1 its aims to develop knowledge about various ecological factors and learn plant adaptation in adverse situation.

CO-2.2 student gather knowledge about different types of food chain and different biogeochemical cycle occur in around of their environment.

CO-2.3 know about different biogeographical zones

- CO-2.4 know about how plants are identified, classified and how choose their name.
- CO-2.5 know importance of Herbarium for plant identification and know about different important Botanical garden in India and world.
- CO-2.6 its aims to know palynology, cytology, phytochemistry and molecular data how help in taxonomic classification.
- CO-2.7 Students know how prepare taxonomic hierarchy.
- CO-2.8 know about ICN and principles and rules of ICN for plant nomenclature.
- CO-2.9 know about different system classification.
- CO-2.10 learn about OTUs, cluster analysis and cladogram.
- CO-2.11 skills develop on dissect and diagram of different families' plants.
- CO-3 Plant Anatomy and Embryology
- CO-3.1 learn about meristematic and permanent tissues.
- CO-3.2 know about different plant parts.
- CO-3.3 know about seasonal growth plants.
- CO-3.4 study about plant adoptive and protective system in different environment
- CO-3.5 know about pollination mechanism and fertilization of plants.
- CO-3.6 prepare different types stem, root, leaf permanent slides.
- CO-4 Plant Physiology and Metabolism
- CO-4.1 learn about plant water relation.
- CO-4.2 know about minerals and their essentiality in plants.
- CO-4.3 learn about how plant uptake minerals and food translocate.
- CO-4.4 its aims to know how plant produce food and respirate.
- CO-4.5 know about growth regulator, light, temperature and their effect on plants.
- CO-4.6 develop skills on- calculation of stomatal index and frequency, demonstrate Hill reaction, demonstrate activity catalase in different pH and enzyme concentration, comparison of the rate respiration of different plant parts, separation amino acids by paper chromatography.

Mission and Student Learning Outcomes of the department of Bengali

Mission

The Department of Bengali of Mugberia Gangadhar Mahavidyalaya under Vidyasagar University follows the syllabus of U.G and P.G course, which according to Vidyasagar University and that syllabus offers diverse and flexible curriculum designed to help students prepare for meaningful careers in government, public service, acting ,stage performing, journalism, teaching and other related areas. Students also participate in different seminars and/or different programs like foundation course on Human Rights appropriate to their career goals and interests.

Student Learning Outcomes

Bengali Outcome No. 1 : Knowledge of the Field -- Concepts, Theories, and Methods

- Students learn the defining concepts and theories of Bengali language, literature, cult and culture which will help to fit for our society.
- Students learn about the methods and tools of Bengali syntax and folk culture, beside of that they are developing their creative writing skill.

Bengali Outcome No. 2 : Writing -- Academic Writing and Information Literacy

- Students learn to effectively use argument and to communicate claims to know in academic writing appropriate for the discipline like Wall Magazine.
- Students learn to evaluate and use evidence to support empirical claims to know in writing.

Through the careful reading of texts and the analysis of argument and evidence, students will develop the skills necessary to clearly, thoughtfully, and persuasively communicate in writing. Students will develop and practice these skills throughout the curriculum.

Bengali Outcome No. 3 : Critical Thinking

- Students learn to apply learned concepts, theories, and methods, as well as their mastery of argument and evidence to produce and communicate original research which analyzes and explains relevant Bengali language and literature phenomena -- in both writing and orally.

Bengali Outcome No. 4 : Students successfully completing a specialization in the study of Folk literature in under graduate level and so many special concept will develop to studying with M.A in Bengali.

- Be able to describe and explain Bengali theory and systems around the world, explore Bengali literature in the international arena,
- Understand the fundamental concepts, issues, and theories central to comparative language and international relations.
- Be able to explain the similarities and differences between various types of cultural language and how they affect for the society.

Note: Subject of Bengali language and literature is such as human activity that is best understood by bringing theory and practice together through experience and application.

Dept of Sanskrit

Program Outcomes

- PO-1 Sanskrit is the mother of all languages. This subject has been teaching throughout India. Without Sanskrit we cannot learn our mother language properly. After completing graduation student will acquire the knowledge about Vedic grammars, Vedic Mantras and proper pronunciation of Sanskrit language. Now a day's violence is increasing every day. Learning of Sanskrit Education is helping them to realizing himself who am I? Where I come to this world? Where I shall have to go after my death? What is my real duty in this world? Such type of answers we are getting from Sanskrit texts. So our moral activities are increasing through this text.
- PO-2 Students are getting their job opportunity throughout India by learning this oriental language. This student are getting regarding sufficient knowledge of Dharmasastra, Arthosasthra, prose, poetry, drama, Veda, Upanisad, Indian philosophy and moral science etc.
- PO-3 They are learning from Srimad Bhagabad Gita what we have to eat to keep our good health and mind. They are also taking their education regarding travel, sleep, food and also all types of performing duty from Srimad Bhagabad Gita.
- PO-4 Girls students get sufficient knowledge from Abhijnyana Sakuntalam how they will perform their duty after their marriage and how they will take care of their child.

Course Outcomes:

Course: 1

- CO 01. The student will able to achieve regarding Sanskrit grammar by which they can write and speak pure Sanskrit.
- CO 02. From Bhattikavyam student gets knowledge regarding the Ramayan Age civilization and the activities of Ramachandra to maintain their good family life.

CO 03. From Chandra sastra students are learning how we have to utter and compose a Sanskrit slokos by various chandos.

Course: 2

CO 04. From Abhijnyana-Sakuntalam students get knowledge about how a lady has to perform her duty by which she will be a good house wife. Such type of moral education she gets from Abhijnyana Sakuntalam and also which type of service is needed to our guest.

Course: 3

CO 05. After reading the text like Kadamvari, Kiratarjuniyam, Raghuvamsham, and Shishupalbadham they will get appropriate knowledge of their moral duty to live peacefully in this society and how we have to protest against corruption.

Course: 4.

CO 06. In paper 4th we get the texts like Kavyalankarasutrabrutti, sahyadarpanam, sanskritasahityasyetihasa etc. from these books students have to learn about the types of kavya and alamkar, guna etc. Lakshan of male and female is detected in sahyita darpan. From our vedic period to till now the writers of Sanskrit literature and their achievements are discussed here.

Course: 5.

CO 07. In paper 5th we gain a clear picture about Vaidic Sanhita, Isopanisad, Vaidic Vyakaran, Vaidic Sahityasyetihasa. We get more knowledge about Brahman, Aranyak, Uponisad from Vaidic Sanhita. From Isopanisad we get vast knowledge about Brahma or God who is the creator of this world and who is called Omnipotent, omnipresent and almighty to all creatures. In this book we have seen about Atma, Vidya, Avidya, Sambhuti, Asambhuti etc. and the vital role of sun for everything of the world.

Course: 6.

CO 07. In paper 6th the definition of Karak, Samas and Vasatattwa are taught which are the basis of Sanskrit language.

Course: 7.

CO 08. In paper 7th Manusamhita, Yajnavalkyasamhita, Arthasastra, Dharmasastrasyetihasa these books are very essential to every student for their economical, social, moral, political thoughts.

Course: 8.

CO 09. In paper 8th the books of Tarkasamgraha, Brhadaranyakotanisada, Srimadbhagavadgita, Bharatiya Darshan, students get a vast knowledge about Nyaya philosophy of Anambhatta, the character of Padartha, Dravya, Guna, Karma, Abava, Karana, Hetwabhasa etc. In Brhadaranyakotanisada we found the existence of super soul and its activities to human being. In Srimadbhagavadgita we observe what we have to perform in this world to become a good human being and how we have to fight against dishonesty. In Indian philosophy we get profound knowledge of all Astik and Nastik darshans.

Department of Music (Under Graduate Department)

Music has an eternal utility to all mankind. Music not only helps to develop the inner quality of human being but also take an important role of an overall development of our society. There are many aspects and objects of music and the people of our society either directly or indirectly are attached with this subject. We being Indian deserve the inheritance of an enriched classical and folk music tradition since from the Vedic period, which give us immense fame, respect and admiration worldwide. Today our noble Music Composers, Singers, Instrument Players (both stringed and leather), even the Dancer also have been awarded not only by the highest National Award like **Bharat Ratna, Padmabibhushan, Padmabhushan, Padmashree** etc but many international awards also. Music as a subject takes an important and essential position both socially and economically. So the importance of this subject gradually increasing day by day. The principles and the knowledge of music are not confined into only the theory or in practice, but the assimilation of both theory and practice are applied in many interdisciplinary subjects and experimental work. Some of the course outcomes may be mentioned as follows.

1. Students of music may establish their carrier as a **Music Teacher**. There are many openings not only in our state, country but also whole world wide. There are a huge demand of qualified teachers both in Government and Private School, Colleges and various Universities.
2. Students of music may establish their carrier as **Music Performer**. They can lead their life independent way. To build himself as a good performer one needed enough dedication, immense practice, proper *talim* and moreover his own creativity. The enriched music faculty may helpful to the student wishing to be a performer.

3. Students having the good sense of literature and creativity may lead their life as **lyricist**. They can enlist their name in the *Akashvani* (AIR), as empanelled lyricist. There are a little demand of lyricist in Cinemas, TV serials and many creative fields.
4. Students having the good sense of overall music compositions and creativity may lead their life as **Music Composer**. Music Composers are also lead their life independent way. There are many composers working in the Film Industry.
5. **Music Arranger** is also a path to build, one's life in a creative and different way.
6. Students may lead there life being a **Music Therapist**. As a therapist they need to deep sense of Psychology, Philosophy, Music, therapeutics and also the physiology.

Dept of Education

Mugberia Gangadhar Mahavidyalaya

Programme outcome:

- PO-1 After completing three years for bachelors in Education (General), students would gain the fundamentals of Education.
- PO-2 Students acquire knowledge on different educational commissions, pre and post independence in India and its impacts on today's education system.
- PO-3 The students get a clear picture how philosophy, sociology and psychology help in education.
- PO-4 Students acquire knowledge on various theories of learning, motivation, intelligence, instructions etc.
- PO-5 After completing this course student gets a clear idea about different problems of students and how to solve it through Guidance and Counseling services.
- PO-6 Students gain knowledge about evaluation system and its impact on education system.

Course outcome:

CO-1 Principles of Education

Its aim is to develop conceptual knowledge on meaning, nature and scope of education, different factors of education, and different agencies of education, child-centricism in education, play and play-way in education.

CO-2 Educational Psychology

It aims to develop knowledge about nature and scope of psychology, different stages of child, cognitive and emotional development of child.

It aims to develop knowledge about personality theory, habit formation and effect of emotion in education.

It aims to understand different intelligence theories and its impact on education, different learning theories and its impact on education.

CO-3 Development of education in modern India

The students will gain a synoptic view of ancient and medieval history of education.

The students will know the contribution of Raja Rammohan and Vidyasagar in social and educational reforms.

It aims to develop knowledge about the contribution of Vivekananda, Rabindranath and Arobindo in national education movement.

Students will acquire a clear knowledge about different educational reforms by Sadlar Commission, Wood-Abbot, Wardha Scheme, Sargent plan etc.

It aims to develop a synoptic view of changes in school system, primary and secondary education (structure and curriculum). Mudaliar commission, Kothari commission, national policy of education.

CO-4 Evaluation and Guidance in Education

It aims to understand the concept of evaluation, need and scope of evaluation in education, students' evaluation, curriculum evaluation, teaching evaluation and evaluation of an institute.

The students will gain different process of evaluation, criterion reference test, standardized test and cumulative record card.

Student will be able to tabulate data and graphical representation of data.

They will acquire knowledge about guidance and counseling and its impact on education.

English Department Learning Outcomes

Vision of the Department of English

The English Honours syllabus for undergraduate students of Vidyasagar University is designed to convey to the students a broad historical knowledge of British English, American English, and Indian English literatures, a sophisticated habit of critically engaging literary and cultural texts, a shared understanding of major problems, trends, and methods of literary and cultural analysis, and the ability to pose questions and organize knowledge in productive and original ways. While offering students clear direction on how to profit most from their study within the English department, this English Honours course also seeks to encourage students to assume an enduring habit of questioning and intellectual self-articulation.

General Goals the English Department

- ❖ Sophisticated critical engagement with literary and cultural texts, including consideration of the relationship between imaginative expression and the cultural and material circumstances in which that expression takes place and is received.
- ❖ Knowledge of literary critical methodologies: close reading, textual analysis, ability to make a disciplinary argument based in disciplinary use of evidence.
- ❖ Knowledge of the relationship between criticism and theory in the discipline: major theories that have impacted and are impacting literary and cultural study, what methods and focusses have proceeded from these approaches, and how to bring a larger knowledge of concepts to bear in one's own work.
- ❖ Ability to propose arguments that present, develop, and defend insightful claims about texts through formal analysis, engagement with existing criticism, and, when appropriate, engagement with primary and secondary material from the historical period.

Specific Learning Objectives for Undergraduate English Honours Students

- ❖ English Honours students of MugberiaGangadharMahavidyalaya,after the completion of their course,should be able to read literary and cultural texts in relation to philosophical, cultural, social and historical contexts
- ❖ They should be able to close-read literary and cultural texts, engage in critical analysis of these texts, and make arguments about them based in a disciplinary understanding of argument and evidence.
- ❖ Students should be able to write about literary texts with conceptual complexity, informed at least in part by familiarity with literary and cultural theory.
- ❖ Students should be able to locate their own argument in a critical conversation, with understanding of discipline specific use of secondary sources.
- ❖ They should be able to write rhetorically powerful original literature (in the case of creative writing) and/or rhetorically powerful and logically convincing work about literature (in the case of literary criticism).

Job options

We all are well aware that English is a non-vocational course, but there are lots of jobs which are directly related to this course; and there are many other jobs for which this degree is very useful.

Jobs directly related to your degree include:

- Digital copywriter
- Editorial assistant
- English as a foreign language teacher
- Lexicographer
- Magazine journalist
- Newspaper journalist
- Publishing copy-editor
- Web content manager
- Writer

Jobs where your degree would be useful include:

- Academic librarian
- Advertising account executive
- Advertising copywriter
- Arts administrator
- Film director
- Information officer
- Marketing executive
- PPC specialist
- Primary school teacher
- Public relations officer
- Records manager
- Secondary school teacher
- Social media manager etc.

Note: *We need to keep it in mind that many employers accept applications from graduates with any degree subject, so we should not restrict our thinking to the jobs listed above.*

Programme outcomes and Course outcome-HISTORY (Honours and General)

“A people without the knowledge of their past history, origin and culture is like a tree without roots”
Concept of history is a must for all human being without which one cannot imagine the past events. Possessing historical knowledge is immensely helpful to understand the historical genre of an event. In accordance with the concept to learn history of the world the Vidyasagar University has adopted new

Syllabus for Semester 1 students. It has comprises two Core Course for Honours Students. CC1 dealt with the historiography of ancient Greece, its Historians and their work, through this paper a student can understand the past histories of Greek historians and how they look into historical events can be imagined. The CC2 Course are mainly dealt with early ancient Indian history, through this course a student can understand the ancient Indian past, economy, culture and the people. The rest of the courses are designed to create a sense of the past, in a more comprehensive manner, so that the reader while having a more complete sense of the time under discussion can logically explain the facts presented. History, now therefore, does not appear as conglomeration of discrete facts; the facts rather appear before the reader as a series of logically interconnected events with a definite context.

CO.1- The historiography, the meaning and scope of historical study can be studied.

CO.2- The historical chronology of the ancient past and the continuity with the present has been described in the History syllabus.

CO.3- We have learnt about the history of Greece, but now the historiography on the historians who wrote earlier prose as logographers can be studied through UG course, which gives an idea of the origin of the historical writing.

CO.4- The Ideology behind the idea of *Bharatbarsha* can be traced through studying history, the ideas engulfed with the recent historiographical works of many historians.

CO.5- The empirical researches on historical events widening the scope of knowledge and also produces the scope before students to become a historian.

CO.6- Students of History after graduation can apply for MA in Archaeology or Musiology and do get some jobs in Museums or ASI etc.

CO.7- History as a subject predominantly occupies greater scopes for jobs. It has been one of the major areas that could be use in spreading the ideas of the history of a nation to other countries; therefore students who had undergone historical study can take part to the mission of transnational activities between two countries.

CO.8- Historical studies are meant to develop a chronological order of the past events. It also discusses various aspects of the human life, such as the culture, economy, people, their languages, etc, it helps the students in their grooming.

CO.9- Through academic excursion in historical places, the students are benefited and enriched about our Indian cultures and politics of the past.

Learning Goals and Outcomes

Student Learning Outcomes (SLOs) for the Economics Core Courses

The Economics Department offers the syllabus according to Vidyasagar University – Introductory Macroeconomics and Introductory Microeconomics. Along with acquiring content

knowledge, students in each course will practice critical thinking skills, communication skills, quantitative reasoning, and economic citizenry.

Introductory Macroeconomics

1. Students will be able to explain the concepts of opportunity cost, trade-offs, and the benefits of exchange.
2. Students will be able to demonstrate knowledge of the laws of supply and demand and equilibrium; and apply the supply and demand model to analyze responses of markets to external events.
3. Students will be able to explain the concepts of gross domestic product, inflation and unemployment, and how they are measured.
4. Students will be able to explain the circular flow model and use the concepts of aggregate demand and aggregate supply to analyze the response of the economy to disturbances.
5. Students will be able to describe the determinants of the demand for money, the supply of money and interest rates and the role of financial institutions in the economy.
6. Students will be able to define fiscal and monetary policies and how these affect the economy.
7. Students will be able to identify the causes of prosperity, growth, and economic change over time and explain the mechanisms through which these causes operate in the economy.

Introductory Microeconomics

1. Students will be able to explain the concepts of opportunity cost.
2. Students will be able to demonstrate knowledge of the laws of supply and demand and equilibrium; and apply the supply and demand model to analyze responses of markets to external events.
3. By the end of the course, students will be able to apply supply and demand analysis to examine the impact of government regulation.
4. By the end of the course, students will be able to explain and calculate price elasticity of demand and other elasticities.
5. By the end of the course, students will be able to demonstrate an understanding of producer choice, including cost and break-even analysis.
6. By the end of the course, students will be able to compare and contrast common market structures, including perfect competition and monopoly.
7. By the end of the course, students will be able to apply microeconomic principles and models to define and address market failures; and to describe issues such as wage inequality, environmental protection or other policy matters.

Student Learning Goals and Outcomes for the BA/B.Sc in Economics

The BA/B.Sc in Economics includes a set of core classes (Intermediate Microeconomic Theory, Intermediate Macroeconomic Theory, and Introductory Statistics and Econometrics.) beyond the introductory courses. These courses provide the foundational skills that our majors require in terms of the theoretical and empirical aspects of the discipline, Consumer Theory, Competitive Equilibrium, Statistical Methods for Economics-Descriptive Statistics, Univariate Probability, Distribution, Jointly Distributed Random Variables, Sampling, Index Number, and Estimation, Data Analysis, Contemporary Economic Issues, Economic Survey, Understanding Union ,Budget, Environmental Economics, The Design and Implementation of Environmental Policy, Environmental Valuation Methods and Applications, Sustainable Development, Money and Banking, Interest Rates, Banking System, Central Banking and Monetary Policy, Mathematical Methods in Economics, Statistics with Computer Applications and Field Survey Based Project Work etc.

Outside of these core courses, students must also complete eighteen hours of upper level electives (fifteen credit hours of 300-level electives and at least one 400-level elective course). Electives are varied and offered on a rotating basis. See the “Information of Undergraduates” link to see the recommended sequence of courses depending on your specific interests!

A. Theory

A.1. Students will be able to explain, graph, and analyze key economics models.

B. Institutional Context

B.1. Students will be able to analyze the economics and institutional arrangements of specific regions, countries, organizations, localities, industries or firms.

C. Data Analysis

C.1. Students will be able to generate and interpret summary statistics and regression models.
C.2. Students will be able to identify data sources, describe appropriate empirical tools, and perform research on data they retrieve from original surveys, or official and industry sources.

D. Critical Thinking

D.1. Students will be able to evaluate economic issues and public policy by using economic models or data analysis while identifying underlying assumptions of the model(s) and limitations

E. Communication

E.1. Students will be able to effectively communicate economic ideas.

F. Economic Citizenship

F.1. Students will be able to formulate informed opinions on policy issues and recognize the validity of opposing viewpoints.

Mission and Student Learning Outcomes of the department of Political science

Mission

The Department of Political Science of Mugberia Gangadhar Mahavidyalaya under Vidyasagar University follows the syllabus which according to Vidyasagar University and that syllabus offers diverse and flexible curriculum designed to help students prepare for meaningful careers in politics, government administration, public service, law, journalism, teaching and other related areas. Students also participate in different seminars and/or different programs like foundation course on Human Rights appropriate to their career goals and interests.

Student Learning Outcomes

Political Science Outcome No. 1 : Knowledge of the Field -- Concepts, Theories, and Methods

- Students learn the defining concepts and theories political scientists use to study and explain political phenomena in the discipline.
- Students learn about the methods and tools political scientists use to make and substantiate their claims to know.

By situating political phenomena in a broader social, economic, cultural, and historical context political science students learn that political science is inherently interdisciplinary. Students in political science learn and apply concepts, theories and methods from political science and other disciplines to understand and explain complex social and political phenomena.

Political Science Outcome No. 2 : Writing -- Academic Writing and Information Literacy

- Students learn to effectively use argument and to communicate claims to know in academic writing appropriate for the discipline like Wall Magazine.
- Students learn to evaluate and use evidence to support empirical claims to know in writing.

Through the careful reading of texts and the analysis of argument and evidence, students will develop the skills necessary to clearly, thoughtfully, and persuasively communicate in writing. Students will develop and practice these skills throughout the curriculum.

Political Science Outcome No. 3 : Critical Thinking

- Students learn to apply learned concepts, theories, and methods, as well as their mastery of argument and evidence to produce and communicate original research which analyzes and explains relevant political phenomena -- in both writing and orally.

Political Science Outcome No. 4 : Students successfully completing a specialization in the study of world politics will:

- Be able to describe and explain political theory, political systems around the world, and politics in the international arena,
- Understand the fundamental concepts, issues, and theories central to comparative politics and international relations, and
- Be able to explain the similarities and differences between various types of polities and how they affect their behavior.
- Be able to know their political heritage, freedom struggle against imperial oppression, their rights and duties as citizen , etc.

Note: Politics is not a spectator sport but a human activity that is best understood by bringing theory and practice together through experience and application.

Dept of Sanskrit

Program Outcomes

- PO-1 Sanskrit is the mother of all languages. This subject has been teaching throughout India. Without Sanskrit we cannot learn our mother language properly. After completing graduation student will acquire the knowledge about Vedic grammars, Vedic Mantras and proper pronunciation of Sanskrit language. Now a day's violence is increasing every day. Learning of Sanskrit Education is helping them to realizing himself who am I? Where I come to this world? Where I shall have to go after my death? What is my real duty in this world? Such type of answers we are getting from Sanskrit texts. So our moral activities are increasing through this text.
- PO-2 Students are getting their job opportunity throughout India by learning this oriental language. This student are getting regarding sufficient knowledge of Dharmasastra, Arthosasthra, prose, poetry, drama, Veda, Uponisad, Indian philosophy and moral science etc.

PO-3 They are learning from Srimad Bhagabad Gita what we have to eat to keep our good health and mind. They are also taking their education regarding travel, sleep, food and also all types of performing duty from Srimad Bhagabad Gita.

PO-4 Girls students get sufficient knowledge from Abhijnyana Sakuntalam how they will perform their duty after their marriage and how they will take care of their child.

Course Outcomes:

Course: 1

CO 01. The student will be able to achieve regarding Sanskrit grammar by which they can write and speak pure Sanskrit.

CO 02. From Bhattikavyam student gets knowledge regarding the Ramayan Age civilization and the activities of Ramachandra to maintain their good family life.

CO 03. From Chandra sastra students are learning how we have to utter and compose a Sanskrit slokas by various chandos.

Course: 2

CO 04. From Abhijnyana-Sakuntalam students get knowledge about how a lady has to perform her duty by which she will be a good house wife. Such type of moral education she gets from Abhijnyana Sakuntalam and also which type of service is needed to our guest.

Course: 3

CO 05. After reading the text like Kadamvari, Kiratarjuniyam, Raghuvamsham, and Shishupalbadham they will get appropriate knowledge of their moral duty to live peacefully in this society and how we have to protest against corruption.

Course: 4.

CO 06. In paper 4th we get the texts like Kavyalankarasutrabrutti, sahyadarpanam, sanskritasahityasyetihasa etc. from these books students have to learn about the types of kavya and alamkar, guna etc. Lakshan of male and female is detected in sahyta darpan. From our vedic period to till now the writers of Sanskrit literature and their achievements are discussed here.

Course: 5.

CO 07. In paper 5th we gain a clear picture about Vaidic Sanhita, Isopanisad, Vaidic Vyakaran, Vaidic Sahityasyetihasa. We get more knowledge about Brahman, Aranyak, Uponisad from Vaidic Sanhita. From Isopanisad we get vast knowledge about Brahma or God who is the creator of this

world and who is called Omnipotent, omnipresent and almighty to all creatures. In this book we have seen about Atma, Vidya, Avidya, Sambhuti, Asambhuti etc. and the vital role of sun for everything of the world.

Course: 6.

CO 07. In paper 6th the definition of Karak, Samas and Vasatattwa are taught which are the basis of Sanskrit language.

Course: 7.

CO 08. In paper 7th Manusamhita, Yajnavalkyasamhita, Arthasastra, Dharmasastrasyetihasa these books are very essential to every student for their economical, social, moral, political thoughts.

Course: 8.

CO 09. In paper 8th the books of Tarkasamgraha, Brhadaranyakotaniasada, Srimadbhagavadgita, Bharatiya Darshan, students get a vast knowledge about Nyaya philosophy of Anambhatta, the character of Padartha, Dravya, Guna, Karma, Abava, Karana, Hetwabhasa etc. In Brhadaranyakotaniasada we found the existence of super soul and its activities to human being. In Srimadbhagavadgita we observe what we have to perform in this world to become a good human being and how we have to fight against dishonesty. In Indian philosophy we get profound knowledge of all Astik and Nastik darshans.

Course Outcome Department of Philosophy (Honours)

- Students learn net surfing in order to get acquainted with different new writing materials.
- They learn how to access books in e-library.
- Also learn to prepare essay type answers by consulting several books on the topic.
- They attend and participate in Departmental seminars thereby preparing themselves for seminar presentations.
- Participate in debate and quiz related to Honours subject and thus develop their power in comparative studies.
- Participate in group discussions in order to enhance their capacity to compete in job oriented courses.
- Psychology is a part of Honours Course – they develop their choice for building up career as psychological counselor

Course Outcome Department of Philosophy General Course

- Students learn net surfing in order to get acquainted with different new writing materials.
- Learn how to access books in e-library.
- Learn to prepare essay type answers by consulting several books on the topic.
- Psychology is a part of General Course – they develop their choice for building up career as

✓ psychological counselor.