

# Swami Vivekananda Mahavidyalaya

Mohanpur, Tripura

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## **DEPARTMENT OF BENGALI**

After successful completion of the three years B.A. (Honours) degree program in Bengali, students should be able to achieve the following outcomes:

### **PROGRAM OUTCOME**

Bengali as a distinct language has its roots in Sanskrit. Bengali literature is emblematic of Indian literature as a whole through the success of its poets, scholars, essayists and novelists in both India and abroad. It has combined the rich traditional Bengali Indian culture, the good and positive ideas of western culture peacefully and intelligently. Medieval Bengali literature is also one of the richest of the subcontinent. The entire history of Bengali literature indicates the evolution of a society resplendent in the human aspect and the finer senses. A robust and dynamic literature lends support to the vibrant tradition of performance in Bengali, primarily theatre, music and cinema.

### **PROGRAM SPECIFIC OUTCOMES**

1. Develop a strong concept of linguistics, history of early, medieval and modern Bengali literature. The students should possess the fundamental knowledge of Bengali Chhanda-Alongkar, Bengali fiction, essay, prose literature, Bengali critical literature, literary forms & genres and Bengali fiction also.
2. Students are able to transfer and apply the acquired concepts and principles to study different branches of Bengali literature that is fiction, short story, easy and poetry.
3. Understand the principles and application of classification of Drama, Novels, and Poetry. Develop a conception of aesthetic sense and understand the interdisciplinary approach.

### **COURSE OUTCOMES**

## **HONOURS COURSE :**

**1<sup>ST</sup> SEMESTER :**Students can Develop ideas on History of Bengali literature (early & middle era),& poetry (‘Baishanb Padabali’, Shakta Padabali & Chandimangal).

**2<sup>ND</sup> SEMESTER :** Develop ideas on History of Bengali literature (Modern era) &Analyse Bengali chhanda & alonkar.

**3<sup>RD</sup> SEMESTER :**Develop ideas on poems of middle & modern era ( ‘Ramayan’, Birangana, Saradamangal & Banalata Sen’).

**4<sup>TH</sup> SEMESTER :**Knowledge of essays and literary forms & genres.

**5<sup>TH</sup> SEMESTER :**Develop ideas on History of Bengali linguistics, Drama, Novel & Short story.

**6<sup>TH</sup> SEMESTER :** Increase conception of Bengali Critical literature & Rabindra sahitya.

## **GENERAL COURSE :**

**1<sup>ST</sup> SEMESTER :**Students candevlop ideas on History of Bengali literature (early, middle & Modern era),& poetry (‘Baishanb Padabali’ & ‘Meghnadbadh’ ).

**2<sup>ND</sup> SEMESTER :**Students can demonstrate knowledge of selected fiction that is ‘Chandrashekhar’, ‘Padma Nadir Majhi’. They will to acquire knowledge on short story & essays also.

**3<sup>RD</sup> SEMESTER :**develop ideas on Bengali drama, poetry & Novel.

**4<sup>TH</sup> SEMESTER :**Students gains knowledge of literary forms, genres & prose literature.

**5<sup>TH</sup> SEMESTER :**Analyse Bengali chhanda & alonkar and develop ideas on Bengali poetry.

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## **UNDER GRADUATE PROGRAMME SPECIFIC OUTCOMES:**

**B.A. (ENGLISH):**

The various forms of literature and language incorporated in the curriculum of the Under Graduate programme provides learners with learning experiences and enable them to appreciate and enjoy the literatures like short stories, poems, dramas and novels with enthusiasm. The learners also gain various language learning skills and instills effective communicational efficiency in them. After completion of the programme the learners will be able to :

- Classify the various forms of literatures.
- Be aware about Culture, History and Text.
- Recognize the role of literature in social change.
- Be aware of the various cultural issues addressed in literature.
- Distinguish the different genres of literature –poetry, drama, prose, novels, fictional and nonfictional literatures.
- Gain a language learning skills such as Listening, Speaking, Reading and Writing (LSRW).
- Enhance their vocabulary skills.
- Develop imaginative and creative/artistic abilities.
- Understand the structure and function of grammatical units.
- Grasp the different levels of language- semantic, syntactic, phonology, and morphology.
- Use English effectively both in formal and informal situations.
- Enrich confidence to appear in any competitive examinations.

## **COURSE OUTCOMES:**

On completion of the course students will be able to:

- Gain knowledge of the historical background of the origin of literature.
- Comprehend the various forms of literature.
- Categorize the genre of poetry, novel and short story.
- Develop the ability to appreciate ideas and think critically.
- Familiar with form and styles of different literary types.
- Describe the literary influence on the social and political history of each period.
- Define and interpret the various literary types.
- Be familiar with various types of novels.
- Explain the texts from contemporary's view points.
- Gather knowledge about the process of beginning and growth of English language.
- Grasp the different linguistics elements of English .

## **UNDER GRADUATE PROGRAMME SPECIFIC OUTCOMES:**

### **B.A. (KOKBOROK):**

The various forms of literature and language incorporated in the curriculum of the Under Graduate programme provides learners with learning experiences and enable them to appreciate and enjoy the literatures like short stories, poems, dramas and novels with enthusiasm .And after completion of the programme the learners will be able to :

- Classify the various forms of literatures.

- Be aware about Culture, History and Text.
- Recognize the role of literature in social change.
- Be aware of the various cultural issues addressed in literature.
- Distinguish the different genres of literature –poetry, drama, prose, novels, fictional and nonfictional literatures.
- Gain a language learning skills such as Listening, Speaking, Reading and Writing (LSRW).
- Enhance their vocabulary skills.
- Develop imaginative and creative/artistic abilities.
- Understand the structure and function of grammatical units.
- Grasp the different levels of language- semantic, syntactic, phonology, and morphology.
- Use Kokborok effectively both in formal and informal situations.

### **COURSE OUTCOMES:**

On completion of the course students will be able to:

- Gain knowledge of the historical background of the origin of literature.
- Comprehend the various forms of literature.
- Acquaint with different writers/authors.
- Categorize the genre of poetry, novel and short story.
- Develop the ability to appreciate ideas and think critically.
- Familiar with form and styles of different literary types.
- Describe the literary influence on the social and political history of each period.
- Define and interpret the various literary types.
- Be familiar with various types of novels.

- Explain the texts from contemporary's view points.
- Gather knowledge about the process of beginning and growth of Kokborok language.
- Grasp the different linguistics elements of Kokborok.

Department of Political Science  
Swami Vivekananda Mahavidyalaya  
Mohanpur, Tripura

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**PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES, COURSE OUTCOMES**

Program Outcome	Political Science provides learners with knowledge and skills needed to prepare for a professional career as a teacher, administrator, political scientists, lawyers etc. It also provides ground knowledge about the basics of political education (it gives political training). It trains about the politics and government at local, state, national and global levels.
Program Specific Outcome	<ol style="list-style-type: none"> <li>1. Understanding of government institutions, electoral processes, and policies in a variety of countries around the world and the ability to compare the effectiveness or impact of various political arrangements across countries.</li> <li>2. Knowledge of some of the philosophical underpinnings of modern politics and government and the legal principles by which political disputes are often settled.</li> </ol>

	<p>3.Understand the changes in patterns of political behaviour, ideas and structures.</p> <p>4.Assess how global, national and regional conflict and development affect polity and society.</p> <p>5.Develop the ability to make logical inferences about social and political issues on the basis of comparative and historical knowledge.</p> <p>6.Knowledge of key theories and concepts, historical developments, organizations, and modern issues in international relations .</p>
Course: BA(Honours) in POLITICAL SCIENCE	Course Outcomes
Political Theory-I	<p>1.To understand the nature, scope and significance of political theory.2.To appreciate the procedure of different theoretical ideas in political theory.</p> <p>3.To understand the various traditional and modern theories of political science.</p> <p>4.To evaluate the theories of origin of the state.</p>
Western Political Thought-II	<p>1.It enables the students to learn the ideas of greatWestern Political Thinkers of ancient as well as modern period. To understand the concept of Communitarianism, Liberalism etc. To introduce the students to the Greek political tradition, specifically to the ideas of Plato and Aristotle.</p>

	<p>2.To explain the ideas of medieval and early modern political thinkers like St. Augustine and Machiavelli. oTo familiarise the students with the exponents of the Social Contract Theory- Hobbes, Locke and Rousseau.</p> <p>3.To help the students to develop and elaborate understanding of Marxian political thought.</p> <p>4. To introduce the students to the most contemporary ideologies like- neo liberalism, feminism, religious fundamentalism and multiculturalism.</p>
<p>Indian Government &amp;politics-III</p>	<p>1.To understand the philosophy of Indian constitutions.</p> <p>2.Introducing the Indian Constitution with a focus on the evolution of it and examining the essence of the Preamble.</p> <p>3.To know the salient features of Indian constitution</p> <p>4.Examining the Fundamental Rights and Duties of Indian citizens with a study of thesignificance and status of Directive Principles.</p> <p>5.Critically analyzing the important institutions of the Indian Union: the Executive: President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha, Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Court:composition and functions- Judicial Activism.</p> <p>6.Looking at the Centre-State Relations with focus on the Legislative, Administrative and Financial Relations.</p>



	<p>7. Critically evaluating the Indian Party system – its development and looking at the ideology of dominant national parties.</p> <p>o Evaluating the Electoral Process in India with focus on the Election Commission: Composition, Functions and Role.</p> <p>8. Investigating the challenges to National Integration: Regionalism and Casteism, issues related to women.</p>
Public Administration-IV	<p>1. It helps to understand about Organization, mode, structure of Civil Service and also enables the Students to have knowledge about Budget preparation and Execution.</p> <p>2. It helps to understand about the scientific knowledge of Management and improves the decision making ability of the students, develop leadership qualities and improve communication skills.</p> <p>3. The paper shall also deal with the primary administrative theories and the basic principles of organisation which will help the students to develop a comprehensive understanding of the subjects.</p>
Indian Political Thought-V	<p>1. The paper shall introduce the most prominent Indian Political Thinkers like Manu, Kautilya, Raja Ram Mohan Roy and Swami Vivekananda .</p> <p>2. It shall also explain the ideas of M N Roy, Mahatma Gandhi, Jawaharlal Nehru, B R Ambedkar and J P Narayan.</p> <p>3. The basic objective of the paper is to help the students to develop a comprehensive understanding of the basics of Indian political thought.</p>

	<p>4.It enables the students to learn the ideas of great Indian and Western Political Thinkers of ancient as well as modern period. To understand the concept of Communitarianism, Liberalism etc.</p>
<p>Comparative Government&amp;Politics-VI</p>	<ol style="list-style-type: none"> <li>1.To understand the comparative analysis of various government or political system of the countries like USA, UK, China,Switzerland and France.</li> <li>2.It helps them to critically analyses about the advantages and disadvantages of that political system with Indian political system.</li> <li>3.To introduce the constitution of United Kingdom- British political system and the British political traditions.</li> <li>4.To introduce the constitution of United State of America, it's Federal system, presidential form of government and political parties and interest groups.</li> <li>5.To help the students make a comparative study of the constitutions of United Kingdom and United States of America.</li> <li>6.To introduce the students to the constitution of the People's Republic of China- their political processes, party system and institutions.</li> <li>7.To explain the constitution of Switzerland- the Swiss political tradition, Swiss federalism, their pattern of democracy and their political parties and interest groups.</li> </ol>

<p>International Relations- VII</p>	<ol style="list-style-type: none"> <li>1.The students will get an overview about the nature, evolution and scope of international relations.</li> <li>2.It will help them to get acquainted with the basic ideas of international relations oIt will familiarise the students with the different approaches to the study of International Relations.</li> <li>3.It will also give them a historical background of the discipline which will help them understand international politics in a better way.</li> <li>4.It enables the students to understand about the various issues of International Relations like global terrorism, issues between India and different neighboring countries like Pakistanand China.</li> <li>5.It also gives knowledge about various other aspects like New International /Economic Order and Studies about Global Organizations like UNO,WTO,IMF,OPEC. It helps the students to analyze all those issues critically and to understand significance of World Peace.</li> </ol>
<p>Political Sociology-VIII</p>	<ol style="list-style-type: none"> <li>1.This paper shall help the students to understand and defined the concepts of sociology and shall also brief them about the historical evolution of the same.</li> <li>2.It shall explain the different methods of sociological study to the students.</li> <li>3.It shall elaborate in depth about the basic concepts of sociology- like- Family, Society and Community. It shall introduce the students to the ideas of socio stratification, socio class and</li> </ol>

concepts of gender.
4.To explain the historical of the discipline of Political Sociology and to familiarise the students with the definition, nature, subject-matter and utility of the same.
5.To elaborate on the primary concepts of- political culture, socialisation and political mobility.

SWAMI VIVEKANANDA MAHAVIDYALAYA  
MOHANPUR  
DEPARTMENT OF HISTORY

Programme Outcome:

Graduate-level historians can be well-prepared to teach in secondary and higher education. More than one in five historians work in the education field. Apart from teaching. Masters-level history graduates can pursue lucrative careers as researchers, archivists, or museum curators. These professionals use their graduate degrees to authenticate historical artifacts, organize historical information, and design collections and exhibits. Those with a Master of Arts in History degree who choose to work in a history-related field safeguard and pass on knowledge from the past so future generations can benefit from their efforts.

Specific Programme Outcome:

Graduate-level history students learn to write and publish their findings using the appropriate academic styles, resources, and processes. Often, they present their work to wider audiences at conferences, in classrooms, and in the media. They must be prepared not only for public speaking but also for public questioning. Most masters-level history degree programs encourage lively debate among students, who learn to value a diversity of perspectives and thoughts. Good writing and presentation skills are complementary to public speaking ability, as organizations often use multiple channels to communicate their messages to

internal and external audiences. To expand their capacity for producing optimal oral and written presentations, graduate students learn how to evaluate multiple perspectives of an event and steer away from narrow interpretations. Masters-level history coursework teaches them how to present their findings in the most engaging, yet informative ways possible. This means learning how to articulate their ideas clearly whether they are speaking in-person, sharing content online, or distributing their message through other media platforms. Upon mastering this skill, history professionals should have the capacity to package and present information clearly to any audience, regardless of whether they are working in a history-related profession.

#### Course Outcome:

Students will distinguish between primary and secondary sources and identify and evaluate evidence. Students will demonstrate in discussion and written work their understanding of different peoples and cultures in past environments and of how those cultures changed over the **course** of the centuries. The benefits of a history degree can be numerous. Through a Master of Arts in History program, individuals can hone in-demand skills, such analysis, research, communication, and problem-solving, and prepare themselves for a variety of lucrative careers, either in history or in other disciplines.

SWAMI VIVEKANANDA MAHAVIDYALAYA  
MOHANPUR  
DEPARTMENT OF Education

**PROGRAM OUTCOMES---**This course helps students to pursue their careers in the field of teaching. It also equips students with professional skills, much needed for changing technological needs and global concerns. It also helps to build right attitude, values needed for teaching profession.

**SPECIFIC PROGRAM OUTCOME--**It instills a sense of critical thinking, social awareness and teaches humanitarian values and ethics to students on a psychological and philosophical perspective so that they can become citizens with a critical and scientific mindset. This will help them become competent individuals in the future. It develops skills in students who can be leaders and agents of social change and transformation in society.

**COURSE OUTCOMES--**This course will enable students to engage with Indian society, education policy frameworks for public education in contemporary India and enable them to shape their perspectives to act as an effective teacher. This course also helps

an understanding of various stages and theories of human development, mental health, hygiene, classroom management and various illnesses related to adolescents.

## DEPARTMENT OF Zoology

Program Specific Outcomes: PSO of B. Sc., Zoology Demonstrated a broad understood of animal diversity, including knowledge of the— scientific classification and evolutionary relationships of major groups of animals. Recognized the relationships between structure and functions at different levels of— biological organization (e.g., molecules, cells, organs, organisms, populations, and species) for the major groups of animals. Characterized the biological, chemical, and physical features of environments (e.g.,— terrestrial, freshwater, marine, host) that animals inhabit. Explained how animals function and interact with respect to biological, chemical and physical processes in natural and impacted environments. Explained how organisms function at the level of the gene, genome, cell, tissue, organ— and organ-system. Drawing upon this knowledge, they are able to give specific examples of the physiological adaptations, development, reproduction and behavior of different forms of life. Understood the applied biological sciences or economic Zoology such as sericulture,— Apiculture, aquaculture, Industrial microbiology, rDNA technology and medicine for their career opportunities.

COURSE OUTCOMES B.SC., ZOOLOGY COURSE OUTCOMES: BIODIVERSITY OF INVERTEBRATE- I Came to knowing the basic concept of biosystematics and procedure in taxonomy.— Identified the taxonomic status of the entire non-chordates up to annalids and discuss the— evolutionary model of the group. Described the general biology of few selected non-chordates useful to mankind.— Know about some of the important and common protozoans, helminthes of parasitic— nature causing diseases in human beings. Understood the importance of metamerism in annelids.—

COURSE OUTCOMES: BIODIVERSITY OF INVERTEBRATE- II Understood the diversity and classification and functional aspects of different systems— of phylum Arthropoda, Mollusca and Echinodermata. Described the social life and economic importance of insects.— Understood the physiology of pearl formation and pearl oyster formation.— Described the advanced characteristic features of cephalopod molluscs.— Came to know that the resemblance and evolutionary significance of larval forms of— echinoderms.

COURSE OUTCOMES: LAB - BIODIVERSITY OF INVERTEBRATE- I&II Understood the anatomy and physiology of invertebrate animals by dissection.— Described the structural study and mounding of organs.— Came to knowing the rules of taxonomy and the principle of animal classification.— Understood the diversity morphology, biological characters and taxonomical— importance some selected museum specimens of different animal groups. Came to know that internal skeletons and osteology of different bone structures.—

**COURSE OUTCOMES: BIODIVERSITY OF CHORDATES** Identified the taxonomic status of the entire chordates and discussed the evolutionary model of the group. Imparted the knowledge on ecology of some important fishes, amphibians reptiles, birds and mammals. Impart knowledge in comparative anatomy and development systems of chordates. Make able to discuss some and very important phenomena in Chordates. Know about the conservation and management strategies of the chordate fauna.

**COURSE OUTCOMES - CELL BIOLOGY AND INSTRUMENTATION** Understood the structure of cells and cell organelles in relation to the functional aspects and understanding of the working principles and applications of microscopes. Described the composition of prokaryotic and eukaryotic cells. Understood the structure and functions of chromosome; mitotic and meiotic cell divisions and their significance. Understood the properties and treatment of cancer cells. Described the principle and applications of pH meter, centrifuge, chromatography and electrophoresis.

**COURSE OUTCOMES - DEVELOPMENTAL BIOLOGY AND EVOLUTION** Understood the process of development of animals. Understood the process of organogenesis of selected organs, development of extra-embryonic membrane and the nature and physiology of placenta. Came to know the inducer and inductor role in embryogenesis and knowledge about metamorphosis and the process of regeneration. Understood the theories of evolution and highlighted the role of evidences in support of evolution. Described the evolutionary knowledge through the concepts of coloration and mimicry.

**COURSE OUTCOMES LAB - CELL BIOLOGY AND DEVELOPMENTAL BIOLOGY** Acquired knowledge of principles and working mechanisms of microscopes. Understood the mechanism of mitosis and meiosis. Gained slide preparation to observe of Giant chromosome, epithelial and blood cells. Understood the concept of chromatography and finding Rf values of different compounds. Preparation, direct observation and appreciation of sperm motility and different stages of chick embryo development and placentation of animals.

**COURSE OUTCOMES - GENETIC AND MOLECULAR BIOLOGY** Understood the theories of classical genetics and blood group inheritance in man. Described the genetic variation through linkage and crossing over, chromosomal aberrations and sex determination. Understood the genetic defects and inborn errors of metabolism and genetic counseling and role of inbreeding and outbreeding. Understood the molecular structure of genetic materials and understood the mechanism of gene expression and regulation character formation.

**COURSE OUTCOMES LAB - EVOLUTION, GENETICS AND MOLECULAR BIOLOGY** Obtained the knowledge about direct observation of fossils and evolutionary important specimen by which evolutionary relationship of animal groups. Understood the inheritance of mendelian traits by direct observation among students. Acquired knowledge skill

development and observation of blood group identification and pedigree chart preparations Understood of the mechanism of phenotypic expression in *Drosophila*. Gained genetic knowledge on the observation of specimens and models.

**COURSE OUTCOMES - ANIMAL PHYSIOLOGY** Understood about the composition of food and mechanism of digestion absorption and assimilation. Attained knowledge of respiration and excretion and understood the mechanism of transport of gases and urine formation. Described the mechanism of circulation and composition of blood Knowledge of neuromuscular coordination and the mechanism of osmoregulation in animals and endocrine system and their function is attained. Understood the menstrual cycle and the role of contraceptive in population control.

**COURSE OUTCOMES - BIOCHEMISTRY** Comprehended the energy source, chemical bonds and the principles of thermodynamic understood the importance of acid base balance Attained the knowledge of macromolecule such as carbohydrates, protein and fat, their types and significance. Understood the knowledge of cholesterol and its biological significance Described the enzymes, mechanism of enzyme action and factors affecting the enzyme activity Understood the types and importance of vitamins

**COURSE OUTCOMES - FISHERY BIOLOGY** Described the fisheries and fishery industries Understood the various types and methods of aquaculture practices. Understood the physiology and reproductive mechanisms of important fishes. Understood the modern techniques and methods of fishery industries. Attained knowledge about important cultivable fin fishes, shell fishes and importance of value added fishery products

**COURSE OUTCOMES- SERICULTURE** Described Taxonomy, Morphological sex differences in larva and adult. Understood the culture of mulberry plants Came to know about the culture methods of *B.mori* and mulberry silk Described the diseases and pests of *B.mori*. Studied the quality of silk, silk gland and marketing strategies of silk.

**COURSE OUTCOMES – LAB - ANIMAL PHYSIOLOGY, BIOCHEMISTRY, FISHERY BIOLOGY AND SERICULTURE** Attained knowledge of qualitative analysis of macromolecules, excretory products, blood glucose and cholesterol. Understood the enzyme reaction and influence of temperature on enzyme action. Skill development for the observation of blood cells and haemin crystals. Understood the working principle and applications of physiological instruments. Attained knowledge on the observation of preserved specimens and instruments of sericulture and fisheries.

**COURSE OUTCOMES - FUNDAMENTALS OF BIOTECHNOLOGY** Attained knowledge the history, branches and scope of biotechnology and gene transfer technique. Understood the recombinant technology, gene integration into the vector and with host genome and creation of transgenic animals. Attained knowledge about in-vitro fertilization and embryo transfer



Understood the principle and applications of biotechnology techniques – DNA fingerprinting, plotting technique micro array. Described the applications stem cells and gene therapy and biotechnology devices

**COURSE OUTCOMES - ENVIRONMENTAL BIOLOGY AND BIOSTATISTICS** Understood and appreciate the environment and ecological services of life on earth. Understood the abiotic factors of environment and biogeochemical cycle and intraspecific relationships of animals. Acquired knowledge of ecosystem, food chain, energy flow and productivity and understood pond as a model ecosystem Imparted knowledge of habitat ecology, pollution and bioremediation of polluted environment Attained knowledge of data collection, tabulation and presentation of data and measures of central tendency, probability and Chi-square test.

**COURSE OUTCOMES - RECOMBINANT DNA TECHNOLOGY** Described the knowledge of recombinant DNA technology Understood the tools of gene manipulation and gene transfer Knowledge of construction and labeling of molecular probe, construction of genomic library and protein engineering. Understood the techniques of recombinant DNA technology and its applications Came to know about the techniques and applications of human genome projects.

**COURSE OUTCOMES - FUNDAMENTALS OF BIOTECHNOLOGY, ENVIRONMENTAL BIOLOGY AND BIOSTATISTICS AND RECOMBINANT DNA TECHNOLOGY** Got knowledge of sterilization technique, blotting technique, DNA isolation from cells Understood the techniques of differentiation of haemolymph and blood Observed of preserved specimens and instruments Comprehended the physico-chemical nature of water through estimation of its chemical compounds. Understood the nature and functional aspects of intraspecific association of animal

## **OF HUMAN PHYSIOLOGY SWAMI VIVEKANANDA MAHAVIDYALAYA, MOHANPUR**

### **Course Outcomes**

1. to provide a course of study in mammalian, principally human, systems physiology, building on knowledge of basic physiological principles established in the course;
2. to expand on some areas touched on in Higher Secondary level ( Human Physiology and to introduce new and more complex physiological functions);
3. to develop further practical biological skills introduced in the Human Physiology syllabus;

4. to prepare students for a number of Master Degree Courses viz., Natural Science courses, principally Human Physiology, Development & Neuroscience, but also Biotechnology, Molecular Biology, Sports Physiology and Ergonomics, Genetics, Immunology and Biochemistry among others.

## Programme Outcomes

At the end of the course students should:

1. have an enhanced knowledge and appreciation of Human physiology;
2. understand the functions of important physiological systems including the cardio-respiratory, digestive, circulatory, renal, endocrine, Nervous, reproductive and metabolic systems;
3. understand how these separate systems interact to yield integrated physiological responses to challenges such as exercise, fasting and ascent to high altitude, and how they can sometimes fail;
4. be able to perform, analyse and report on experiments and observations in physiology;
5. be able to recognise and identify principal Cell and tissue structures, basic clinical problems related to different body organs and organ systems, nutritional need of human beings as per the standard RDA.
6. Understanding of Human physiology and allied subjects like Biochemistry, Basic Anatomy, Histology, Nutrition and dietetics, Sports Physiology and Ergonomics, Molecular Biology, Genetics, Microbiology, Biotechnology, Immunology, Biostatistics, Epidemiology and Research methodology.

## Programme Specific Outcomes

### Honours Course

<b>Unit-I:</b> Structural Units of Human System	<b>Structure and function of cell and its organelles, modern concept of cell membrane and transport mechanism through cell membrane, cytoskeleton, concept of cell cycle and its regulation, concept of apoptosis and necrosis. Overview of musculo-skeletal system, Bone structure, types, concept of osteoporosis and arthritis.</b>
<b>Unit- II:</b> Biophysical & Biochemical Principles	<b>Understanding of Bio-physical processes like Osmosis, diffusion, viscosity, ultra-filtration and their physiological significance. Concept of homeostasis, Donnan membrane equilibrium its relation with osmotic pressure and pH , Biological significance of Donnan membrane equilibrium. Concept of Acid, base, buffers – biological significance, Understanding of Henderson-Hasselbalch Equation and related to numerical related to pH .</b>
<b>Unit-III:</b> Blood, other Body	<b>General understanding of blood and other body fluids, plasma</b>

Fluids & Clinical Hematology	<b>protein types and function, haemopoietic system, concept of erythropoiesis, leucopoiesis and thrombopoiesis, concept of blood volume –factors effecting, General understanding of haemostasis and concept of clinical haematology.</b>
<b>Unit-IV:</b> Biochemistry & Enzymology	<b>Basic understanding of carbohydrate, protein and fat, Concept of enzymology and understanding of enzymatic mechanism, enzyme regulation. Allosteric enzyme regulation, covalent modification, km value, Effect of pH and temperature.</b>
<b>Unit-V :</b> Physiology of excitable cells	<b>Basic understanding on nerve and muscle physiology, properties of nerve, mechanism of impulse transmission, concept and understanding of synapse, neuromuscular junction, reflex action and muscle contraction.</b>
<b>Unit- VI :</b> Cardio-vascular system	<b>Understanding of structure of heart, its functioning, blood pressure and its regulation, basic concept on haemorrhage and cardiac diseases.</b>
<b>Unit- VII:</b> Metabolic Biochemistry and Molecular Respiration	<b>Basic understanding of different metabolic pathways and their regulations, organization of electron transport chain and mechanism of ATP formation by oxidative phosphorylation</b>
<b>Unit- VIII:</b> Digestive system and nutrition	<b>Understanding of digestive system, their anatomy, histology and physiology, disorders of digestive systems. Understanding of general concepts on nutrition, RDA, SDA, methods of diet survey, formulations of balanced diet for different age-groups and activity status, Malnutritional disorders .</b>
<b>UNIT-IX :</b> Respiratory and Aviation Physiology	<b>Understanding of Respiratory physiology, disorders associated with respiration, lung volumes and capacities, High altitude physiology and aviation physiology.</b>
<b>Unit-X :</b> Ergonomics and Sports Physiology)	<b>Basic understanding of principles of ergonomics in different work places and sports physiology including the metabolic changes associated with training and exercise, adaptations of cardio-vascular system, respiratory system and muscular system. Nutrition of athletes and concept of doping.</b>
<b>Unit-XI :</b> Nervous System	<b>Understanding of Nervous system, its organization, nervous regulation of various systems and activities.</b>
<b>Unit-XII :</b> Excretory system, skin and thermoregulation	<b>Basic understanding of mechanism of excretion, organs associated with, their anatomy, histology and physiology, mechanism of body temperature regulation, mechanisms of heat loss and gain.</b>
<b>Unit-XIII :</b> Endocrinology &	<b>Understanding of endocrine organs, mechanism of hormone secretion, mode of actions and functions of different hormones. Concept of chronobiology and circadian rhythm.</b>

chronobiology	
<b>Unit-XIV</b> : Reproductive Physiology & Development Biology	Understanding of reproductive system, its functioning in male and female and associated mechanisms like gametogenesis, menstruation, fertilization, pregnancy, breast development, lactation, parturition etc. Concepts of cleavage and 3 germinal layer formation and embryo development.
<b>Unit-XV</b> : Sensory Physiology	Concepts of Sensory physiology which includes special senses like mechanism of vision, hearing, taste and smell and the associated disorders, their detections and remedies.
<b>Unit-XVI</b> : Microbiology, Immunology & Biotechnology	Understanding the various concepts in microbiology which includes classification of microbes, diseases caused by bacteria and viruses, bacterial and viral genetics, antibiotics and their mode of action. Understanding of concepts in Immunology, like innate and acquired immunity, development of humoral and cell mediated immunity and common immunological techniques. Concepts of biotechnology, its principles, procedures and applications.
<b>Unit-XVII</b> : Molecular Biology & Genetics	Understanding of concepts of molecular biology viz., DNA replication, transcription and translation in prokaryotes and eukaryotes and post transcriptional and translational modifications. Concepts of Mendelian Genetics, basic ideas of human genetics, genetic disorders.
<b>Unit-XVIII</b> : Research methodology & Epidemiology	Understanding of Research methodology, its principles, objectives and methods. Basic bio-statistical methods and their applications. Study of Epidemiology, mechanisms of disease occurrence, measuring disease frequency and identifying population at risk.

### **Elective Course**

<b>Unit-I</b> : Structural Units of Human System	Structure and function of cell and its organelles, modern concept of cell membrane and transport mechanism through cell membrane, cytoskeleton, concept of cell cycle and its regulation, concept of apoptosis and necrosis. Overview of musculo-skeletal system, Bone structure, types, concept of osteoporosis and arthritis.
<b>Unit-II</b> : Biophysical & Biochemical Principles	Understanding of Bio-physical processes like Osmosis, diffusion, viscosity, ultra-filtration and their physiological significance. Concept of homeostasis, Donnan membrane equilibrium its

	relation with osmotic pressure and pH , Biological significance of Donnan membrane equilibrium. Concept of Acid, base, buffers – biological significance, Understanding of Henderson-Hasselbalch Equation and related to numerical related to pH .
<b>Unit-III:</b> Blood, other Body Fluids & Clinical Hematology	General understanding of blood and other body fluids, plasma protein types and function, haemopoietic system, concept of erythropoiesis, leucopoiesis and thrombopoiesis, concept of blood volume –factors effecting, General understanding of haemostasis and concept of clinical haematology.
<b>Unit-IV:</b> Biochemistry & Enzymology	Basic understanding of carbohydrate, protein and fat, Concept of enzymology and understanding of enzymatic mechanism, enzyme regulation. Allosteric enzyme regulation, covalent modification, km value, Effect of pH and temperature.
<b>Unit-V:</b> Digestion & Metabolism	Understanding of various concepts in digestive system, different metabolic pathways and their mechanism of action.
<b>Unit-VI:</b> Cardio-vascular and Respiratory System	General understanding of Cardio-vascular system and respiratory system, structure and mechanism of working of human heart and blood vessels, regulation of blood pressure mechanism of respiration, lung volumes and capacities and control of respiration.
<b>Unit-VII :</b> Neurochemistry and Neurophysiology	Basic understanding of neurochemistry and neurophysiology viz. chemistry of neurotransmitters and neuro-peptides, mechanism of working of nervous system, reflex action, concept of synapse and neuro-muscular junction, ascending and descending tracts.
<b>Unit-VIII :</b> Renal Physiology & Environmental Stress Biochemistry	Basic concepts related to excretion in human, mechanism of hypo and hyper-tonic urine formation, normal and abnormal constituents of urine, regulation of body temperature, non-excretory functions of Kidney. Concepts related to environmental and stress physiology.
<b>Unit-IX :</b> Brain and Sensory Physiology	Understanding of different components of brain, their structures and functions, special senses- structures and functions of eyes, ears, tongue and nose, defects of vision and hearing.
<b>Unit-X :</b> Endocrinology and Reproductive Physiology	Understanding of endocrine organs, mechanism of hormone secretion, mode of actions and functions of different hormones. Concept of chronobiology and circadian rhythm. Understanding of reproductive system, its functioning in male and female and associated mechanisms like gametogenesis, menstruation, fertilization and pregnancy.
<b>Unit-XI :</b> Nutrition &	Understanding of general concepts on nutrition, RDA, SDA, methods of diet survey, formulations of balanced diet for different

Dietetics	age-groups and activity status, Malnutritional disorders .
<b>Unit-XII</b> : Molecular Biology & Immunology	<p><b>Understanding of concepts of molecular biology viz., DNA replication, transcription and translation in prokaryotes and eukaryotes.</b></p> <p><b>Understanding of concepts in Immunology, like innate and acquired immunity, development of humoral and cell mediated immunity and common immunological techniques.</b></p>

## Swami Vivekananda Mahavidyalaya

Mohanpur, Tripura

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### Department of Botany:

#### Course Outcomes:

- 1.To provide a course of study in Taxonomy, Morphology, Anatomy, Cell Biology, Genetics, Plant Physiology and Biochemistry etc building on knowledge of basic principles of Botany established in the course.
- 2.To expand on the areas of Botany touched at Higher Secondary level and to introduce new and more depth in the understanding in Botany.
- 3.To develop further practical biological skills introduced in the Botany syllabus.
- 4.To prepare students for a number of Master Degree Courses viz., Natural Science courses, mainly Botany, Plant Sciences, Plant Biotechnology, Molecular Biology, Genetics, Biochemistry Forestry & Biodiversity among others.

#### Programme Outcomes:

At the end of the course students should:

1. Have a greater knowledge and appreciation of Botany.

2. Understand the functions of Taxonomy, Morphology, Anatomy, Cell Biology, Genetics, Plant Physiology and Biochemistry in Botany.
3. Understand how these separate systems interact to yield integrated responses holistically in nature.
4. Be able to perform, analyse and report on experiments and observations in Taxonomy, Microbiology, Anatomy, Plant Physiology & Biochemistry etc;
5. Be able to recognise and identify different phanerogams, plant diseases, cell and tissue structures.
6. Understanding of Botany and allied subjects like Biochemistry, Basic Anatomy, Molecular Biology, Genetics, Microbiology, Biotechnology, Biostatistics, Tissue culture, Paleobotany and Research methodology.

# Programme Specific Outcomes

## Honours Course

SEM-	Unit-I:	<p><b>Fundamental Botany</b>            Origin of life, Difference between plant cell and animal cell. Timeline of plant evolution.            Three domain of classification-Archaea, Bacteria, Eukaryota.            History of Plant classification: Natural, Artificial &amp; Phylogenetic system of classification.            Plant life cycle pattern &amp; alternation of generation.            Darwin's theory of evolution. Macro&amp; micro evolution.            Species concept, Isolation &amp; mechanism of speciation.</p>
	Unit- II:	<p><b>Environmental Botany</b>            Pollution: Definition and categories.            Air Pollution: Types and sources of air pollutants and their effects on plants and animals.            Water Pollution: Types and sources of pollutants and their effects on plants and animals.            Soil Pollution: sources of pollutants and their effects on living organisms.                Bioremediation, noise pollution, acid rain, classical and photochemical smog, heavy metal pollution and radioactive pollution.            Greenhouse effect and global warming- basic concept, significance of ozone umbrella, ozone hole- types of ozone depleting chemicals and their interactions.</p>
	Unit-III:	<p><b>Industrial Botany-I (Agri Industries and Microbial fermentation, food and Bio-fuels)</b>            Organic farming -concept, need, types of organic fertilizers, advantages and limitations.                Importance of seed industries, seed production, seed processing and marketing, major seed industries and corporation of India.            Production of SCP from algae- Spirulina culture technique            Mushroom production and harvesting- <i>Volvariella sp</i>, <i>Pleurotus sp</i>.            Commercial production of Ethyl alcohol, citric acid, and Penicillin.            Concept of Biofuel and its need, Plants used for biofuel production.</p>
	Unit-IV:	<p><b>Industrial Botany-II (Plant nursery and Floriculture industry)</b>            Concept and types of nurseries, Ornamental plant nursery, Fruit plant nursery, Medicinal plant nursery, Vegetable plant nursery and Orchid plant nursery.            Propagation methods: Seed propagation, natural vegetative propagation and artificial vegetative propagation            introduction to Floriculture: Important floricultural crops, Open cultivation practices, harvesting and marketing.  <a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanyUg1stSem.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanyUg1stSem.pdf</a></p>
S-II	Unit-V:	<p><b>Algae &amp; Bryophyte</b>            1. general account, 1.1 thallus organization, 1.2 ultrastructure of plastid &amp; flagella 1.3 origin and evolution of sex, 2. Outline Classification (Lee 1999), 3. Chlorophyceae, 4. Charophyceae, 5. Xanthophyceae, 6. Bacillariophyceae, 7. Phaeophyceae, 8. Rhodophyceae, 9. Economic importance of Algae, 10. General account, 11. Life history, 12. Phylogeny, 13. Importance of Bryophyta</p>



	<b>Unit-VI:</b>	<b>Pteridophyta, Gymnosperm &amp; Paleobotany</b> 1. life history, 2. Fossil pteridophyte, 3. Telome concept, 4. Heterospory and seed habit, 5. economic importance, 6. Progymnosperms, 7. Life histories- Distribution in india, 8. Fossil gymnosperms, 9. Economic importance, 10. Plant fossil, 11. Geological time scale, 12. Indian Gondwana System <a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany2nd2nd.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany2nd2nd.pdf</a>
<b>S-III</b>	<b>Unit-VII:</b>	<b>Fungi and Plant resource utilization</b>
	<b>Unit-VIII:</b>	<b>Microbiology and Plant Physiology</b> <a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/botan3rd_17072015.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/botan3rd_17072015.pdf</a>
<b>S-</b>	<b>UNIT-IX:</b>	<b>Morphology and Embryology, Taxonomy</b>
	<b>Unit-X:</b>	<b>Anatomy, Ecology and Phytogeography</b> <a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany_4th.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany_4th.pdf</a>
<b>S-</b>	<b>Unit-XI:</b>	<b>Cell biology</b>
	<b>Unit-XII:</b>	<b>Molecular Biology</b>
	<b>Unit-XIII:</b>	<b>Cytogenetics</b>
	<b>Unit-XIV:</b>	<b>Plant breeding and Biostatistics</b> <a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanySyllabus_vthsem.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanySyllabus_vthsem.pdf</a>
<b>S-</b>	<b>Unit -XV:</b>	<b>Biochemistry</b>

<b>Unit- XVI:</b>	<b>Plant Physiology</b>
<b>Unit- XVII</b>	<b>Pharmacognosy</b>
<b>Unit- XVIII</b>	<b>Plant Biotechnology</b> <a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanySyllabus_vthsem.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanySyllabus_vthsem.pdf</a>

**ElectiveCourse**

<b>SEM-I</b>	Unit-I:	<a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanyUg1stSem.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanyUg1stSem.pdf</a>
	Unit-II:	<b>Fundamental Botany</b>
	Unit-III:	<b>Environmental Botany</b>
	Unit-IV:	<b>Industrial Botany-I (Agri Industries and Microbial fermentation and food)</b> <b>Industrial Botany-II (Plant nursery and Floriculture industry)</b>
<b>SEM-II</b>	Unit-V:	<a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany2nd2nd.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany2nd2nd.pdf</a> <b>Algae and Broyophyte</b>
	Unit-VI:	<b>Pteridophyta, Gymnosperms and Paleobotany</b>
<b>SEM-III</b>	Unit-VII:	<a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/botan3rd_17072015.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/botan3rd_17072015.pdf</a> <b>Fungi and Plant resource Utilization</b>
	Unit-VIII:	<b>Microbiology and Plant Pathology</b>
<b>SEM-IV</b>	UNIT-IX:	<a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany_4th.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/Botany_4th.pdf</a> <b>Morphology and Taxonomy</b>
	Unit-X:	<b>Anatomy, ecology and phytogeography</b>
<b>SEM-V</b>	Unit-XI:	<a href="https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanySyllabus_vthsem.pdf">https://www.tripurauniv.ac.in/Content/pdf/Syllabus/BotanySyllabus_vthsem.pdf</a> <b>Cell &amp; Molecular Biology, Cytogenetics and Plant Breeding</b>
	Unit-XII:	<b>Plant Physiology and Plant Biotechnology</b>

## Department of IT

**Objectives:** The main objective is to introduce IT in a simple language to all undergraduate students, regardless of their specialization. It will help them to pursue specialized programs leading to technical and professional careers and certifications in the IT industry. The focus of the subject is on introducing skills relating to IT basics, computer applications, programming, interactive medias, Internet basics etc. **Learning Outcomes:** At the end of this course, student should be able to (a) Understand basic concepts and terminology of information technology. (b) Have a basic understanding of personal computers and their operations. (c) Be able to identify issues related to information security. **Pre-requisites:** Preliminary knowledge of computer, their operations and applications.

### Course outcome-

By the end of the course, successful students will demonstrate that they have acquired some of the skills they will need to prepare them for the ongoing process of learning about, evaluating, and using digital information technologies and applications. Specifically, they will be able to

1. Demonstrate that they can use a personal computer or mobile device for accessing the internet and use basic computer applications such as e-mail, Powerpoint, Excel and common webpage creation tools.
2. Demonstrate that they can use digital technology in research, analysis, and critical inquiry.
3. Demonstrate an understanding of the concepts of online security and privacy.
4. Demonstrate knowledge of information technologies and digital cultures, both historic and contemporary, and be aware of the social, ethical and philosophical issues related to technological development.
5. Demonstrate that they can evaluate and explain the on-going changes in digital technology and their impacts on society.
6. Demonstrate that they can apply a variety of information technologies to their own work, demonstrating their competence in researching, creating, and presenting projects using a variety of digital information tools.

