DEPARTMENT OF BOTANY

PROGRAM OUTCOME
MODEL CBCS PATTERN

On completion of the program student will

- **Think Critically:** Get ability to apply the process of science by formulating hypotheses and design experiments based on scientific method.
- Analyze and interpret results generated through studies in Botany, taxonomical treatments, field studies, excursion tour and laboratory techniques used in the subject.
- Understand the relationship between science and society by recognizing and discussing logical, scientific and ethical issues in Botany subject.
- **Environment and sustainability**: understand the issues of environmental contexts and sustainable development with respect to assessment, conservation and utilization of floral diversity.
- It aims to train the students in all the areas of plant sciences with a unique combination of core and elective papers with significant interdisciplinary components.

PROGRAM SPECIFIC OUTCOME

- Identify classify the plants by using key characters.
- Prepare and view specimens for examination using light microscopy.
- Use appropriate plant techniques and use of instrumentation related to it.
- Practice safe laboratory procedures, using appropriate protective, biosafety and emergency procedures.
- Documentation and report writing on experimental protocols results and conclusions, study tours and field visits etc.

SUBJECT – BOTANY

(As per Model CBCS Syllabus)

(CREDITS: THEORY-4, PRACTICAL-2)

COURSE CODE	COURSE NAME	COURSE OUTCOME
CORE 1	MICROBIOLOGY AND PHYCOLOGY	• Learn about microbial growth and nutrition. • Know about classification, characteristics, ultrastructure of prokaryotic and eukaryotic microbes. • Gain knowledge about the PHYCOLOGY with special reference to Indian work. • General account on diversified habitats, thallus organization, pigment system, reproduction and life cycle of different algae can be known. • Study of important groups of algae (Cyanophyta, Chlorophyta, Xanthophyta, Rhodophyta, Phaeophyta) • Role of algae in human welfare with special reference to SCP.
CORE 2	BIOMOLECULES AND CELL BIOLOGY	• Understand biochemistry at the atomic level. • Easily Understand on role of biological biomolecules and their functions. • Demonstrate a broad knowledge of the fundamental concepts of chemistry and biology. • Analyze and study the chemical and biochemical properties of biomolecules and also understand the relationships between

		biological molecules and plant. • Students will get fine knowledge about the ultra structure of plant cell and its function. • The detailed study of cell organelles like chloroplast, mitochondria etc. • The fine structure of nucleus and role is elaborated.
CORE 3	MYCOLOGY AND PHYTOPATHOLOGY	• General account on diversity, identification, classification, reproduction and life cycle of different fungi can be known. • Infectitious cycle of different fungi can be known. • Gain adequate knowledge on Economic importance of the fungi in different fields. • Know about organisms and causal factors responsible for plant diseases and methods of studying plant diseases. • Familiarize with some common plant diseases in India and the prevention measures of the diseases. • Gain knowledge on Host-Parasite interaction process. • Know about the terms like ETIOLOGY and SYMPTOMATOLOGY
CORE 4	ARCHEGONIATES	• Understanding of archegoniatae-Bryophytes, Pteridophytes and Gymnosperms. • Understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms. • Understanding of plant evolution and their transition to land habitat. • Demonstration of proficiency in the experimental techniques and methods of appropriate analysis of Bryophytes, Pteridophytes, Gymnosperms. • Understanding of plant evolution through

		time.
CORE 5	ANATOMY OF ANGIOSPERMS	• Know about plants anatomical structure and components of plant tissues and their developmental patterns. • Organization of root and shoot apical meristem, its structure and function with different theories. • Differentiation and function of epidermis, parenchyma, mechanical tissues(systematics, sclerenchyma, stone cells, xylem), secretory tissues(mucilage canals,resin canals, nectars and oil) laticifers(latex cells and latex vessels)can be studied. • Anatomy of leaf (monocot,dicot), stem(monocot, dicot) and root(monocot,dicot) is observed through section cutting and maceration. • Normal and abnormal secondary growth • Origin, structure, function and development of cambium and vascular tissues.
CORE 6	ECONOMIC BOTANY	• Learn the relationship between plant and people. This paper intersects many fields such as agronomy, chemistry, anthropology, economy ethnobotany, geography, forestry, horticulture. • Understand core concepts of Economic Botany and relate with environment, populations, communities, and ecosystems. • Develop critical understanding on the evolution of concept of organization of apex new crops/varieties, importance of germplasm diversity, issues related to access and ownership. • Develop a basic knowledge of taxonomic

		diversity and important families of useful plants. • Increase the awareness and appreciation of plants & plant products encountered in everyday life. • Appreciate the diversity of plants and the plant products in human use.
CORE 7	GENETICS	• Development of detail knowledge about Mendelian and non-Mendelian genetics with several practical approaches. • Development of concept about the nucleic acids & how nucleic acids transport genetic information among offspring. • Understanding scientific cause behind several abnormal chromosomal syndromes. • Understanding basic causes of gene mutation its detection & DNA-repair mechanism.
CORE 8	MOLECULAR BIOLOGY	• Studies of the structures and chemical properties of DNA and RNA to develop practical concept. • Study of replication of DNA and Transcription of RNA will be studied to prepare the concept of central dogma , an essential lively process to control life. • Acquiring the molecular concept of protein synthesis and related cellular reactions and the basic knowledge of instrumentation to study these reactions will be acquired.
CORE 9	PLANT ECOLOGY AND PHYTOGEOGRAPHY	• Development of concept on global ecological issues. • Acquiring knowledge about ecosystems and biodiversity.

		• Knowledge about the distribution of plants and there arrangement - both natural and manmade are studied for having a total view to relate the distribution pattern of plants to establish more sustainable plant community systems in the world. • Understanding core concepts of biotic and abiotic environments. • Knowledge about soils - physical, chemical and biological components. • Analysis of the phytogeography or phytogeographical division of India. • Evaluation of energy sources of ecological system.Acquiring the concept of adaptation of plants in relation to light, temperature, water, wind and fire. • Development of skills for ecological practices.
CORE 10	PLANT SYSTEMATICS	• Development of taxonomic tools in plant systematics. • Knowledge about appropriate method of identification of plants to contribute classification to trace the evolution and interpretation among the plants. • Understanding the principles of general taxonomy and nomenclatural rules. • Explanation of concept of species. Development of the concept to classify plants Recognition of the importance of herbarium, virtual herbarium and botanic garden. • Interpretation the rules of ICBN in botanical nomenclature. Understanding various systems of classification. • Detailed studies on commonly growing families.

CORE 11	REPRODUCTIVE BIOLOGY OF ANGIOSPERMS	• Able to understand growth , development,and reproduction in plants as well as understand the physiological and metabolic changes happening along with the environmental impact. • Able to differentiate reproductive organs at morphological, anatomical, physiological and biochemical level. • The knowledge will help to apply in agriculture for reproduction of hybrids. • Pollen biology helps the students to gain knowledge about pollen structure, pollen wall proteins, viability, storage and its scope in other fields.
CORE 12	PLANT PHYSIOLOGY	• Students will be able to understand the various physiological life processes in plants. • They will gain knowledge about various uptake and transport mechanism in plants and are able to coordinate the various processes. • They understand the role of various hormones, signalling compounds, enzyme kinetics. • Students will learn about various mechanisms such as channel or transport proteins involved in nutrient uptake in plants • Understand Water relation of plants with respect to various physiological processes. • Explain chemical properties and deficiency symptoms in plants. • Acquire adequate knowledge about plant growth regulators, phytochrome and flowering of plants.

CORE 13	PLANT METABOLISM	• Understanding the metabolism of plants and enzymes with respect to various physiological processes. • Explaination of chemical properties carbon compounds produced in plants. • Explaination of the significance of carbon metabolism in plants. • Acquiring the adequate knowledge of metabolism in plants. • Explaination of the ATP-Synthesis. • To acquiring adequate knowledge about nitrogen metabolism in plants. • Explaination of the mechanism of signal transduction.
CORE 14	PLANT BIOTECHNOLOGY	• Understand the core concepts and fundamentals of plant biotechnology and genetic engineering. • Develop their competency on different types of plant tissue culture. • Analyze the enzymes and vectors for genetic manipulations. • Examine gene cloning and evaluate different methods of gene transfer. • Critically analyze the major concerns and applications of transgenic technology. • To learn about gene cloning, recombinant DNA technology and bioinformatics includes recent biotechnological advancement related to genomics and proteomics. • Acquire the knowledge about gene transfer and applications of biotechnology. • Acquire the knowledge about tissue culture techniques, restriction digestion, isolation and electrophoresis of plasmid DNA

GE 1	BIODIVERSITY	• Comprehend the diversity of microorganisms(virus, bacteria). • Able to know about morphological, anatomical, developmental patterns in the bryophytes, pteridophytes and gymnosperms. • To know about the reproductive parts , their development and mechanism of reproduction and life cycle pattern. • Economic values of the lower plants. • Stellar evolution, heterospory and seed habit can easily be understood. • Adaptive mechanism of the lower plants at different environments.
GE 2	PLANT PHYSIOLOGY AND METABOLISM	• The students are familiar with various physiological aspects involved in the plant development. • The role of enzymes in different metabolic processes can be known. • Mechanism of photosynthesis, respiration, noitrogen metabolism, lipid metabolism can easily understood. • Concept of flowering and the roll of different phytohormones can be known.
DSE 1	ANALYTICAL TECHNIQUES IN PLANT SCIENCES	• This course is to make student aware of the concept of sampling, Accuracy, Precision, Statistical test data-F, Q and t test. • The course exposes students to the laws of spectroscopy and selection rules governing the possible transitions in the different regions of the electromagnetic spectra. • Centrifugal and electrophoretic methods of analysis are also dealt with. • Students are exposed to important separation methods like solvent extraction and chromatography. • The practical expose students to latest instrumentation and they learn to detect analytes in a biological sample mixture.

DSE 2	NATURAL RESOURCE MANAGEMENT	• They are able to design the strategies for conservation of natural resources. • Indepth studies on ecological parameters in biodiversity studies • Developing critical thinking for the conservation of biodiversity and strategies used for the conservation of plant diversity. • Developing critical thinking for shaping strategies viz. scientific, social, economic and legal issues, for the environment protection and conservation of biodiversity, social equity and sustainable development.
DSE 3	HORTICULTURAL PRACTICES AND POST HARVEST TECHNOLOGY	• To enable the students to apply various horticultural skills and knowledge in their career. • To identify and prescribe sustainable options in horticulture which benefit the environment while maintaining productivity and economic viability. • Gain knowledge about post harvest technology which enables storage of agricultural products during the whole year by elimination of negative processes.
DSE 4	PROJECT WORK	• They will learn about the research , literature recession, analysis and expression of their understanding of the topic in their own words. • Generate the data, compile and analyze and interpret the data. • The students completing the course is capable to perform short research projects using various tools and techniques in plant sciences and develop scientific temperament and research attitude. • Presentation skill is developed in the students.

SRI BHARATA PATI MAHAVIDYALAYA

SAMANTIAPALLI, GANJAM, ODISHA

UNDER GRADUATE COURSE IN ECONOMICS

(STATE MODEL SYLLABUS UNDER CBCS)

COURSE	COURSE NAME	COURSE OUTCOMES
Core - 1	**Introductory Micro Economics**	**COURSE OUTCOMES**: This course is designed to expose he students to the basic principles of microeconomic theory. The course will illustrate how microeconomic principles and concepts can be applied to real life situations. The objective of this paper is to devlope a theoretical understanding of strategic behavior and decision making of economic agents like consumers and firms or producers. **The course outcomes of this paper are: -** 1. To Understand the fundamental concepts of microeconomic theory. 2. To know the ten basic principles of economics that economists use to understand the process of decision-making by an economic agent(s). 3. The student should be able to apply mathematical tools and techniques to study behavior of economic agents. 4. Besides students will be able to identify strategic behavior of economic agents and formulate them in a game theoretic framework. They will be able to identify and analysis strategic interactions and explain negotiation and exchange between economic agents in game theory models. 5. The students learn to work with diagrams and graphs. 6. The students understand the market forces of supply and demand and the conditions of market equilibrium, the concepts of elasticity of demand and supply and their determinants, the concepts of consumer and produce surplus. 7. The utilitarian approach from cardinal to ordinal and the indifference curve analysis, optimization with budget constraints etc.

		8. The students will get an idea of various cost concepts in the short run and long run and the profit maximizing output decision of the firms both in short and log run in the competitive market situations. 9. In this paper students understand the linkages among factors of production especially about the supply of and demand for labour and labour market equilibrium.
Core -2	**Mathematical Methods for Economics-I**	**COURSE OUTCOMES:** The objectives of this paper are to introduce the knowledge about preliminary mathematical concepts which enables the students of economics at undergraduate level to understand the microeconomic theory, macroeconomic theory, econometrics and statistics. In this course students will learn the methods of applying mathematical techniques to economic theory in general. The course outcome of this paper are as follows: - 1. Students shall acquire in-depth knowledge of the set theory and set operations; Relations; Functions- types and properties; Graph of functions; limit and continuity of functions; Number systems. 2. The students will learn the technique of differentiation for a function of one variable using simple derivative and also for function of two or more independent variable using partial derivative techniques. 3. This paper enables students to understand and compute the elasticity of a function using differentiation technique and also to find out the nature of commodities. 4. The students learn how to derive marginal functions from total functions using derivatives. 5. The study of Matrix algebra and the Determinants help the students to solve a system of equations easily.
Core-3	**Introductory Macro Economics**	**COURSE OUTCOMES:** This course aims to introduces the students to the basic concepts of macroeconomics which deals with the aggregate economy. This course enables the students to understand the fundamental concepts associated with the determination and measurement of aggregate macroeconomic variables like saving, investment, GDP, money, inflation and the balance of payments.

		The course outcomes of this paper are: - 1. Students understand the national income concepts of GDP, GNP, NNP, NDP at market price and factor cost, real and nominal, the concept of disposable personal income. 2. Students learn the difference between micro and macroeconomics. they learn partial and general equilibrium as well as comparative statics and dynamics. 3. Knowledge to students regarding measurement of National Income and its difficulties; the concept of Circular Flow of income in 2,3 ad 4 sector economy & National Income Accounting as well as Green Accounting. 4. Money: evolution and function; quantity theory of money; value of money and price index number. 5. Inflation and deflation concept, causes of inflation and deflation and various anti- inflationary and deflationary measures. 6. Students learn the classical and Keynesian theories of national income determination. Basic concepts of aggregate demand and aggregate supply, consumption, saving and investment function and investment multiplier.

Core-4	**Mathematical Methods For Economics-II**	**COURSE OUTCOMES:** The main objective of this course is to explain how mathematical techniques can be applied to micro and macro-economic theories for better analysis. **This course gives insights to the following** 1. Students learn how the various producing sectors of the economy are interdependent and formulation of Input-Output Model. They will be able to determine the equilibrium level of output for each producing sector of the economy using matrix algebra. 2. They learn the second and higher order simple and partial derivative techniques which they can use to find out the curvature of functions. The concavity and the convexity of the functions and the point of inflexion in a given function can be determined. 3. Techniques of indefinite and definite integration will be taught in this course which enable them to derive total functions from marginal functions as well as can compute area under a certain curve using indefinite integration. The determination of consumer and producer surplus using integration technique which help them a lot. 4. This course enables the students to deal with decision making problems. The technique of first and second order derivative help them to optimize the utility, profit, cost, revenue etc functions with or without constraints. 5. Provide the knowledge of Functions & Derivatives and its applications in the Utility Function, Demand & Supply Functions, Production & Cost Functions, Revenue Function, Consumption Function etc.

Core-5	**Microeconomics-I**	**COURSE OUTCOMES:** This course is designed to provide a sound training in micro economic theory that helps the students to analyse the behaviour of the consumers and the producers. **The Course outcomes are: -** 1. Indifference curve analysis in consumer theory that helps the students to understand the basic consumer behavior of utility maximization and choice with budget constraints and expenditure minimization behaviour of consumers. 2. The price, income and substitution effect provide knowledge of the effect of changes in price of commodities, income of the consumer and the price of the related goods on the consumption basket and the real income of the consumer. 3. Students gain knowledge about the concept of consumers surplus and the nature of commodities and the demand relationship among them. 4. The behaviour of producers is being studied in this course. The details of production function in the short run and long run along with the cost curves and cost functions helps to analyse the cost minimizing input choices of the producers. 5. Knowledge about the nature and behaviour of firms and the short run supply decision of competitive firms, profit functions and the profit maximizing conditions and the input demand by the firms.

Core-6	**Macroeconomics-I**	**COURSE OUTCOMES:** This course introduces the students the formal modeling of macroeconomics in terms of analytical tools. It discusses various alternative theories of output and employment determination in a closed economy. It also focuses on various theoretical issues related to an open economy. **The following are the course outcome of this paper: -** 1. Detailed study of Consumption and investment functions. The consumption income relationship under Keynes fundamental psychological law of consumption is studied. The various theories of consumption and the factors affecting consumption along with the measures to raise consumption level is being studied by the students. Similarly the meaning, types, determinants and theories of Investment help the students to clearly understand the macroeconomic variables. 2. The theories of demand and supply of money and the concept of money multiplier and its determinants. Students gain knowledge about the measures of money supply in India. 3. The determination of employment, output, prices and investment in IS-LM framework with interactions of goods and commodity market as well as implications of changes if any in the IS and LM curves. 4. The knowledge of inflation unemployment relation in short run and long run and the Phillips curve. 5. Meaning and characteristics of Trade cycles and the monetary and nonmonetary theories of trade cycles given by Hawtrey, Hayek and Keynes.

Core-7	**Statistical Methods for Economics**	**COURSE OUTCOMES:** This course introduces some basic terminologies used in statistical analysis and inference. It is followed by some statistical measures like measures of central tendency, measures of dispersion, skewness ad kurtosis. This course also makes the students familiar with the statistical tools like correlation and regression analysis, time series analysis ad index number. Finally, this paper introduces to the students the theory of probability and the sampling techniques. This course would enable the students to comprehend statistical techniques that can be applied to various economic problems to find solutions. It facilitates to develop the ability of the students to use statistical techniques to analyse data and assess the accuracy of the resulting estimates and conclusions. **The following are the course outcome of the paper: -** 1. Knowledge about basic terminology used in statistics like population and sample, parameter and statistic, Data- meaning, types and methods of collecting primary and secondary data and the concepts of frequency distribution, cumulative frequency. 2. The students become familiar with Tabular and Diagrammatic Presentation of Data. 3. It makes the students familiar with Measures of Central Tendency. The students can compute the average value of a data series such as Mean, Median, Mode, Geometric Mean and Harmonic Mean. 4. The statistical method of Measures of Dispersion like Range, Mean Deviation, Quartile Deviation, Standard Deviation, Coefficient of Variation helps the students in the analysis of data. 5. The Correlation and Regression Analysis enables the students to establish relationship between two variables and to estimate the value of one variable

		on the given values of the other variable. 6. The students would be able to describe the components of Time series, apply the Time series analysis to business scenarios. 7. The students would be able to measure the average changes in the price level using the statistical tool of Index Number. 8. Students could be able to understand the probability concept and the theory of probability. 9. They would have good understanding of the concept of sampling and the methods of sampling.
Core-8	**Microeconomics-II**	**COURSE OUTCOMES:** The course gives emphasis to conceptual clarity coupled with the use of mathematical tools and reasoning. It covers Market both perfect and imperfect, General equilibrium analysis and welfare and Game theory. **The course outcomes are the followings: -** 1. It aims to analyse the short run and long run behaviour of competitive firms and industries in taking supply decisions and the conditions of equilibrium. 2. Provides knowledge about the general equilibrium analysis, pareto efficiency allocations and welfare economics. 3. Aims to define the characteristics of Monopoly market, the profit maximisation and output choice behaviour of a monopolist and also the price discrimination practices under the monopolistic situations. 4. Aims to describe the characteristics of oligopoly market structure and the price and output determination strategies in oligopoly market structure. 5. Explains why collusion occurs in oligopoly industries and the role of game theory in understanding the behaviour of oligopolists.

Core-9	**Macroeconomics-II**	**COURSE OUTCOMES:** The students are introduced to the long run dynamic issues like growth and technical progress. **The course specific outcomes are: -** 1. Explains the basic Solow model of steady state economic growth with capital accumulation and the golden rule level of capital. It also describes the solow model with population growth and technical progress. 2. This course explains to the students the concepts of Balance of Payments and the Foreign Exchange rate. The equilibrium and the causes of disequilibrium in the Balance of Payment statement of an open economy. Students learn how the foreign exchange rate is determined. 3. Students studies the Fiscal and Monetary policies of the countries and its effectiveness in closed and open economies. 4. It provides knowledge about the classical and Keynesian thought of employment and output determination, the Phillips curve analysis. 5. It explains to the students the orthodox monetarist school of thought on quantity theory of money, the stabilisation policy, the augmented Phillips curve analysis and the Neoclassical model of Rational Expectations Hypothesis and its policy implications.
Core-10	**Research Methodology**	**COURSE OUTCOME:** The objective of this paper is to develop a research orientation among the students and to acquaint them with fundamentals of research methods. This course aims at explaining the basic concepts used in social science research. It covers Research Design, Measurement in Research and Research Ethics and Actions in Research. **The course specific outcomes are** 1. Explains meaning, types, approaches, significance of Research and the criteria of good research.

		2. It provides the knowledge about the research process, the qualities of a good researcher and how research can be carried out as a carrier. 3. It enables the students to formulate a research problem and to prepare the blueprint of the research called research design. 4. It helps students to understand the basic principles of Experimental Designs. 5. It provides information about various measurement and scaling techniques used in research as well as the sources of errors in measurement. 6. Students will be able to write a research proposal, review the existing literatures. 7. Explains the Research codes and ethics and the concepts of Plagiarism and IPR 8. Provides knowledge about the style of report writing, drawing conclusions, citation styles and the evaluation of checklists.

Core-11	**Indian Economy-I**	**COURSE OUTCOMES**: The course highlights the achievements and issues of the economy. This course reviews the trends of major economic indicators and policy debates in India in the post- independence period. **Course specific outcomes are:** 1. Explains to the students the status of Indian economy under British rule and the current status covering the colonialism and the economic consequences of British rule. 2. Explains the basic characteristics of Indian Economy as a developing economy. 3. It provides knowledge about the demographic features, the demographic issues like sex and age composition in population, the concept of demographic dividend, the causes of rapid growth of population and the population policy of India. 4. Discusses the issues of human resource development and the health and education policy of India focusing on the urbanization of migration issues in India. 5. It provides the information about the trends of national and per capita income as well as the changes in the sectoral composition of national income. 6. Explains the regional inequality in growth and income issues in India. 7. Discusses the poverty, inequality and unemployment problem of India in detail covering nature, estimation, trend, causes and the poverty alleviation programs and the employment policy of India. 8. Provides knowledge about the objectives, targets, achievements of the five-year plans especially the vision and strategy of Twelfth five-year plan and all about NITI Aayog.

Core-12	**Development Economics-I**	**COURSE OUTCOMES:** The course discusses alternative conception of development and their justification through models of growth and national income. This paper covers the role of agriculture, industry, institutions, market in economic development of a country. **The course specific outcomes are:** 1. Explains difference between economic growth and economic development. It provides knowledge about the characteristics of underdeveloped countries and causes of vicious circle of poverty faced by them. 2. Students learn the obstacles for economic development and various measures of economic development like national and per capita income, PQLI, HDI, HPI, MDPI, GDI etc. 3. Explains the theories of economic growth of classical economists, Karl Marx, Schumpeter, Rostow and Robert Solow. 4. Students learn the measures of poverty and inequality and policy options considering the relationship between growth, poverty and inequality. 5. Discusses the role of agriculture and industrialization in economic development. Students will be able to know the interdependence between agriculture ad industry after studying the model of complementarities. 6. Students will get insights on the role of institutions for economic development and characteristics and qualities of good institutions.

Core-13	**Indian Economy-II**	**COURSE OUTCOMES:** This course explains the sector specific policies and their impact in shaping trends in key economic indicators in India and covers the environmental policies of India. **The course specific outcomes are:** 1. Explains the nature, importance, trends of Indian agricultural production and causes of the low agricultural productivity. 2. Explains new agricultural strategies and green revolution, rural credit structure and agricultural marketing system in India. 3. Enables the students to understand the trend of industrial output and productivity. It gives knowledge about the various industrial policies of India. 4. Provides knowledge about the MRTP act, FERA and FEMA and the growth and problems of small scale industries in India 5. Explains the growth and contribution of service sector to GDP of India and the health ad education policy of India. 6. Students learn the role, composition and direction of India's foreign trade, Balance of Payment position and trade policy of India. 7. Explains the various environmental policies of India, the impact of climate change on India and the possible role of India.
Core-14	**Development Economics-II**	**COURSE OUTCOMES:** The course explains basic demographic concepts and their evolution during the process of development. It covers dualism and economic development, the relationship between environment and development and international trade and economic development along with the issues of financing economic development. **The course specific outcomes are:** 1. Explains the demographic concepts of Birth Rate, Death Rate, Fertility Rate etc. and the Malthusian theory of

		population trap, migration model of Todaro and policy options. 2. Explains dualism and economic development, Gunar Myrdal theory of cumulative causation, regional and international inequality and Centre Periphery thesis. 3. Students learn the environment development linkage, the concept of sustainable development, climate change and common property resources. 4. Enable the student to get idea on the role of trade in economic development and the trade strategies of export promotion and import substitution for development. Students learn the terms of trade and economic growth that is explained in the Prebisch Singer Hypothesis. 5. Explains the financing economic development through savings, taxation, public borrowing, foreign aid and finance.

DSE-1	**PUBLIC ECONOMICS**	**COURSE OUTCOMES:** This course aims at studying the government policies from the point of view of economic efficiency and equity. It covers the taxation and expenditure policies and public debt of governments. This paper also includes public goods, market failures and externalities. **The course specific outcomes are:** 1. Explains the meaning and scope of public finance, distinction between public and private finance and between public and private good. 2. Explain the principle of maximum social advantage, market failure and role of government. 3. Students learn about public budget and the concept of balanced budget multiplier. 4. Knowledge about meaning, classification, cannons and principles of public expenditure. It explains the causes of growth of public expenditure of Wagner and Peacock-Wiseman hypothesis. 5. Knowledge about the meaning, cannons and classification of taxation and the impact and incidence of taxes. It also explains the characteristics of a good tax system and the present trend of tax revenue in India. 6. Explains the sources and effect of public debt and the methods of debt redemption and debt management.
DSE-2	**Money, Banking and Financial Market**	**COURSE OUTCOMES:** To expose students to the theory and functioning of the monetary and financial sectors of the economy. **The course specific outcomes are:** 1. Explains the definition and function of money; value of money and construction of index number. Students learn different types of index number like WPI, CPI, PPI, Cost of living Index and the concept of GDP deflator.

		2. Explains theories of demand for money and the measures of money supply and the concept of money multiplier and high powered money. 3. Students will be able to understand the functions of commercial banks and the credit creation process of the commercial banks. 4. Students are enabled to understand the functions of central bank and the credit control policy and instruments of central banks. 5. Students get knowledge about the financial market and the capital market and the stock exchange especially about SEBI.
DSE-3	**Environmental Economics**	**COURSE OUTCOMES:** Students are able to know the basics of environmental economics and develop insights into valuation of environment. **Course specific outcomes are:** 1. This paper deals with the environment and economics interaction and the serious environmental problems of air, water pollution and deforestation. 2. Understanding of climate change and its causes, effect and management. 3. Students learn the methods of environmental valuation. 4. Students gain knowledge on renewable and exhaustible natural resources and management of common property resources. 5. Students learn about the sustainable development and the indicators of sustainability.
DSE-4	**PROJECT WORK**	**COURSE OUTCOME:** This paper is intended to connect the economics in the text book and class room to the economics in the field. It aims at giving an empirical content to the subject. **The course outcomes are:**

		1. In-depth study of the topic chosen by the student. 2. Students will be able to apply the theories and laws they were taught in the class room to the social and real-world situations. 3. It empowers the students with the life skill of patience and persistence. 4. It helps students to locate their theoretical understandings in the context of socio-economic and political realities.

S.B.P MAHAVIDYALAYA, SAMANTIAPALLI

COURSE OUTCOME SUBJECT- HISTORY

CORE-I HISTORY OF INDIA-1

1. In this core paper1 students will learn about how man made progress from Pre-Historic times to Neolithic period.
2. They also learn about Harappan civilization how the first urban civilization developed and its Town planning system.
3. Lastly in this core they learn about 4 vedas, coming of Aryans their society,polity,religion .They also learn about Early vedic period and later vedic period how caste system emerged and Ashrama system appeared during the later vedic period.

CORE -II SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE ANCIENT WORLD.

1. In this core the students will acquire knowledge of how Evolutionary process of modern human being that is Homo Sapiens occurred on earth. How mode of Communication develoved.They started Farming and lived a settled life.
2. Students also learn about the contribution of river valley civilizations-Egyptian civilization, Mesopotamian civilization and Chinese civilization.
3. In this core students will learn about Greek civilization, its Democracy, Rise of the states of ATHENS AND SPARTA, AGE OF PERICLES, How Periclean age is known as golden age in Greek history?

CORE-III HISTORY OF INDIA –II

1. In this core paper 3 the students learnt about the various facets of Indian history Post Vedic period to Early Medieval period from 300 B.C to 750.B.C.
2. They also learn about the political history of Mauryan period, Post Mauryan period, Kushanas, Satavahanas,Cholas, Guptas and Post Gupta period.
3. They also learnt about the Brahmanical Tradtion: Varnashrama and Purusarthas i.e DHARMA, ARTHA, KAMA AND MOKHYA.They also have the idea of Budddhism and Jainism and the development of Mauryan And Gupta Art and Architecture.

CORE-IV SOCIALFORMATIONS AND CULTURAL PATTERN OF THE MEDIEVAL WORLD.

1. This paper helps the students to study about th Rome empire, RISE AND FALL OF JULIUS CEASER.
2. They will also learn about the Economic developments of Europe from 7^{th} to 14^{th} centuries.
3. The students also learn about the Medieval church and the background of Islam i.e
4. LIFE AND TEACHINGS OF PROPHET MUHAMMAD AS A FOUNDER OF ISLAM.and also the Islamic law i.e origins of Shariah.

CORE-V HISTORY OF INDIA III

1. 1.In this core paper students learn about the Early Medieval India- Sources, Legitimization of Kingship, Brahmanas, and Temples.They also know about the INVASION OF ARABS i.e Muhammad-Bin –Qasim and the ruler of Sindh which took place in 711 A.D. and resulted in the conquest of sindh.
2. The students also learn about the Agricultural expansion, Trade and commerce.
3. The students also acquire knowledge of Regional style of temple ART AND ARCHITECTURE.

CORE-VI RISE OF MODERN WEST –I

1. In this paper students are given the knowledge about the Geographical Discoveries of and the conquest of America.
2. They also learnt about the causes and results of Renaissance and the role played by MARTIN LUTHER Of Germany in the spread of Reformation Movement in Germany.
3. They also learnt about commercial Revolution and Growth of industries.

CORE – VII HISTORY OF INDIA IV

1. 1.This paper helps us to know about survey of sources Persian Tarikh Tradtion, Vernacular histories, Epigraphy. It also gives knowledge of the achievements of Balban ,Allauddin Khiliji, and Muhammad bin Tughlaq.
2. It also helps us to study the Rise and fall , regional art and architecture of Vijayanagara and Bahamani in Odisha.
3. Students will study about the Iqta system, Market regulation policy of Allauddin Khilij and they were also given the knowledge of life and teachings of kabir, Nanak, Sri Chaitanya and Ravidas of Bhakti and Sufi Movements.

CORE-VIII – RISE OF THE MODERN WEST- II

1. In this paper students learnt about the European crisis of 17th century European and also about the English civil war – Stuarts rule.
2. It also describes about Mercantilism and Industrial Revolution.
3. It also helps the students to know about the American war of Independence.

CORE-IX HISTORY OF INDIA V

1. In this paper the students learn about the establishments of Mughal rule,military technology etc.
2. They also know about Zabti, Mansabdari system and emergence of Marathas under Shivaji.
3. They also acquire knowledge about SUL-I –KUL of Akbar and Mughal art, architecture and paintaings.

CORE-X HISTORICAL THEORIES AND METHODS.

1. In this paper the students will acquire knowledge of Meaning, Nature and Scope of History.
2. They will also learn about the life and works of Herodotus, Thucydides, Polybius, Livy, and Tacitus and also church Historiography.
3. They also learn History relationship between Archeology, Anthpology,psychology,,literature, and Political science. They also learn about Methodology and about historical sources like written, oral, visual, and Archeological. Last part of this core helps us to know about the Historical facts, Theories of Causation, Objectivity.

CORE XI HISTORY OF MODERN EUROPE –I

1. This core is about Modern Europe. How French revolution occurred to end the rule of Bourboun dynasty –Louis IV, XV, XVI.
2. This core also helps the students to learn about the Napoleon Bonaparte,the Battle of Waterloo.
3. Last part of the course helped the students to know about Italian Unification and Germany unification.

CORE- XII HISTORY OF INDIA VII

1. This core helps to gain the knowledge about expansion and consolidation of colonial power.
2. It also helps to understand about land revenue systems like Permanent settlement, Ryotwari settlement and Mahalwari settlement.,Drain of wealth its causes and results.

Last part helps us to know about the Santhal Uprising,, Indigo Rebellion,and the Revolt of 1857 ,The First war of Independence.

CORE-XIII HISTORY OF INDIA –VIII

1. In this core they will learn about Brahmo Samaja, Arya Samaja, and Aligarh Movement.
2. In this core it discusses about the Formation of INDIAN NATIONAL CONGRESS and the emergence of Mahatma Gandhi into politics and his movements like Non cooperation, Civil Disobedience and Quit India movement.
3. Subash Chandra Bose and The role of INA is also discussed in this core last part of this core is about Partitition of India and Independence.

CORE-XIV HISTORY OF MODERN EUROPE II

1. In this core the students will learn about parliamentary democracy in Britain.
2. They will also learn about Luddite and Chartist movement.
3. The course highlights about the causes and results of :-
    - Russian revolution 1905 and 1917.
    - First World War.
    - Facism and Nazism.
    - Spanish civil war
    - Second World War.

DSE -I HISTORY AND CULTURE OF ODISHA –I

1. This paper gives an analysis about sources of Historical Geography- Kalinga, Utkal, and Kosala. It also gives emphasis on Kalinga war of Ashoka and Kharavela career and achievements.

   This paper also highlights about political History of :

    a. Matharas.
    b. Eastern Gangas.
    c. Sailodbhavas.
    d. Bhaumakaras.
    e. Somavamsis.
    f. Gangas.
    g. Gajapatis.
    h. Post Gajapatis upto 1568.
2. Lastly it discusses about social and cultural life in Early and Medieval Odisha and also trade and commerce.

DSE-II HISTORY AND CULTURE OF ODISHA- II

1. This paper highlights about the Afghan conquest and Mughal rule and British occupation in Odisha
2. It also gives an analysis of Ghumusar rebellion, Paik Rebellion, Revolt of 1857, Famine of 1866- causes and results.
3. It also highlights about Language movement ,Role of Krushna Chandra Gajapati in the creation of separate province of Odisha. Last part of the core course of DSE II describes about the Quit India Movement and the Merger of Princely States.

DSE-III HISTORY AND CULTURE OF ODISHA –III

1. This course focuses about the religious tradition – Budhism, Jainism,and Vaisnavism, Shaivism, and Tantricism in Odisha. It also gives emphasis on the growth of odiya Literature---i.e Sarala Mahabharata
2. It also describes about the various Budhhist places like –RATNAGIRI, LALITAGIRI, and UDAYAGIRI. It also gives knowledge about various temple Architecture like Parsurameswara, Mukteswara, Lingaraja, Jaganatha temple of Puri and Konarka.
3. It also describes about Christian missionaries , Mahima Culture , Brahmo Samaja and Arya Samaja.

GENERIC ELECTIVE PAPER-I

HISTORY OF INDIA –I

1. In this G.E for non History students taking elective as History they will acquire entire knowledge stating from Ancient Indian period till Medieval period. They will study about Vedic Age, Buddhism, Jainism, Mauryan empire, Gupta period and Harshavardhana.
2. In early medieval period they will study about Delhi Sultanate – conquests and administration.
3. Bhakti and Sufi movements were also given emphasis in this paper.
4. Akbar’s Sul-i-kul , zabti Mansabdari system and Mughal art and architecture were also given in the last part of this paper.

GENERIC ELECTIVE PAPER-II

HISTORY OF INDIA –II

1. This course highlights about expansion of British rule i.e Battle of Plassey, Buxar, Dual government in Bengal and Subsidiary alliance and Doctrine of Lapse.
2. The course also helps the students to acquire knowledge about Sanyasi rebellion, Kondh rebellion and Santal rebellion also Revolt of 1857.
3. Women Question and issues like Jyotiba Phule and caste system like Depressed classes were also discussed in this paper .Last part of this paper helps us to know about how Mahatma Gandhi fought for independence through different mass movements.

S.B.P. MAHAVIDYALAYA, SAMANTIAPALLI
MATHEMATICS COURSE OBJECTIVES AND COURSE OUTCOMES

CORE I: CALCULUS

OBJECTIVE: The main aim of this course is to equip the students with necessary analytic and technical skills to handle problems of mathematical nature as well as practical problems. More precisely, main target of this course is to explore the different tools for higher order derivatives, to plot the various curves and to solve the problems associated with differentiation and integration of vector functions.

OUTCOMES: On completion of the course students will be able to:

- Understand the nature of Hyperbolic functions.
- Find higher order derivatives and apply the Leibnitz rule to solve problems related to such derivatives.
- Plot the graphs of polynomials of higher degree.
- Use Leibnitz's rule to evaluate derivatives of higher order.
- Able to study the geometry of various types of functions, evaluate the area, volume using the techniques of integrations.
- Acquire knowledge on some the basic properties of vector functions and understand the applications of vector algebra (particularly, vector products) to geometry. Learn operations with vector-valued functions. Find the limits and verify continuity of vector functions. Differentiate and integrate vector functions of one variable.

CORE II: DISCRETE MATHEMATICS

OBJECTIVE: This is a preliminary course for the basic courses in mathematics and all its applications. The primary objective is to acquaint students with basic counting principles, set theory and logic, basic tools of theory of equations, matrix theory and graph theory, to understand their linkage to the real-world problems.

OUTCOMES: This course will enable the students to:

- Apply Euclid's algorithm and backwards substitution to find greatest common divisor.
- Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix, using rank.
- Find Eigen values and corresponding eigenvectors for a square matrix.
- Graphs, their types
- Perform matrix algebra with applications to Computer Graphics.

With the help of this course, they can study advance courses in mathematical modelling, computer science, statistics, physics, chemistry etc.

CORE III: REAL ANALYSIS

OBJECTIVE: The course will develop a deep and rigorous understanding of real line, its basic properties and studying Bolzano-Weierstrass Theorem, sequences and convergence, divergence of sequences, series of real numbers and its convergence etc. This is one of the core courses essential to start doing mathematics having vided range of applications in real life scenario.

OUTCOMES: This course will enable the students to:

- Understand many properties of the real line $\mathbb{R}$ and learn to define sequence in terms of functions from $\mathbb{N}$ to a subset of$\mathbb{R}$.
- Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.
- Apply the ratio, root, and alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.

Students will appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

CORE IV: DIFFERENTIAL EQUATIONS

OBJECTIVE: Differential Equations introduced by Leibnitz in 1676 models almost all Physical, Biological, Chemical systems in nature. The objective of this course is to familiarize the students with various methods of solving differential equations and to have a qualitative application through models. The students have to solve problems to understand the methods.

OUTCOMES: The course will enable the students to:

- Formulate Differential Equations for various Mathematical models.
- Solve first order non-linear differential equation and linear differential equations of higher order using various techniques.
- Apply these techniques to solve and analyze various mathematical models.
  This is also pre-requisite for studying the course in Partial Differential Equations and models dealing with Partial Differential Equations.

CORE V: THEORY OF REAL FUNCTIONS

OBJECTIVE: The objective of the course is to acquaint with the concepts and theorems of the elementary calculus of functions of one variable i.e., have knowledge on limit theorems on functions, limits of functions, continuity of functions and its properties, uniform continuity, differentiability of functions, algebra of functions and Taylor's theorem and, its applications.

To understand the integration of bounded functions on a closed and bounded interval and its extension to the cases where either the interval of integration is infinite, or the integrand has infinite limits at a finite number of points on the interval of integration.

The sequence and series of real valued functions, and an important class of series of functions (i.e., power series).

OUTCOMES: On completion of the course, students will be able to:

- Determine limit and continuity of the functions. Find Derivative of functions and their applications
- The geometrical properties of continuous functions on closed and bounded intervals.
- Use derivatives to analyse and sketch the graph of a function of one variable
- The applications of mean value theorem and Taylor's theorem. And estimate remainders of Taylor's theorem
- Riemann integrable functions, its properties and the applications of the fundamental theorems of integration.
- Beta and Gamma functions and their properties.
- The valid situations for the inter-changeability of differentiability and integrability with infinite sum, and approximation of transcendental functions in terms of power series.

CORE VI: GROUP THEORY-I

OBJECTIVE: Group theory is one of the building blocks of modern algebra. Objective of this course is to introduce students to basic concepts of group theory and examples and their properties. Learn Fermat's little theorem as a consequence of the Lagrange's theorem on finite groups. This course will lead to future basic courses in advanced mathematics, such as Group theory-II and ring theory

OUTCOMES: The course will enable the students to:

- Recognize the mathematical objects that are groups, and classify them as Abelian, cyclic and permutation groups, etc;
- Link the fundamental concepts of Groups and symmetrical figures;
- Analyze the subgroups of cyclic groups;
- Explain the significance of the notion of cosets, normal subgroups, and factor groups.
- After this course he can opt for courses in ring theory, field theory, commutative algebras, linear classical groups etc. and can be apply this knowledge to problems in physics, computer science, economics and engineering.

CORE VII: PARTIAL DIFFERENTIAL EQUATIONS AND SYSTEMS OF ODEs

OBJECTIVE: The main objectives of this course are to teach students to form and solve partial differential equations, learn classification of Partial Differential Equations and system of ordinary differential equations. And use them in solving some physical problems. In the process, students will be exposed to Charpit's Method, Jacobi Method and solve wave equation, heat equation, Laplace Equation etc.

OUTCOMES: The course will enable the students to:

- Formulate, classify and transform partial differential equations into canonical form.
- Solve linear and non-linear partial differential equations using various methods; and apply these methods in solving some physical problems.
- All these courses are important in engineering and industrial applications for solving boundary value problem.

CORE VIII: NUMERICAL METHODS AND SCIENTIFIC COMPUTING

OBJECTIVE: Calculation of error and approximation is a necessity in all real life, industrial and scientific computing. To comprehend various computational techniques to find approximate value for possible root(s) of non-algebraic equations, to find the approximate solutions of system of linear equations and ordinary differential equations, interpolation, differentiation, evaluating integration. Also, the use of Computer Algebra System (CAS) by which the numerical problems can be solved both numerically and analytically, and to enhance the problem solving skills.

OUTCOMES: The course will enable the students to learn the following:

- Some numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision.
- Interpolation techniques to compute the values for a tabulated function at points not in the table.
- Applications of numerical differentiation and integration to convert differential equations into difference equations for numerical solutions.

CORE IX: TOPOLOGY OF METRIC SPACES

OBJECTIVE: This is an introductory course in topology of metric spaces. The objective of this course is to impart basic knowledge pertaining to metric space such as open and closed sets, open and closed balls, neighbourhood, closure, continuous functions, connectedness and compactness etc.

OUTCOMES: On successful completion of the course, the students will enable to:

- Understand the basic concepts of metric spaces
- Correlate these concepts to their counter parts in real analysis
- Learn to Work with abstract topological spaces.
- Appreciate the abstractness of the concepts such as open balls, closed balls, compactness, connectedness etc. beyond their geometrical imaginations.
  This is a foundation course for all analysis courses in future.

CORE X: RING THEORY

OBJECTIVE: This is a second course in modern algebra which deals with the ring theory. Some basics of ring theory like rings, subrings, ideals, ring homomorphism and their properties and. This course is an integral part of any course on Modern algebra the others being Group theory and Field Theory.

OUTCOMES: After completing this course, the students would have learned about the fundamental concept of Rings, Fields, subrings, integral domains and the corresponding morphisms. This will help students to continue more courses in advanced Ring theory modules, Galois groups.

CORE XI: MULTIVARIATE CALCULUS

OBJECTIVE: To understand the extension of the studies of single variable differential and integral calculus to functions of two or more independent variables. The course will introduce partial derivatives and several of its consequences and will introduce double and triple integrals along with line integrals which are fundamental to all streams where calculus can be used.

OUTCOMES: This course will enable the students to learn:

- The conceptual variations when advancing in calculus from one variable to multivariable discussions.
- Inter-relationship amongst the line integral, double and triple integral formulations.
- Will have idea of basic vector calculus including green's theorem, divergence theorem and stokes theorem.
- Can also take up courses in calculus on manifolds, Differential geometry and can help in numerical computations involving several variables.

CORE XII: LINEAR ALGEBRA

OBJECTIVE: Linear algebra is a basic course in almost all branches of science. A full course in undergraduate program will help students in finding real life applications later. The objective of this course is to introduce a student the basics of linear algebra and some of its application.

OUTCOMES: On completion of this course, the student will be able to:

- The concept of linear independence of vectors over a field, the idea of a finite dimensional vector space, basis of a vector space and the dimension of a vector space.
- Basic concepts of linear transformations, the Rank-Nullity Theorem, matrix of a linear transformation, algebra of transformations and the change of basis.
- Compute inner products and determine orthogonality on vector spaces, including Gram-Schmidt orthogonalization to obtain orthonormal basis.
  It has applications in computer science, finance mathematics, industrial mathematics, bio mathematics and what not.

CORE XIII: COMPLEX ANALYSIS

OBJECTIVE: The objective of the course is aimed to provide an introduction to the theories for functions of a complex variable. The concepts of analyticity and complex integration are presented. The Cauchy's theorem and its applications, the calculus of residues and its applications are discussed in detail.

OUTCOMES: After the completion of the course it will enable the students to:

- Understand the significance of differentiability of complex functions leading to the understanding of Cauchy-Riemann equations.
- Evaluate the contour integrals and understand the role of Cauchy-Goursat theorem and the Cauchy integral formula.

CORE XIV: GROUP THEORY-II

OBJECTIVE: The objective of this course is to be exposed to more advanced results in group theory with applications to practical real-world problems. The course introduces results on automorphism, commutator subgroup, group action; Sylow theorems etc. and Classification of all finite Abelian groups (up to isomorphism) can be done.

OUTCOMES: The course shall enable students to learn about:

- Automorphisms for constructing new groups from the given group.
- Group actions, Sylow theorems and their applications to check non simplicity.
  The knowledge of automorphism helps to study more on field theory. This course helps to opt for more advanced courses in algebra and linear classical groups.

DISCIPLINE SPECIFIC ELECTIVE PAPERS

DSC-I: LINEAR PROGRAMMING

OBJECTIVE: The objective of this course is to familiarize industrial problems to students with various methods of solving Linear Programming Problems, Transportation Problems, Assignment Problems and their applications. Also, students will know the application of linear Programming method in Game Theory.

OUTCOMES: More knowledge on this topic in higher studies will help students to deal industrial models. This is also prerequisite for studying advanced courses in Nonlinear Programming Problems, Inventory Control Problem and Queuing Theory etc.

DSC-II: PROBABILITY AND STATISTICS

OBJECTIVE: The objective of the course is to expertise the student to the extensive role of statistics in everyday life and computation, which has made this course a core course in all branches of mathematical and engineering sciences. To make the students familiar with the basic statistical concepts and tools which are needed to study situations involving uncertainty or randomness.

OUTCOMES: Students will able to understand

- Uses of different measures of central tendencies and dispersion.
- The concept and applications of probability and statistics methods in modern science.
- Understand and apply the concept of Random Variable and Distribution Functions, correlations and relations and linear regression.
- Able to apply the knowledge the various probability distributions in practical applications.
- Central limit theorem, which helps to understand the remarkable fact that: the empirical frequencies of so many natural populations, exhibit a bell shaped curve.

DSC-III: DIFFERENTIAL GEOMETRY

OBJECTIVE: After learning methods on curve tracing and Analytic Geometry, the objective of this course is to teach Differential geometry of curves and surfaces which trains a student using tools in calculus to derive intrinsic properties of plain curves and space curves.

OUTCOMES: After completing this course a student will learn on serret-Frenet formulae, relation between tangent, normal and binormals, first and second fundamental forms and ideas on various curvatures. He has scope to take more advanced courses in surface theory and geometry.

DSC-IV: PROJECT WORK

GENERIC ELECTIVE PAPERS

GE-I: CALCULUS AND DIFFERENTIAL EQUATIONS

OBJECTIVE: Calculus invented by Newton and Leibnitz is powerful analytical tool to solve mathematical problems which arise in all branches of science and engineering. The main emphasis of this course is to equip the students with necessary analytic and technical skills to handle problems of a mathematical nature as well as practical problems using calculus and differential equation. The aim should be to expose the students to basic ideas quickly without much theoretical emphasis with importance on applications.

OUTCOMES: After completing the course, students are expected to be able to apply knowledge of calculus and differential equations in the areas of their own interest.

GE-II: ALGEBRA

OBJECTIVE: This is a preliminary course for the basic courses in mathematics like, abstract algebra and linear algebra. The objective is to acquaint students with the properties of natural numbers i.e. Euclidean algorithm, congruence relation, fundamental theorem of arithmetic, etc. The basics of linear algebra i.e. vector spaces, matrices are introduced here.

OUTCOMES: The acquired knowledge will help students to study further courses in mathematics like, group theory, ring theory and field theory and linear algebra. It has applications not only in higher mathematics but also in other science subjects like computer science, statistics, physics, chemistry etc.

SKILL ENHANCEMENT COMPULSORY COURSE

SECC II: QUANTITATIVE AND LOGICAL THINKING

OBJECTIVE: Quantitative and Logical Thinking aims to engage the students more creatively to improve their critical thinking skills.

OUTCOMES: The main intent of this paper is to strengthen the quantitative & logical thinking of UG students, majority of who are set to enter the job market with high hopes. A good command over Quantitative Aptitude and Logical Thinking is one skill which various companies expect from their prospective employees.

S.B.P. MAHAVIDYALAYA SAMANTIAPALLI, GANJAM
DEPARTMENT OF PHYSICS
Program/course specific outcome

COURSE CODE	COURSE NAME	PROGRAMME SPECIFIC OUTCOMES
C-1	**MATHEMATICAL PHYSICS-1**	• The emphasis of this course is on applications in solving problems of interest to physicists. The students are to be examined entirely on the basis of problems, seen and unseen. • This course paper deals with study of the function and their differentiability and continuity. Their approximation through Taylor series and binomial series. • Students can get a knowledge about the plotting of different functions. • This paper also includes the solution of various type of differential equation and their application. • Many times, students come across the terms like divergence, curl and gradient but they don't understand their physical significance. From this course they will learn the concepts to a depth. • Students can understand the use of the concept of partial differentiation in solving Physics situations which have more than one variable. • They can get a flavor of the units like Dirac-delta function, Vector differentiation and integration of vectors. Which are very much helpful in understanding the physics. • The orthogonal curvilinear coordinate system also there like an ornament in the course.
C-2	**MECHANICS**	• This is the fundamental block of Physics. It based on the Newtonian mechanics. • This paper gives the knowledge of Rotational dynamics which includes the idea of Moment of inertia, center of mass of a rigid body. • Elasticity, Fluid Dynamics also gives different flavor to this course. • The students will get some knowledge on gravitation and its application to different bodies and The chapter which contains Oscillation also very useful for the students. • Special theory of relativity contains Galilean transformation and Lorentz transformation and a lot more, which is very useful for the students in understanding electrodynamics.

C-3	**ELECTRICITY AND MAGNETISM**	• The students will learn fundamental properties of charged particles and electric fields in this course. • This course will also give students an understanding of the phenomena of electricity, magnetism, electromagnetic induction and electrical circuits which are extremely essential for higher studies in physics and also important for various engineering applications. • Student will understand the dielectric phenomenon and effect of electric field on dielectric. • Study the concept of magnetic field, magnetic field for steady currents using Biot-Savart's Law. Student will learn magnetic materials and its properties. • This course builds the basis for studying more advanced topics in electromagnetic theory. • The topic Which contains network theorems like Thevenin and Norton theorem are really very much helpful in solving electronic circuit problems.
C-4	**WAVES AND OPTICS**	• The students will gain basic knowledge about vibration, wave motion and wave theory of light. • Study of classical harmonic oscillator, Lissajous figures and wave propagation in vacuum and material media, and phenomena of interference and diffraction of light are important for further progress to more advanced topics of Physics. • Students get a flavor of a body oscillate without damping amplitude and what are the necessary conditions for it. we can set any object in the forced oscillations that is in continuous motion.
C-5	**MATHEMATICAL PHYSICS-2**	• In this course the students will learn more advanced topics of mathematical physics like Fourier series and their application to various physics problems. • Some special functions like Hermite, Legendre polynomial and their properties. • Partial differential equation with more than one variable and their solution will add some more spice to this course. • All these topics are very important for studying theoretical aspects of various branches of physics.
C-6	**THERMAL PHYSICS**	• Thermodynamics is introduced in this course and this covers fundamental laws of nature. Problems related to conversion of heat into work or the vice versa give rise to thermodynamics. • Students will learn the principle of operation of engines and refrigerators in this course. • The students learn the basic distribution laws which are obeyed by the molecules in the Thermal Physics part and the application to explain the basic laws of ideal gas. • This course also gives an idea about Maxwells thermodynamic relations and the important topic like Phase transition. • The limitation to explain different observed phenomena

		with ideal gas prescription leads the study of real gas and also conduction of heat in this course. • To understand the interrelationship between thermodynamic functions and ability to use such relationships to solve practical problems. • This part covers other very important aspects related to academic importance and also to industrial applications.
C-7	**ANALOG ELECTRONICS AND APPLICATIONS**	• This course forms the basis of electronics which is undoubtedly at the heart of most of the technological advances of the present era. • The students will understand the basic concepts of semiconductor physics and its application. • They will learn about the operation, characteristics and various applications of different type of diodes, transistors, field effect transistors, OPAMP and oscillators. • They will also have an idea about working of amplifier and regulated power supply.
C-8	**MATHEMATICAL PHYSICS-3**	• This course enables the students about the complex variable, their properties and their application to solve different type of contour integration. • The Integral transform like Fourier transform and Laplace transform and their application to different physical problem like solution of heat equation and wave equation. • This is also a useful paper in physics as it is a tool to solve many physical problems.
C-9	**MODERN PHYSICS**	• The students will be introduced to the fascinating world of quantum physics in this course. One cannot have any other tool except this branch to probe the physics in the micro world. • The students will become familiar with the mathematical tools and their physical implications and have a good practice in solving problems using those tools. • The students will learn basics of nuclear structure, radioactivity, nuclear fission & fusion. • Atomic models will add special attraction to this course. • Gain knowledge about Quantum mechanics, Atomic Spectra and Models, Wave Particle Duality. • This course is extremely important from theoretical as well as application point of view.
C-10	**DIGITAL ELECTRONICS**	• This topic intends to make the students familiar with the digital world. Starting from the introductory ideas of ICs, fundamental Gates and different number systems, the topic in steps is extended to implementation of different logic circuits. • They will also understand the principle of Adders and Substractors.

		• The students will be familiar with the basics of hardware; learn Counters, Registers, Flip-Flops, Data Processing Circuits and Computer Organization.
C-11	**QUANTUM MECHANICS**	• The students will be introduced to the fascinating world of quantum physics in this course. One cannot have any other tool except this branch to probe the physics in the micro world. • The students will able to be acquainted with Schrodinger equations and solutions of different potential problems. • The stationary state, Operators in quantum mechanics add different flavour to this course. • Analyse behaviour of atoms in electric & magnetic field, solving the quantum mechanics problem using scilab. • This course is extremely important from theoretical as well as application point of view.
C-12	**SOLID STATE PHYSICS**	• This is deals with the study of different type of crystal structures. • The study of the solid state encompasses the understanding of the organizational, mechanical, magnetic and electrical properties of the substance as well as the forces that bind the units into the solid state. • By far the most important subfield of solid-state physics in the 20th century is the study of semiconductors and solid-state electronics. • The syllabus also covers Superconductivity, the ability of certain materials to conduct electric current with practically zero resistance. Superconductors have been employed in, or proposed for use in, an enormous variety of application.
C-13	**ELECTROMAGNETIC THEORY**	• The students will go through a very important training in Electromagnetic Theory which is one of the fundamental components of classical physics. • The important set of relations of Electrostatics, Magnetostatics, Electro-magnetic Induction, taught in earlier Semesters find application in this topic. • The electromagnetic wave is generated naturally from the Maxwell's relations and the students will get the explanation of polarization and related optical and other aspects from this theory. • This is a advance course which will be useful for the students in research field.
C-14	**STATISTICAL MECHANICS**	• In Statistical Mechanics, the students will get an entry into the world of mechanics comprising of a collection of

		particles and will understand how to study the gross behaviour of a system. • This approach also establishes the laws of thermodynamics which are the fundamental rules of nature. • The different type of distribution laws is very important for a student. So this course is an important one. • The Quantum Statistical Mechanics gives the approaches to treat identical elementary particles which are frequently involved in theoretical and experimental research.
DSE-I	**CLASSICAL DYNAMICS**	• Students are to be examined on the basis of problems, seen and unseen On Classical Mechanics of Point Particles, Special Theory of Relativity, Relativistic kinematics. • The Lagrange principle and Hamilton principle are introduced in the course which are very useful in understanding the dynamic of a particle. • The four vector i.e., four momentum and four velocity also present in the course.
DSE-II	**NUCLEAR AND PARTICLE PHYSICS**	• Students are to be examined on the basis of problems, seen and unseen on General Properties of Nuclei, Nuclear Models, Radioactivity decay & Nuclear Reactions, Detector for Nuclear Radiations & Particle Accelerators, Particle physics. • The students of UG level will get the first lesson of Nuclear Physics in this topic. • The contents are very important from the viewpoints of both theory and applications. • Since it is very difficult to set up Nuclear Physics Laboratory at the UG level, the students are taught very carefully so that they may get the necessary inputs to carry on the study in Masters and in the Research level in reputed national and International Laboratories.
DSE-III	**NANOMATERIALS AND APPLICATIONS**	• This course will offer the entry into the Nano World. The basic physics of nano particles and their synthesis following different methodology will be taught. • The important characteristic features like optical properties, electron transport phenomena in nanostructures will be studied. • The students will be familiar in both the theoretical prospects of development and application of nano science in different fields. • Gained knowledge about this course which is based on applications in solving problems of interest to physicists on Nanoscale Systems, Synthesis Of Nanostructure Materials, Characterization.

		• Applications of nanoparticles, quantum dots, nanowires and thin films for photonic devices (LED, solar cells)
DSE-IV	**PROJECT**	• Students have to prepare and submit any short project in consultation with the Guide Teacher. • The topic can be experimental or theoretical project. • In this course the student can learn how to present in PowerPoint, how to write a short report on the project. • At the end their communication skill also be developed.

S.B.P. MAHAVIDYALAYA, SAMANTIAPALLI

PROGRAMME/COURSE SPECIFIC OUTCOMES

POLITICAL SCIENCE

Semester: 01

Core:-01 Understanding Political Theory

This course enables student to develop an understanding of basic concepts in political theory & engage in critical analysis of the subject. It also gives opportunity to the students to dwell upon contemporary theories & views of scholars creating a deeper understanding & gain knowledge. Its objective is to train citizens to think rationally about political questions & access correctly the political events of our time.

Core:-02 Constitutional; Government and Democracy in India

In this course the Constitution is a set of principles or precedents by which a state is governed. It is a set of rules and regulations which places the govt's power in the hands of the citizens in a democratic set up. It protects individual freedom & its fundamental principles that govern a country. In a constitutional form of government is that there are clear rules about how the government can operate. This makes governing orderly & predictable and lessens the threat of chaos and anarchy.

Semester: 02

Core-03 Political Theory- Concepts and Debates

This course introduces the fundamental approach to the study of political theory from the traditional to modern approaches. It also analyses important political concepts such as sovereignty, equality, liberty, justice, rights, democracy and others are studied so that student should reconcile political theory and practice through reflections on the ideas of political thinkers. The course will thus enable students to discuss major theories and concepts in political science and develop critical thinking in working of political system.

Core-04 Political Process in India

Actual politics in India diverges quite significantly from constitutional legal rules. An understanding of the political process thus calls for a different mode

of analysis - that offered by political sociology. This course maps the working of „modern" institutions, premised on the existence of an individuated society, in a context marked by communitarian solidarities, and their mutual transformation thereby. It also familiarizes students with the working of the Indian state, paying attention to the contradictory dynamics of modern state power.

Semester: 03

Core-05 Introduction to comparative Government and Politics

Comparing always leads to explore better-informed policy choices. Comparative Government and Politics is one of core papers in second year Political Science Honours. The purpose is to familiarise students about the patterns of government and working of institutions in various countries. It focuses on examining politics in historical framework while engaging with various themes of comparative analysis in developed and developing countries. The paper helps to develop -analytical thinking about various pattern of understanding i.e. Eurocentric and country specific view. The paper develops various perspectives (developmental, cultural, and sociological) to look at developed and developing countries. It enables the students to understand the basic themes of world political and sociological patterns like capitalism, socialism, colonialism and de-colonialization in the context of World historical time. It also familiarizes students with the constitutional design of various governments (Britain, Brazil, Nigeria and China). Along with it the course empowers students to understand the complexities of these countries and draw practical conclusions to enhance our day to policy analysis; as students are the future policy makers of the country.

Core-06 Introduction to Public Administration

The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration. The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments.

Core-07 Perspectives on International Relations

This paper seeks to equip students with the basic intellectual tools for understanding International Relation. It introduced students to some of the most important theoretical approaches for studying International Relation. This course develop the skills of understanding history of International Relations, diplomacy & various issues of International Relation.

Semester: 04

Core-08 Political Processes and institutions in comparative perspective

Core-09 Public policy and administration in India

The objective of the course is to provide discussion on the efficacy of practical sphere of governance along with prevalent structures of administration. It provides an interface between public policy and administration in India. It promotes understanding of the political, social, legal and economic environment in which public administration operates. It explores the concept of democratic decentralisation and local governance and see how it has paved the way for local governance in India. It also tries to situate 73rd and 74th constitutional amendment act in the context of local governance in India. It deals with issues of financialmanagement and familarises students with different types of budgeting along with the process of budgeting in India..

Core-10 Global Politics

This course introduced students to the key debates on the meaning and nature of globalization by addressing it's political, economic , social, cultural and technological dimentions.In keeping with the most important debates within the globalization discourse it imparts an understanding of the working of the world economy. The course also offers insight into keyContemporary global issues such as proliferation of nuclear weapons, ecological issues, international

terrorism and human security before concluding with a debate on the phenomenon of global coherence.

Semester-05

Core-11 Western Political Philosophy

i. The study of political thought in the historical perspective leads to mature thinking and enables the students to solve contemporary problems in a better way. This paper includes in its study the prominent thinkers of west of all ages- Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Hegel, Green, Burke, J.S.mill, Marx to name but a few.

ii. The Political thought of modern world is based on western political thought. It starts from the oldest known political thought provided by ancient philosophers of Greece like Plato and Aristotle. It goes on to renaissance thinkers like Machiavelli from Italy. From the 18th countries we get the political views of Hegel, up to the political thought of Marx, we get an overview and changes in the political thoughts down the ages.

Core-12 Indian political thought (Ancient and medieval)

i. A comprehensive, critical and comparative exposition of the political ideas in India from the time of many to Kabir political ideas as ground in difficult Sanskrit books have been expounded here on the basic of original texts. The likes of Barani, Abdul fazal and the political ideas of Bhakti era saints like Kabir have been discussed.

ii. It aims to unravel the ideas and thoughts of ancient and medieval thinkers and various intellectual tradition of the Indian subcontinent ancient and medieval Indian political thought will help the student to understand the basic

concepts of Indian political thought and issues such as community, state, inter-state relations, kingship, culture, religion, principles and policies of government as perceived by different thinkers. It has stimulated the students of political science to a deeper study of the political ideas of Indian thinkers.

Semester-06

Core-13 Contemporary Political Philosophy

Philosophy and politics are closely interlinked. Students will be exposed to manner in which the question of politics have been passed in terms that have implications for question of thought and existence. Political philosophy involves the analysis and evaluation of political institutions,practices and ideals.This introductory course focuses on literature from school half of 20th century onwards and covers topics that are relevance to contemporary political life.For example- Justice in the distribution of wealth,equality of opportunity,racial equality,rights of cultural minority,the value of democracy and extent of political obligation.

Core-14 Modern Indian political thought

i. They highlight the seminal role and importance of the over-all Indian heritage and the specific political culture and tradition. Indian political thought from Raja Ram Mohan Roy to Jay Prakash Narayan provides a summary of ten Indian political thinkers of modern era beginning with the period of renaissance. Each chapter includes a biographical sketch, seminal concepts and contributions of each thinker from a comparative perspective and ends with a critical appraisal.

ii. Studying modern Indian political thought can enable the young students to understand how the discipline provides an alternative to euro-centric ideas the students get a perspective on subjects like Swadeshi, Swaraj, religious reforms,

caste, democratic decentralization etc. the students to some of the keys modern Indian thinkers and their ideas which helped in shaping the society and polities of modern India.

GE-01 Feminism: Theory and practice

In this course, feminist theory helps us better understand & address unequal & oppressive gender relations. It sets an agenda for action, the aim of which is justice and equality for women everywhere. It is an entire philosophy aiming at actually changing the life of contemporary women & on the grounds that women & men have equal right in all areas of social life.

GE-02 Governance: issues and challenges

This paper revolves round the various dimensions of governance focussing on major debates in contemporary times. It lays emphasis on developing in students, understanding about the importance of 'governance' in relation to globalising world, environment, administrationand development by acquainting them with diverse good governance initiatives introduced in India.

DSE-01 Introduction to Human Rights

This paper deals with contemporary issues of human rights and incorporates the latest developments till date. It discusses various issues, views, problems, perspectives of Human rights.it also deals about Human Rights in India. Useful for students who are interested in promoting human rights and human rights education.DSE-02 Development process and social movements in contemporary India With a focus on India, this paper delves into the concept and definition of social movements from different perspectives. This paper is anchored around explorations that seek to unravel the ceaseless quest of development aspirations of social classes in India and policy responses by the

Indian state and its development agencies. Students get a perspective of Indian 'development process after 75 years of India as a sovereign, democratic nation. India has built a modern economy, remained a democracy, lifted millions out of poverty, has become a space and nuclear power and developed a robust foreign policy.

DSE-02 Development process and social movements in contemporary India

Under the influence of globalization, development processes in India have undergone transformation to produce spaces of advantage and disadvantage and new geographies of power. The high social reproduction costs and dispossession of vulnerable social groups involved in such a development strategy condition new theatres of contestation and struggles. A variety of protest movements emerged to interrogate and challenge this development paradigm that evidently also weakens the democratic space so very vital to the formulation of critical consensus. This course proposes to introduce students to the conditions, contexts and forms of political contestation over development paradigms and their bearing on the retrieval of democratic voice of citizens.

DSE-03 Indian's foreign policy in a changing world

This course's objective is to teach students the domestic sources and the structural constraints on the genesis, evolution and practice of India‟s foreign policy. The endeavour is to highlight integral linkages between the „domestic‟ and the „international‟ aspects of India‟s foreign policy by stressing on the shifts in its domestic identity and the corresponding changes at the international level. Students will be instructed on India‟s shifting identity as a

postcolonial state to the contemporary dynamics of India attempting to carve its identity as an „aspiring power‟. India‟s evolving relations with the superpowers during the Cold War and after, bargaining strategy and positioning in international climate change negotiations, international economic governance, international terrorism and the United Nations facilitate anunderstanding of the changing positions and development of India‟s role as a global player since independence. This course also covers the literature, research topics, and current issues in the area of foreign policy analysis -- an identifiable subfield within the study of international relations in political science. Research in this area is designed to answer the question: Why do states do what they do in international politics? The course is organized in a basic "levels of analysis" framework that roughly corresponds to the historical development of the study of foreign policy analysis. Particular attention will be paid to current decision making approaches to foreign policy.

DSE-IV :Project Work

The research experience of students is greatly enriched by early exposure to conducting research. There are numerous benefits of undergraduate students who get involved in research. They are better in understanding published works, determine an area of interest, can discover their position for research and may start their career as a researcher. It will help students to learn how to develop scientific research design in the study of public administration. To encourage the students to learn usage to describe and evaluate public policy implementation. To help students the logic of hypothesis testing in both quantitative and qualitative research.To make students to learn the methods of writing a research report.

SRI BHARAT PATI MAHAVIDYALAYA, SAMANTIAPALLI

PROGRAMM FOR OBJECTIVES & COURSE OUTCOMES

SUBJECT—ZOOLOGY

(As per Model CBCS Syllabus)

CORE COURSE-1

NON CHORDATAES -1

PROTISTA TO PSEUDOCOELOMATES

[CTREDITS: THEORY-4,PRACTICALS :2]

OBJECTIVES:

Learning objectives of core course -1 including the following:

1. To provide basic knowledge about how non chordate differs from chordate on the basis of general feature.
2. To provide overall idea about general classification regarding their general character from protista to nemahelminthes in invertebrates.
3. To provide knowledge about life cycle and pathogenicity of plasmodium genus including diagnosis and treatment .
4. To understanding of parasitic adaptation among helminthes and platihelminthes.
5. The purpose of practical tasks are to engage students in this paper regarding different phylum to understand process of scientific investigation and developed broad understanding about different species.

OUTCOME:

Studying in detail about the above students will be knowledgeable about the following things ;

1. The students will be understand the basic idea about different phyla of non-chordata .
2. The students will gain knowledge about diagnosis and treatment and root cause of protozoan disease .
3. Student will sensitize the parasitic adaptation among different organism.
4. “Scientific investigation” skill develops among students for practically involving in this in vertebrates paper**.**

CORE COURES- II
PRINCIPLE OF ECOLOGY

[CREDITS: THEORY-4,PRACTICALS :2]

OBJECTIVES:

Learning objectives are following by completion of course;

1. Introduction of ecology, Autoecology , Synecology with its suitable example.
2. Types of ecosystem with one example in detail.
3. Structure , function and types of food chain ,energy flow through the ecosystem,
4. Ecological pyramid Nutrient and biogeochemical cycle with one example of Nitrogen cycle.
5. Ecology on wildlife conservation and management.
6. Study of physical factors (Light and Temperature).
7. Attribute of population including density ,mortality, life tables, fecundity tables survivorship curves.
8. Dispersal and Dispersion of exponential and logistic growth.
9. Gause's principle with laboratory and field examples.
10. Structure and function of community and ecological succession with one example.
11. Introduction of biometry with graphical representation of data and Hypothesis and hypothesis testing (Chi- square test, t-test)

OUTCOMES;

After the completion of course following outcome will obtained:

1. Student will understand the importance of ecosystem for living.
2. Student will get clear idea about food chain and food web with suitable example.
3. Student will understand in detailed about energy flow through ecosystem.
4. Student explore on wild life conservation and management.
5. Student will understand about population density ,natality, mortality, life tables etc.
6. Student will get clear about biological data and graphical representation of data.
7. Student will learn sampling technique and hypothesis testing.
8. Student will explore more in practical classes about chi-square analysis using seeds/beads/drosophila.
9. Student will get more interested on field work by visiting national park /biodiversity park/ wild life sanctuary etc.
10. Student will able to solve problem on standard deviation through the practical classes.
11. Power of problem solving and keen observation on natural environment may be developed.

CORE PAPER III

Non –Chordates II:Coelomates

OBJECTIVITY:

Learning objectives are following by completion of course;

1. Evolution of coelom and metamerism ,General character and classification upto classes , Excretion in Annelida.
2. General character and classification up to classes, vision and Respiration in Arthropoda.
3. Metamorphosis in Insects, Social life in bees and termites,
4. General feature of onychophora and evolutionary significance.
5. General features classification up to classes of mollusc, Respiration in mollusca, torsion and detorsion in gastropoda, Evolutionary significance of trochophore larva.
6. General feature and classification up to classes of Echinodermata ,water vascular in Asteroidea, Larval form in echinodermata.
7. Study of different museum species in practical classes.

OUTCOMES:

Expected specific learning outcomes;

1. The learner will acquire knowledge about the evolution of coelom and metamerism and excretion in annelid .
2. The learner understand the classification of annelid , arthropoda ,mollusc , echinodermata and onycophora.
3. The learner will explore by go thoroughly in to the different museum specimen like chiton, dentalium, pila, doris,helix, cancer,julus etc.
4. The learner will understand the significance of larval form in echinodermata and molusca.
5. The learner will utilise the theoritical knowledge to differenciat naturally occuring species .

CORE COURES – IV

CELL BIOLOGY

OBJECTIVES:

Acquiring broad knowledge about the following:

1. Aim to understand the structure and physiological function of cell . the
2. Understand the basic difference between prokaryotic cell and eukaryotic cell.
3. Basic idea about cell organell with refers to structure and function including mitochondria, ribosome, ER , Golgi complex, nucleus and chromosome.
4. To understand how molecules transport across the plasma membrane by active and passive transport and facilitative diffusion.
5. To understand how cell under goes mitosis and meiosis.
6. To understand the significance of cell signaling with its suitable example.
7. To get basic idea about preparation of temporary stained squash of onion root tip to study various stages of mitosis.

OUTCOMES

1. Students will get basic idea about component of prokaryotic cell and eukaryotic cell.
2. Students will understand how mitochondria helps in energy production.
3. Practically involving in preparation of temporary and permanent slides will help students in further research field on cell biology.
4. Students will get clear idea about cell membrane with different model of cell membrane.
5. Students will skill full on preparation of slides to demonostrate the DNA by feulgen reaction ,DNA and RNA by Methyl green –pyronin (MGP)reaction.

CORE COURSE-V

DIVERSITY AND DISTRIBUTION OF CHORDATA

OBJECTIVES:

Acquiring broad knowledge about the following:

1. To understand in details about diversity and classification of phylum Chordates.
2. To get basic idea about retrogressive metamorphosis in Urochordates.
3. To study details about dipleurula concept and echinodermata theory of origin of Chordates.
4. To provide basic knowledge about migration of fishes including aquatic adaptation.
5. To get clear idea about evolutionary significance of Dipnoi and Amphibia.

6. General idea about parental care in Amphibian with suitable example.
7. To study detail in biting mechanism and poison apparatus of snakes.
8. Flight adaptation and migration in birds.
9. Theory of pertaining distribution of vertebrates in realms and Plate tectonic and continental drift theory.
10. Practically go through the museum specimen to detail idea about vast diversity species in Vertebrates.

OUTCOME:

Student get in detail idea about are following;

1. Broad knowledge about distribution of chordate with their specialized character.
2. Student will understand in detailed about migration in fishes as well as parental care.
3. Student will understand the biting mechanism and poison apparatus of snake.
4. Museum specimen helps the students to analyses different species with refer to general adaptation in practical classes.
5. Students will get clear idea about animal distribution according to their zoological realms.

CORE COURSE VI

Physiology –controlling and coordinating system

OBJECTIVE:

To make the students informed about the physiological aspects in animals by the following:

1. Structure ,location ,classification and function of tissues and tissue system.
2. Structure ,types and function of bone and cartilages with its ossification and bone growth and resorption.
3. Histology of different types of muscles, molecular and chemical basic of muscle contraction .
4. Structure of neuron ,resting membrane potential ,origin of action potential and its propagation across the myelinated and unmyelinated nerve fibers.
5. Types of synapse ,synaptic transmission and neuromuscular junction.
6. Reflex action and its types of reflex arch.
7. Histological structure and function of reproductive system including male and female gonads ,puberty, ovarian cycle, placental hormone, contraception in male and female.
8. Histology of endocrine system, structure and function of hypothalamus, pituitary, thyroid , parathyroid ,pancreas , adrenal.
9. Classification of hormone and Mechanism of hormone action including steroid and non steroid hormones.
10. Demonstration of unconditioned reflex action ,study of permanent slides and microtomy methodology.

OUTCOME:

After the completion of above objectives students will meet following outcome:

1. Students will able to explain the molecular and cellular basis of physiological function in animal.
2. Student will able to describe how neural reflexes control physiology variable function and behavior.
3. Student will able to explain ionic basis of the resting membrane potential , action potential, origin of action potential and its propagation.
4. Student will understand the role of myelination plays in nervous system .
5. Students will understand different glands with examples.
6. Students will able to compare and contrast endocrine and nervous control system.
7. Students will understand the key role of hormone action in cell signaling.
8. Students will able understand how hormone control the reproductive health.

CORE PAPER VII

Fundamental of biochemistry

OBJECTIVITY:

Learning objectives are following by completion of course;

1. Structure and biological importance of Carbohydrates with example of Monosaccharides ,disaccharides, polysaccaharides and Glycoconjugant.
2. Structure and significance of lipid,physiology important of saturated and unsaturated fatty acids ,tri-acylglycerols etc.
3. Structure and classification, general properties of alpha Amino acid.
4. Physiology importance of essential non essential Amino acid.
5. Structure , function and classification of immunoglobulins, antigenic determinat.
6. Structure of purines and pyrimidines, nucleoside ,nucleic acid and cot curves.
7. Denaturation and renaturation DNA with its types
8. Structure and types RNA.
9. Nomenclature and classification of Enzymes with its specificity and enzymes action.
10. Derivation of michaelis-menten equation,concept of Km, Vmax

OUTCOMES:

1. Student will understand the importance of carbohydrates , protein, lipid for living.
2. Student will understand clear idea about essential and non essential Amino Acid.
3. Student will get clear understanding of immunoglobulins and its importance.
4. Student will able to explain about enzymes and enzymes action.

CORE PAPER VIII

[COMPARATIVE ANATOMY OF VERTEBRATES]

OBJECTIVITY:

Learning objectives are following by completion of course;

1. Comparative structure and function and derivatives of integumentary system and skeletal system.
2. Comparative structure and function of digestive system and respiratory system.
3. Accessory respiratory organ among vertebrates with its function.
4. Comparative structure of circulatory and urinogenital system .
5. Comparative account of brain ,nervous system , cranial nerve and sense organ.

OUTCOME:

After the completion of above objectives students will meet following outcome:

1. Student will understand about derivatives of integument including scale .claw, nail, hair, feather etc.
2. Student will able to compare alimentary canal amonge different vertebrates.
3. Student will understand respiratory organ with example of skin, lungs , gills ,air sacs etc.
4. Student will able compare general plan of circulatory and evolution of urinogenital ducts.
5. Student will able to differentiat of spinal cord ,visual receptors ,mechano receptors etc

CORE PAPER IX

Physiology of life sustaining systems

OBJECTIVITY:

Learning objectives are following by completion of course;

1. To understand structural organization and function of gastrointestinal tract and associated glands.
2. Mechanical and chemical digestion protein , lipid ,carbohydrates , water mineral etc.
3. Physiological , chemical and mechanical of respiration, transport of oxygen and Carbon dioxide in blood.
4. Structure and function of kidney ,regulation of acid base balance.
5. Structure and function of mammalian heart.

OUTCOMES:

After the completion of above objectives students will meet following outcome:

1. Students will able to explain about ABO Blood group.
2. Students will able estimation of heamoglobin using Sahli shaemoglobinometer in practical class.
3. Student will able to count the WBC and RBC , Electrocardiagram and its regulation.
4. Student will understand the process of Haemopoiesis .
5. Student will able to prepare haemin haemochromogen crystal.

CORE –PAPER IX

[Biochemistry of metabolic processes]

OBJECTIVES:

Learning objectives are following by completion of course;

1. Overview of metabolism, shuttle system , and membranes transporters.
2. Carbohydrate metabolism by using the example Glycolysis, Citric Acid cycle etc.
3. Beta oxidation and omega oxidation of fatty acids with even and odd number of carbon atom.
4. Biosynthesis of amino acid with example ketogenic and glucogenic amino acid.
5. Oxidative phosphorylation and electron transport system.

Outcomes:

After completion of the course following outcome will be obtained;

1. Student will understand shuttle system, anabolism and catabolism etc.
2. Student will able to estimation total protein in given solution.
3. Student will analyses the enzymes action of Trypsin and Lipase.
4. Student will able understand the pathway of gluconeogenesis , transamination , deamination etc.
5. Student able to explain mitochondrial respiratory chain and Redox system.

CORE PAPER XI

[Molecular biology]

OBJECTIVITY

The Learning objectives are following by completion of course;

1. Salient features of Nucleic Acid , Watson and Crick model of DNA.
2. Semi conservative method of DNA replication and DNA repairing.
3. Mechanism of transcription and translation with its regulation of transcription.
4. Structure and function of post transcriptional modification and processing of transcriptional eukaryotic RNA.
5. Transcriptional regulation with example from Lac and Trp operon concept.

Outcomes;

After the completion of above objectives students will meet following outcome;

1. Student will understand the DNA replication , RNA transcription and translation .
2. Student will able to estimate the RNA using the orcinol reaction .
3. Student can interprets the electron micrographs /photographs by showing the DNA replication and transcription and split gene in practical classes.
4. Student will able distinguish between prokaryotic and eukaryotic translation transcription and translation.
5. Student able prepare culture media and growth of E.coli by spreading and streaking.

CORE XII

[Principles of genetics]

OBJECTIVITY:

Learning objectives are following by completion of course;

1. Mendelian principle with suitable example of monohybrid cross , dihybrid cross, incomplete dominance ,co dominance etc.
2. Cytological basis of crossing over and chromosomal mapping.
3. Molecular basis of mutation in relation to UV light and chemical mutagen.
4. Sex determination and extra chromosomal inheritance.
5. Pedigree analysis of some human inherited traits and Recombination of bacteria and virus.

OUTCOMES:

After the completion of above objectives students will meet following outcome:

1. Student will learn the basic principles of inheritance at the molecular and cellular level.
2. Student will test and deepen their mastery of genetics by applying this knowledge in a variety of problem solving .
3. Understand the principle that allow phylogenies to be estimated from trait data.
4. Practical methodology for applying for mendelian laws on heavily reliant on problem solving.

5. Student will able to solve the problem regarding pedigree analysis, sex determination and sex linked gene.

CORE XIII

DEVELOPMENTAL BIOLOGY

OBJECTIVITY:

Learning objectives are following by completion of course;

1. Historical perspective and basic concepts of developmental biology , gametogenesis and fertilization.
2. Early embryonic development with examples of frog and chick up to gastrulation, embryonic induction and organogenesis.
3. Implantation of embryo in humans , placenta structure and functions.
4. Post embryonic development &implication of developmental biology .
5. Hormonal regulation in amphibians and insects during metamorphosis.
6. Study of developmental stages and life cycle of drosophila from stock culture.

OUTCOMES:

After the completion of above objectives students will meet following outcome:

1. Student will understand the developmental biology by using the permanent slide of chick embyo, whole mounts of developmental stages of chick primitive streak (13 and 18 hour), 21,24,28,33,36,48,72, and 96 hour of incubation .
2. Student will able to explain about different section of placenta through practical classes by using slides and photography.
3. Student will explain about artificial fertilization with example of in vitro fertilization.
4. Student will get clear idea about gametogenesis and oogenesis etc.
5. Basic idea about teratogenic agents and their effects on embryo development.

CORE- XIV
[EVOLUTIONARY BIOLOGY]

OBJECTIVITY:

Learning objectives are following by completion of course;

1. Different theories of evidences of evolution and extinction, life's Beginning ,chemogeny etc.
2. Historical review of evolutionary concept with examples of Lamarckism ,Darwinism, Neo Darwinism etc.
3. Population genetics and Hardy-Weinberg Law with it's application.
4. Genetic drift ,role of migration and mutation in changing allele frequencies.
5. Species concept and speciation with its mode of speciation .

OUTCOMES:

After the completion of above objectives students will meet following outcome:

1. Student will able to understand about different fossils from models or using pictures
2. Student will able to demonstrate role of natural selection and genetic drift.
3. Student able to construct phylogeny trees with help of bioinformative tools.
4. Student able explain about origin and evolution of man , molecular analysis of human origins.
5. Student able to explain unique hominin characteristics contrasted with primates phylogeny.

DSE- I

[Animal behavior and chrono biology]

OBJECTIVITY:

Learning objectives are following by completion of course;

1. Origin and history of ethology ,objective of behavior, innate and instinct ,code breakers.
2. Pattern of behavior with example of associative learning ,classical and operant conditioning.
3. Social behavior and sexual behavior ,insects society with Honey bee as examples foranging in honey bee, mate choice ,intra and inter sexual selection.
4. Historical developments in chronobiology ,biology oscillation, relevance of biological clocks.
5. Concept of synchronization and masking , photic and non-photic zeitgebers.

OUTCOMES;

After the completion of above objectives students will meet following outcome:

1. Student will understand the nests and nesting habits of the birds and social insects.
2. Student will explores by visiting forest /wild life sanctuaries ,zoological park to study behavioral activities of animals .
3. Student will understand about photo taxis behavior in insects larvae.

4. Student will get clear understanding of sexual behavior ,asymmetry of sex,sexual dimorphism.
5. Student will understand importance of circadian function of humans in daily life.

DSE –II
[IMMUNOLOGY]

OBJECTIVITIES ;

Learning objectives are following by completion of course;

1. Historical perspectives of immunology ,innate immunity and adaptive immunity, passive and artificial immunity etc.
2. Immune dysfunction of autoimmunity with reference to Rheumatoid, Arthritis and tolerance.
3. Antigenicity and immunogenicity with antigen-antibody interaction .
4. Structure and functions types of immunoglobulin ,immune assays with examples of ELISHA and RIA.
5. Structure and function of MHC molecules ,cytokinin properties with its functions .

OUTCOMES:

After the completion of above objectives students will meet following outcome:

1. Student will understand about different lymphoid organs which involve in immunological activity.
2. Student will understand regarding histology of spleen, thymus and lymph nodes through slides and photography.
3. Student will able to determine ABO blood group as well as total WBC Counting.
4. Student will explore on demonstration of bone marrow smear to study immune cells.
5. Student able to explore on advance technique vaccine production.

DSE- III
WIDLIFE COSERVATION

OBJECTIVES:

Learning objectives are following by completion of course

1. To study of importance of conservation of wildlife with one example of world conservation strategies.
2. Conservation and protection law, wild animal of India and Odisha.
3. Habit analysis and physical parameters with example of tropography , geology, soil and water .
4. In situ and ex situ conservation ,wild life protection ,wildlife trade and related law.

OUTCOMES:

After the completion of above objectives students will meet following outcome;

1. Students will able to identify of flora ,mammalian fauna, avian fauna of India and Odisha.
2. Student will able demonstrate of basic equipment needed in wildlife studies use ,care and maintenance.
3. Student will able to demonstrate on different field techniques for flora and fauna.
4. Student will explore by visiting national park ,reserve forest, sanctuary.

DSE- IV

OBJECTIVES;

Learning objectives are following by completion of course;

A project method is a medium of instruction where student are given a number of projects or situation. Each students has to undertake a project work on topic " ECONOMIC ZOOLOGY". Economic zoology deals with the application of zoological knowledge for benefits of mankind . To culturing animals for mass production for human use and control the eradication animal that are injurious to man directly or indirectly.

OUTCOMES;

Studying economic zoology provide self employment opportunities. student will able understand economically beneficial animals, animal for scientific research ,animal as a food and food production etc.

GE- I

[ANIMAL DIVERSITY]

OBJECTIVITIES ;

Learning objectives are following by completion of course

1. General character of Protista, Porifera , Radiata, Aceomates and Pseudoceomates.
2. Lifecycle of plasmodium ,taeniasolium , with parasitic adaptations etc.
3. Social life of insects and torsion and de torsion in gastropods .
4. Larval form of in echinodermata and osmoregulation of fishes .
5. Parental care in fishes and amphibians ,adaptation of terrestrial life etc.

OUTCOMES,

After the completion of above objectives students will meet following outcome;

1. Student will able to understand general character of different phylum.
2. Student will able analyses the social life of insects and pearl formation.
3. Student will able understand the parasitic adaptation and its diagnosis.
4. Student will cable to identify the terrestrial organism and aquatic organism.
5. Student will analyses the importance of study of diversity of non chordates.

GE-II

[AQUATIC BIOLOGY]

OBJECTIVIES;

Learning objectives are following by completion of course

1. Brief introduction of the aquatic biomes with example of fresh water and marine water.
2. Origin and classification of lake as an ecosystems, lake morphometry etc.
3. Physio-chemical characteristics with example of light , temperature ,thermal stratification .
4. Different stages of stream development , adaptation of hill stream fishes.
5. Management of aquatic resource and conservation of it.

OUTCOMES;

After the completion of above objectives students will meet following outcome

1. Student able to determine the area of a lake using graphimetric and gravimetric method.
2. Student able identify the important macrophytes , phytoplanktons and zooplanktons.
3. Student will their knowledge by visiting to a sewage treatment plant /fisheries institution etc.
4. Student able to understand use of instrument to study the limnology and their significance.

S.B.P. MAHAVIDYALAYA, SAMANTIAPALLI, GANJAM

DEPARTMENT OF ODIA

COURSE/PROGRAM OUTCOME

ପ୍ରଥମ ପର୍ଯ୍ୟାୟ (1st Semester)

ପ୍ରଥମ ପତ୍ର (Core Course-1):

୧) ଉକ୍ତ ପତ୍ରଟି ଓଡ଼ିଆ ସାହିତ୍ୟର ପ୍ରାଚୀନତା ସମ୍ପର୍କରେ ସୂଚନା ଦିଏ ।

୨) ଏହାକୁ ପାଠକରି ଛାତ୍ରଛାତ୍ରୀମାନେ ଓଡ଼ିଆ ସାହିତ୍ୟର ପୃଷ୍ଠଭୂମି ସମ୍ପର୍କରେ ଜ୍ଞାନ ହାସଲ କରିଥାନ୍ତି ।

୩) ଏହା ଓଡ଼ିଆ ସାହିତ୍ୟର ଆଦିଯୁଗ ବା ସାରଳାଯୁଗ ଓ ତତ୍‌ପରବର୍ତ୍ତୀ ଯୁଗ ବା ପଞ୍ଚସଖା ଯୁଗ ସମ୍ପର୍କରେ ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କ ଧ୍ୟାନ ଆକର୍ଷଣ କରିଥାଏ ।

୪) ଭାଷାତାତ୍ତ୍ୱିକ ଓ ଐତିହାସିକ ଦୃଷ୍ଟିକୋଣରୁ ଉକ୍ତ ପତ୍ରଟି ଅତ୍ୟନ୍ତ ଗୁରୁତ୍ୱପୂର୍ଣ୍ଣ ଅଟେ ।

ଦ୍ୱିତୀୟ ପତ୍ର (Core Course-2):

୧) ଏହି ପତ୍ରଟି ଓଡ଼ିଆ ସାହିତ୍ୟର ମଧ୍ୟଯୁଗ ଉପରେ ସମ୍ପୂର୍ଣ୍ଣ ପର୍ଯ୍ୟବେକ୍ଷିତ ହୋଇଛି

୨) ଏହାକୁ ପାଠ କରିବା ଦ୍ୱାରା ଛାତ୍ରଛାତ୍ରୀମାନେ ତତ୍‌କାଳୀନ ଦରବାରୀ ସାହିତ୍ୟ ରାଜ ପୃଷ୍ଠପୋଷକତାରେ କିପରି ରୂପଗ୍ରହଣ କରିଥିଲା ସେ ସମ୍ପର୍କରେ ଅବଗତହୋଇଥାନ୍ତି ।

୩) ଏହି ପତ୍ରଟି ସୁବର୍ଣ୍ଣଯୁଗୀୟ ଓଡ଼ିଆ ସାହିତ୍ୟ କିପରି ବିଭିନ୍ନ କାବ୍ୟ ରଚନା କୌଶଳକୁ ଧାରଣ କରି ସଂସ୍କୃତ ସମକକ୍ଷ ଏକ ଉଚ୍ଚାଙ୍ଗ ସାହିତ୍ୟରେ ପରିଣତ ହୋଇଥିଲା ସେ ସମ୍ପର୍କରେ ଜ୍ଞାନ ପ୍ରଦାନ କରିଥାଏ ।

୪) ସାହିତ୍ୟ ଯେ ଏକାଧାରାରେ ଜ୍ଞାନ ଆହରଣ ଓ ଚିତ୍ତବିନୋଦନର ଗୋଟିଏ ଉପାୟ ତାହା ଉକ୍ତ ପାଠ୍ୟକ୍ରମ ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କୁ ଜଣାଇ ଦିଏ ।

ଦ୍ୱିତୀୟ ପର୍ଯ୍ୟାୟ (2nd Semester)

ତୃତୀୟ ପତ୍ର (Core Course-3):

୧) ଉକ୍ତ ପତ୍ରରେ ଆଧୁନିକ ଓଡ଼ିଆ ସାହିତ୍ୟର ଉତ୍ପତ୍ତି ଓ କ୍ରମବିକଶିତ ଧାରା ଆଲୋଚିତ ହୋଇଛି ।

୨) ବିଭିନ୍ନ ଜାତୀୟ ଆନ୍ଦୋଳନ ଓଡ଼ିଆ ସାହିତ୍ୟର ଧାରାକୁ କିପରି ପ୍ରଭାବିତ କରିଥିଲା ସେ ସମ୍ପର୍କରେ ଉକ୍ତ ପାଠ୍ୟଟି ସୂଚନା ଦିଏ ।

୩) ଓଡ଼ିଆ ଭାଷା ଓ ସାହିତ୍ୟର ଦୁର୍ଦ୍ଦିନ ସମୟରେ ଆଧୁନିକ ଯୁଗର ଓଡ଼ିଆ ସାଧକମାନେ କିପରି ପ୍ରଗତିର ମଙ୍ଗ ଧରି ଏହାକୁ ସୁରକ୍ଷା ପ୍ରଦାନ କରିଥିଲେ, ତାହା ଉପରେ ଉକ୍ତ ପତ୍ରରେ ଆଲୋକପାତ କରାଯାଇଛି ।

ଚତୁର୍ଥପତ୍ର (Core Course-4):

୧) ଉକ୍ତ ପତ୍ରଟି ପାଠକଲେ ଛାତ୍ରଛାତ୍ରୀମାନେ ସ୍ୱାଧୀନତା ପରବର୍ତ୍ତୀ ଓଡ଼ିଆ ସାହିତ୍ୟ ବିଷୟରେ ଜ୍ଞାନଲାଭ କରିଥାନ୍ତି ।

୨) ସ୍ୱାଧୀନତା ପରେ ବିଭିନ୍ନ କାରଣରୁ ସାହିତ୍ୟ ବ୍ୟକ୍ତିକୈନ୍ଦ୍ରିକ ହୋଇପଡିଥିବା କଥା ଏହି ପତ୍ରକୁ ପାଠ କଲେ ଜଣାଯାଏ ।

୩) ସାହିତ୍ୟର ନୂଆ ନୂଆ ବିଭାଗ ସମ୍ପର୍କରେ ମଧ୍ୟ ପାଠକମାନେ ଅବଗତ ହୋଇଥାନ୍ତି ।

ତୃତୀୟ ପର୍ଯ୍ୟାୟ (3rd Semester)

ପଞ୍ଚମ ପତ୍ର (Core Course-5):

୧) ଏହି ପତ୍ରଟି ଓଡ଼ିଆ ଭାଷାର ଉଦ୍ଭବ ଓ ବିକାଶକ୍ରମ ସମ୍ପର୍କରେ ତଥ୍ୟ ପ୍ରଦାନ କରିଥାଏ ।

୨) ଓଡ଼ିଆ ଲିପିର ଐତିହାସିକ ବିବର୍ତ୍ତନ ତଥା ପ୍ରାଚୀନତାକୁ ଆବିଷ୍କାର କରିବା ଉକ୍ତ ପାଠ୍ୟର ମୂଳ ଉଦ୍ଦେଶ୍ୟ ।

୩) ପ୍ରାଚୀନ ଅଭିଲେଖୀୟ ଓଡ଼ିଆ ଭାଷା ଆସ୍ତେ ଆସ୍ତେ କିପରି ଲିଖିତ ସାହିତ୍ୟରେ ରୂପାନ୍ତରିତ ହୋଇଥିଲା ତାହା ଉକ୍ତ ପାଠ୍ୟ ମାଧ୍ୟମରେ ଛାତ୍ରଛାତ୍ରୀଗଣ ଜ୍ଞାତ ହୋଇଥାନ୍ତି ।

ଷଷ୍ଠ ପତ୍ର (Core Course-6):

୧) ଏହି ପତ୍ରଟି ପାଠକଲେ ବିଦ୍ୟାର୍ଥୀମାନେ ଭାଷାର ସଂଜ୍ଞା ଓ ସ୍ୱରୂପ ସମ୍ପର୍କରେ ଜାଣି ପାରନ୍ତି ।

୨) ଭାଷାର ଉତ୍ପତ୍ତି ସମ୍ପର୍କରେ ମଧ୍ୟ ଧାରଣା ସୃଷ୍ଟି ହୁଏ ।

୩) ଭାଷାର ବିଭିନ୍ନ ରୂପ ଏବଂ ବିଭିନ୍ନ ଭାଷାର ପ୍ରଭାବ ଉକ୍ତ ପାଠ୍ୟର ସାରାଂଶ ।

ସପ୍ତମ ପତ୍ର (Core Course-7):

୧) ଏହି ପାଠ୍ୟରୁ ପିଲାମାନେ ଓଡ଼ିଆ ବର୍ଣ୍ଣମାଳା ଓ ବାକ୍ୟର ଗଠନ ରୀତି ସମ୍ପର୍କରେ ଜ୍ଞାନ ଲାଭ କରିଥାନ୍ତି ।

୨) ଓଡ଼ିଆ ବ୍ୟାକରଣର ବିଭିନ୍ନ ବିଭାଗ ଉପରେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଜାଣିବାକୁ ପାଇଥାନ୍ତି ।

୩) ତତ୍ ସହିତ ଓଡ଼ିଆ ଶବ୍ଦଭଣ୍ଡାର କିପରି ସମୃଦ୍ଧି ଲାଭ କରିଛି ସେ ବିଷୟରେ ମଧ୍ୟ ଶିକ୍ଷାଦାନ କରାଯାଏ ।

ଚତୁର୍ଥ ପର୍ଯ୍ୟାୟ (4th Semester)

ଅଷ୍ଟମ ପତ୍ର (Core Course-8):

୧) ଉକ୍ତ ପାଠ୍ୟରେ ଓଡ଼ିଶାର ଲୋକ ସଂସ୍କୃତି ଓ ସାହିତ୍ୟ ବିଷୟରେ ଜ୍ଞାନ ପ୍ରଦାନ କରାଯାଏ ।

୨) ଲୋକ ସାହିତ୍ୟର ପ୍ରଭାବ ଲୋକ ଜୀବନକୁ କିପରି ପରିପୃଷ୍ଟ କରିଛି ସେ ସମ୍ପର୍କରେ ପିଲାମାନେ ଜାଣି ପାରନ୍ତି ।

୩) ଅତ୍ୟାଧୁନିକ ଯୁଗରେ ଲୋକବିଦ୍ୟାର ପ୍ରାସଙ୍ଗିକତାକୁ ଉପଲବ୍ଧି କରାଏ ଉକ୍ତ ପାଠ୍ୟକ୍ରମ ।

ନବମ ପତ୍ର (Core Course-9):

୧) ଉକ୍ତ ପାଠ୍ୟକୁ ଅଧ୍ୟୟନ କରି ଛାଛାତ୍ରୀମାନେ ପ୍ରାଚ୍ୟ ଓ ପାଶ୍ଚାତ୍ୟ ସାହିତ୍ୟ ତତ୍ତ୍ୱ ସମ୍ପର୍କରେ ସବିଶେଷ ତଥ୍ୟ ଜାଣିପାରନ୍ତି ।

୨) ଉଭୟ୍ ସାହିତ୍ୟ ତତ୍ତ୍ୱ ବିନା ସାହିତ୍ୟ, 'ସାହିତ୍ୟ' ପଦବାଚ୍ୟ ନ ହୋଇପାରେ ଏକଥା ମଧ୍ୟ ପିଲାମାନେ ଉପଲବ୍ଧି କରନ୍ତି ।

୩) ଏହି ତତ୍ତ୍ୱ ଗୁଡିକ ସାହିତ୍ୟକୁ କାଳାତୀତ କରିବାରେ ସାହାଯ୍ୟ କରିଥାନ୍ତି, ସେ କଥା ପିଲାମାନେ ହୃଦୟଙ୍ଗମ କରିଥାନ୍ତି ।

ଦଶମ ପତ୍ର (Core Course-10):

୧) ଏହି ପତ୍ରରେ ଓଡ଼ିଆ ସାହିତ୍ୟ କିଛି ପ୍ରମୁଖ କବି ମାନଙ୍କର କୃତି ସମ୍ପର୍କରେ ଶିକ୍ଷା ପ୍ରଦାନ କରାଯାଏ ।

୨) ଏହି ପାଠ୍ୟ ମାଧ୍ୟମରେ ବିଦ୍ୟାର୍ଥୀମାନେ ଓଡ଼ିଆ ସାହିତ୍ୟକୁ ସାହିତ୍ୟିକ ମାନଙ୍କର ଯେଉଁ ବଳିଷ୍ଠ ଅବଦାନ ରହିଥିଲା ସେ ବାବଦରେ ଶିକ୍ଷାଲାଭ କରନ୍ତି ।

୩) ସାହିତ୍ୟର ପ୍ରଭାବ ସମାଜ ଉପରେ କିଭଳି ପଡିଥାଏ ତାହା ଛାତ୍ରଛାତ୍ରୀମାନେ ଜାଣିବାକୁ ପାଇଥାନ୍ତି ।

ପଞ୍ଚମ ପର୍ଯ୍ୟାୟ (5th Semester)

ଏକାଦଶ ପତ୍ର (Core Course-11):

୧) ସମାଜରେ ଘଟୁଥିବା ବିଭିନ୍ନ ବାସ୍ତବ ଘଟଣାସାହିତ୍ୟର ରୂପ ଲାଭ କରେ- ଉକ୍ତ ପତ୍ର ପଢିବା ପରେ ଏହି ଧାରଣାଟି ସୃଷ୍ଟି ହୋଇଥାଏ ।

୨) ସମାଜର ବାସ୍ତବ ପ୍ରତିଛବି ଯେ ସାହିତ୍ୟ- ଏ ଉକ୍ତିଟିର ସତ୍ୟାସତ୍ୟ ଉପଲବ୍ଧି ହୋଇଥାଏ ।

୩) ସାହିତ୍ୟିକମାନେ ସାହିତ୍ୟର ବିଭିନ୍ନ ବିଭାଗରେ ଲେଖନୀ ଚାଳନା କରି ସଚେତନତାର ବାର୍ତ୍ତା ପ୍ରଦାନ କରିଥାନ୍ତି । ଏହାହିଁ ଉକ୍ତ ପାଠ୍ୟରୁ ଅବବୋଧ ହୁଏ ।

ଦ୍ୱାଦଶ ପତ୍ର (Core Course-12):

୧) ଉକ୍ତ ପତ୍ରଟି ଓଡ଼ିଆ କଥା ସାହିତ୍ୟ ବାବଦରେ ତଥ୍ୟ ପ୍ରଦାନ କରିଥାଏ ।

୨) ଆଦିମଯୁଗରୁ ଆରମ୍ଭ କରି ଆଧୁନିକ ଯୁଗ ପର୍ଯ୍ୟନ୍ତ ଓଡ଼ିଆ କଥାସାହିତ୍ୟର ମୋଡ କିପରି ପରିବର୍ତ୍ତିତ ହୋଇଚାଲିଛି ସେ ବିଷୟରେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଜାଣିଥାନ୍ତି ।

୩) ସାହିତ୍ୟ ଯେ ଏକ ପ୍ରବହମାନ ଧାରା- ତାହା ସ୍ପଷ୍ଟ ହୁଏ ।

ଷଷ୍ଠ ପର୍ଯ୍ୟାୟ (6th Semester)

ତ୍ରୟୋଦଶ ପତ୍ର (Core Course-13):

୧) ଯୁଗେ ଯୁଗେ ସାହିତ୍ୟ ଜାତୀୟତା ଆନୟନରେ ପ୍ରମୁଖ ଭୂମିକା ଗ୍ରହଣ କରି ଆସିଛି। ଉକ୍ତ ପତ୍ରର ପାଠ୍ୟକୁ ପଢିଲେ ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କ ମନରେ ଏହି ଧାରଣା ଜନ୍ମ ନିଏ ।

୨) ସାହିତ୍ୟ ତାର ଭାବ ଜଗତରେ କୌଣସି ସୀମା ସରହଦକୁ ମାନେ ନାହିଁ। ତାହା ସବୁ ଭୌଗୋଳିକ, ରାଜନୀତିକ, ଅର୍ଥନୀତିକ, କୂଟନୀତିକ ତଥା ସାମାଜିକ ବାଧା-ବନ୍ଧନର ଉର୍ଦ୍ଧ୍ୱରେ ରହି ମାନବିକତାର ପ୍ରଚାର କରେ- ଏହାହିଁ ଉକ୍ତ ପତ୍ରର ପଠିତବ୍ୟ ବିଷୟ୍ ।

୩) ଏହି ପତ୍ର ମାଧ୍ୟମରେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଦେଶ ବିଦେଶର ସମାଜ, ସାହିତ୍ୟ, ସଂସ୍କୃତି ସମ୍ପର୍କରେ ଅବଧାରିତ ହୋଇଥାନ୍ତି ।

ଚତୁର୍ଦ୍ଦଶ ପତ୍ର (Core Course-14):

୧) ଉକ୍ତ ପତ୍ରର ପାଠ୍ୟ ପିଲାମାନଙ୍କ ବ୍ୟକ୍ତିତ୍ୱର ବିକାଶରେ ସାହାଯ୍ୟ କରିଥାଏ ।

୨) ଏଥିରେ ନିଯୁକ୍ତି ତଥା ଆଧୁନିକ ଲିଖନ କୌଶଳ ସମ୍ପର୍କରେ ଶିକ୍ଷା ପ୍ରଦାନ କରାଯାଏ ।

୩) କାର୍ଯ୍ୟାଳୟ ଭିତ୍ତିକ ବ୍ୟବହାର ଉପଯୋଗୀ ଲିଖନ ଶୈଳୀ ବିଷୟରେ ବିଦ୍ୟାର୍ଥୀମାନେ ଜ୍ଞାନ ହାସଲ କରିଥାନ୍ତି ।

୪) ଉକ୍ତ ପାଠ୍ୟରେ ଓଡ଼ିଆ ଭାଷାରେ କମ୍ପ୍ୟୁଟର ବ୍ୟବହାର ସମ୍ପର୍କରେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଶିକ୍ଷାଲାଭ କରିଥାନ୍ତି ।

ଶୃଙ୍ଖଳା କୈନ୍ଦ୍ରିକ ଇଚ୍ଛାଧୀନ ପାଠ- ଓଡ଼ିଆ
(Discipline Specific Elective - Odia)

ପଞ୍ଚମ ପର୍ଯ୍ୟାୟ (5th Semester)

ପ୍ରଥମ ପତ୍ର (DSE-1):

୧) ଉକ୍ତ ପତ୍ରଟି ଓଡ଼ିଶାର ଇତିହାସ ଉପରେ ପର୍ଯ୍ୟବେଷିତ ।

୨) ଏହାଦ୍ୱାରା ଛାତ୍ରଛାତ୍ରୀମାନେ ଓଡ଼ିଶାର ଗୌରବମୟ ଇତିହାସ ଏବଂ ତା'ଉରପୁତ୍ରମାନଙ୍କ ସମ୍ପର୍କରେ ଜାଣିପାରନ୍ତି ।

୩) ବିଦ୍ୟାର୍ଥୀମାନେ ଓଡ଼ିଶାରେ ପ୍ରଚଳିତ ହୋଇ ଆସୁଥିବା ବିଭିନ୍ନ ଧର୍ମଧାରା ସମ୍ପର୍କରେ ଜ୍ଞାନଲାଭ କରିଥାନ୍ତି ।

୪) ଓଡ଼ିଶାର ବିଭିନ୍ନ ସଂସ୍କୃତି ତଥା ଓଷା, ବ୍ରତ, ପର୍ବପର୍ବାଣି ସମ୍ପର୍କରେ ମଧ୍ୟ ତାଙ୍କର ଦୃଢ ଧାରଣା ଜନ୍ମ ନିଏ ।

ଦ୍ୱିତୀୟ ପତ୍ର (DSE-2):

୧) ଉକ୍ତ ପତ୍ରର ପାଠ୍ୟକୁ ପାଠ କରିବା ଦ୍ୱାରା ବିଦ୍ୟାର୍ଥୀମାନେ ଓଡ଼ିଆରେ ଲିଖିତ ଶିଶୁସାହିତ୍ୟ ଏବଂ ତାହାର ସ୍ରଷ୍ଟାଙ୍କ ବିଷୟରେ ଜାଣିବାକୁ ପାଇଥାନ୍ତି ।

୨) ବିଜ୍ଞାନ ଭିତ୍ତିକ ସାହିତ୍ୟ ସ୍ୱଳ୍ପ ହେଲେ ମଧ୍ୟ ସେହି ବିଭାଗ ପ୍ରତି ପିଲାମାନଙ୍କର ଦୃଷ୍ଟି ଆକର୍ଷଣ କରାଯାଇଥାଏ ।

୩) ବିଜ୍ଞାନର ଜଟିଳ ରହସ୍ୟକୁ ସାହିତ୍ୟ ମାଧ୍ୟମରେ ଛାତ୍ରଛାତ୍ରୀ ମାନଙ୍କ ନିକଟରେ ପହଞ୍ଚାଇବା ହେଉଛି ଏହି ପତ୍ରର ଉଦ୍ଦେଶ୍ୟ ।

ଷଷ୍ଠ ପର୍ଯ୍ୟାୟ (6th Semester)

ତୃତୀୟ ପତ୍ର (DSE-3):

୧) ଉକ୍ତ ପତ୍ରଟି ଓଡ଼ିଆ ପଦ୍ୟ ସାହିତ୍ୟ ସମ୍ପର୍କରେ ବିଦ୍ୟାର୍ଥୀମାନଙ୍କୁ ଅବଗତ କରାଏ ।

୨) ତତ୍‌ସହିତ ଓଡ଼ିଆ ଗଦ୍ୟ ସାହିତ୍ୟ ଯେ ଆଧୁନିକ ସାହିତ୍ୟିକମାନଙ୍କର ଭାବ ପ୍ରକାଶର ମୁଖ୍ୟ ଅଙ୍ଗ ଏହି ଅବଧାରଣା ମଧ୍ୟ ସୃଷ୍ଟି କରେ ।

୩) ସାହିତ୍ୟ ଯେ ସ୍ରଷ୍ଟା ମାନସର ସୁକ୍ଷ୍ମ ଅଭିବ୍ୟକ୍ତି, ଏହି କଥାଟି କୋମଳମତି ଜିଜ୍ଞାସୁ ଶିକ୍ଷାର୍ଥୀମାନଙ୍କୁ ଉକ୍ତ ପାଠ୍ୟଟି ସୂଚେଇ ଦିଏ ।

ଚତୁର୍ଥ ପତ୍ର (DSE-4):

୧) ଉକ୍ତ ପାଠ୍ୟରେ ଓଡ଼ିଆ ସାହିତ୍ୟର ଅତ୍ୟାବଶ୍ୟକୀୟ ଦିଗଗୁଡିକ ପ୍ରତି ସଚେତନତା ସୃଷ୍ଟି କରାଯାଇଥାଏ ।

୨) ସମାଲୋଚନା, ଅନୁବାଦ ଓ ସମ୍ପାଦନା ପରି ସାହିତ୍ୟର ପରିବର୍ଦ୍ଧିଷ୍ଣୁ ବିଷୟ ସମ୍ପର୍କରେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଅବଗତ ହୋଇଥାନ୍ତି ।

୩) ବିଦ୍ୟାର୍ଥୀମାନଙ୍କୁ ସାହିତ୍ୟିକ ଗବେଷଣାର ବିଭିନ୍ନ ଦିଗ ଉପରେ ଶିକ୍ଷାପ୍ରଦାନ କରାଯାଇଥାଏ। ଯାହା ଫଳରେ ସେମାନେ ଭବିଷ୍ୟତରେ ଗବେଷଣା କାର୍ଯ୍ୟରେ ସଠିକ୍ ମନୋନିବେଶ କରିପାରନ୍ତି ।

୪) ଓଡ଼ିଆ ସାହିତ୍ୟର ବିଭିନ୍ନ ସମସ୍ୟା ଏବଂ ତା'ର ସମାଧାନ ସମ୍ପର୍କରେ ଉକ୍ତ ପାଠ୍ୟକ୍ରମରେ ବିଦ୍ୟାର୍ଥୀମାନଙ୍କୁ ଅବଗତ କରାଯାଇଥାଏ । ଫଳରେ ସେମାନେ ସତର୍କତାର ସହିତ ଉଚିତ କାର୍ଯ୍ୟ କରି ସଫଳତା ପ୍ରାପ୍ତ ହୋଇଥାନ୍ତି ।

୫) କୌଣସି ଏକ ନିର୍ଦ୍ଦିଷ୍ଟ ବିଷୟବସ୍ତୁ ଉପରେ ସେମାନେ ଏକ ସଂକ୍ଷିପ୍ତ ଗବେଷଣାତ୍ମକ ନିବନ୍ଧ ପ୍ରସ୍ତୁତ କରିଥାନ୍ତି ।

ଅନ୍ତର୍ବିଷୟ ଇଚ୍ଛାଧୀନ ପାଠ - ଓଡ଼ିଆ
(Generic Elective - Odia)

ପ୍ରଥମ ଓ ତୃତୀୟ ପର୍ଯ୍ୟାୟ
(1st & 3rd Semester)

ପ୍ରଥମ ପତ୍ର (GE-1):

୧) ଉକ୍ତ ପତ୍ରରେ ବିଭିନ୍ନ ଗଣମାଧ୍ୟମ ସମ୍ପର୍କରେ ପିଲାମାନେ ଜାଣିପାରନ୍ତି ।

୨) ବିଭିନ୍ନ କାର୍ଯ୍ୟ ବା ଉଦ୍ଦେଶ୍ୟରେ ବିଭିନ୍ନ ଗଣମାଧ୍ୟମରେ କିପରି ବିଜ୍ଞାପନ ଦିଆଯାଏ ସେ ବିଷୟରେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଜ୍ଞାନ ହାସଲ କରିଥାନ୍ତି । ଯାହା ତାଙ୍କୁ ଭବିଷ୍ୟତରେ ବହୁ କ୍ଷେତ୍ରରେ ସାହାଯ୍ୟ କରିଥାଏ ।

୩) ଛାତ୍ରଛାତ୍ରୀମାନେ ବିଭିନ୍ନ କାର୍ଯ୍ୟାଳୟ ଏବଂ ବ୍ୟବସାୟିକ ପ୍ରତିଷ୍ଠାନ ମାନନ୍‌ଗ୍‌କରେ କାର୍ଯ୍ୟ କରିବାର ଦକ୍ଷତା ହାସଲ କରନ୍ତି ।

୪) ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କରବୃତ୍ତିଗତ କାର୍ଯ୍ୟ ପାଇଁ ଏହା ବହୁମାତ୍ରାରେ ସହାୟକ ହୋଇଥାଏ ।

ଦ୍ୱିତୀୟ ଓ ଚତୁର୍ଥ ପର୍ଯ୍ୟାୟ
(2nd & 4th Semester)

ଦ୍ୱିତୀୟ ପତ୍ର (GE-2) :

୧) ଏହି ପତ୍ରଟି ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କୁ ସାହିତ୍ୟମନସ୍କ କରିଥାଏ ।

୨) ସେମାନେ ବିଭିନ୍ନ କୃତବିଦ୍ୟ ସାହିତ୍ୟିକମାନଙ୍କର କୃତିକୁ ଅଧ୍ୟୟନ କରିବା ଫଳରେ ସେମାନଙ୍କ ମନରେ ସହୃଦୟତା, ଦୟା, କ୍ଷମା, ପରୋପକାର ଇତ୍ୟାଦି ମାନବିକ ଗୁଣର ପରିପ୍ରକାଶ ହୁଏ ।

୩) ଏହି ପାଠ୍ୟ ମାଧ୍ୟମରେ ସେମାନେ ଜଣେ ଜଣେ ସୁନାଗରିକରେ ପରିଣତ ହୋଇ ନୀତିନିଷ୍ଠ ଜୀବନ ଯାପନ କରିବାରେ ସଫଳ ହୋଇଥାନ୍ତି ।

ଦକ୍ଷତାବର୍ଦ୍ଧକ ବାଧ୍ୟତାମୂଳକ ପାଠ୍ୟକ୍ରମ
Ability Enhancement Compulsory Course
(ଯୋଗାଯୋଗମୂଳକ ମାତୃଭାଷା ଓଡ଼ିଆ)
(Communicative Language-Odia)

୧) ଉକ୍ତ ପତ୍ରଟିକୁ ପାଠ କରିବା ଫଳରେ ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କର ଓଡ଼ିଆ ଭାଷାରେ ଯୋଗାଯୋଗ କରିବାର ଦକ୍ଷତା ବୃଦ୍ଧି ପାଇଥାଏ ।

୨) ସେମାନେ ବୃତ୍ତିଗତ କ୍ଷେତ୍ରରେ ସଫଳତା ଲାଭ କରିଥାନ୍ତି ।

୩) ଉଭୟ କଥିତ ଓ ଲିଖିତ ଭାଷାରେ ନିଜର ପାରଦର୍ଶିତା ପ୍ରତିପାଦନ କରିପାରିଥାନ୍ତି ।

୪) ବିଦ୍ୟାର୍ଥୀମାନଙ୍କର ଭାଷାଗତ ଓ ଉଚ୍ଚାରଣଗତ ତ୍ରୁଟିରେ ସୁଧାର ଆସିଥାଏ ।

୫) ଉକ୍ତ ପତ୍ରଟି ପାଠ କରିବା ଦ୍ୱାରା ଛାତ୍ରଛାତ୍ରୀମାନେ ନିଜ ମାତୃଭାଷା ସାହାଯ୍ୟରେ ଅନ୍ୟାନ୍ୟ ଭାଷାରେ ମଧ୍ୟ ପାରଙ୍ଗମ ହୋଇପାରିଥାନ୍ତି ।

COURSE OUTCOME
ପାଠ୍ୟକ୍ରମ ଅନୁଭାବ

ଓଡ଼ିଆ ସମ୍ମାନ ଶ୍ରେଣୀ ନିମନ୍ତେ ଉଦ୍ଦିଷ୍ଟ ଉକ୍ତ ପାଠ୍ୟକ୍ରମ ଏକ ଉଚ୍ଚକୋଟିର ତଥା ପୂର୍ଣ୍ଣାଙ୍ଗ ପାଠ୍ୟକ୍ରମ । ଏହାକୁ ଅଧ୍ୟୟନ କଲେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଓଡ଼ିଆ ଭାଷା ଓ ସାହିତ୍ୟ ସମ୍ପର୍କରେ ପୁଙ୍ଖାନୁପୁଙ୍ଖ ଜ୍ଞାନ ହାସଲ କରିଥାନ୍ତି । ଏଥିରେ ଓଡ଼ିଆ ଭାଷା ଓ ସାହିତ୍ୟର ଉତ୍ପତ୍ତି ଓ କ୍ରମବିକଶିତ ଧାରା ସ୍ଥାନ ପାଇ ଥିବାରୁ ପିଲାମାନେ ବିଶ୍ୱସାହିତ୍ୟ ତଥା ଭାରତୀୟ ସାହିତ୍ୟ ପଟ୍ଟଭୂମିରେ ଓଡ଼ିଆ ସାହିତ୍ୟର ଆକଳନ ସହଜରେ କରିପାରିଥାନ୍ତି, ଯାହା ନିଜ ମାତୃଭୂମି ଓ ମାତୃଭାଷା ପ୍ରତି ଅଙ୍ଗୀକାରବଦ୍ଧତାକୁ ବହୁଗୁଣିତ କରିଥାଏ । ଓଡ଼ିଆ ଭାଷା, ସାହିତ୍ୟ ଓ ସଂସ୍କୃତିକୁ ବଳିଷ୍ଠ କରିବାରେ ଅଗ୍ରଣୀ ଭୂମିକା ଗ୍ରହଣ କରିଆସୁଛି ତାହା ମଧ୍ୟ ବିଦ୍ୟାର୍ଥୀମାନେ ଉପଲବ୍ଧି କରନ୍ତି । ଓଡ଼ିଆ ସାହିତ୍ୟ ଯେ ଭାରତୀୟମାନଙ୍କ ମନରେ ଜାତୀୟତାବୋଧ ଉଦ୍ରେକର ଏକ ପ୍ରମୁଖ ଅଙ୍ଗ ପାଲଟିଥିଲା ତାହା ମଧ୍ୟ ଅନୁମାନ କରିହୁଏ । ଅନ୍ୟପକ୍ଷରେ ଉନ୍ନତ ଭାଷାତାତ୍ତ୍ୱିକ ତଥା ସାହିତ୍ୟିକ ଆବେଦନ ଏବଂ ସୁଦୀର୍ଘ ଇତିହାସ ଯୋଗୁଁ ଓଡ଼ିଆ ଭାଷା ଆଜି ଶାସ୍ତ୍ରୀୟଭାଷାର ମାନ୍ୟତା ଲାଭ କରିଛି । ଏହା ସାହାଯ୍ୟରେ ଛାତ୍ରଛାତ୍ରୀମାନେ ଯେ କେବଳ ନିଜର ଭାଷାଗତ, ଲିପିଗତ ଓ ଭାବଗତ ଜ୍ଞାନର ପରିମାର୍ଜନା କରିପାରୁଛନ୍ତି ତାହା ନୁହେଁ; ଆହୁରି ମଧ୍ୟ ନିଜ ଭିତରେ ମାନବିକ ମୂଲ୍ୟବୋଧର ଚିନ୍ତାଚେତନାକୁ ପରିବ୍ୟାପ୍ତ କରି ଏକ ସୁସ୍ଥ-ସୁନ୍ଦର ସମାଜ ଗଠନରେ ଭାଗିଦାରୀ ହୋଇପାରୁଛନ୍ତି ।

ଉକ୍ତ ପାଠ୍ୟକ୍ରମଟି ଯୁଗପୋଯୋଗୀ ହୋଇ ବୃତ୍ତିଗତ ସମସ୍ୟା ସମାଧାନରେ ଶିକ୍ଷାର୍ଥୀମାନଙ୍କୁ ସହାୟକ ହେଉଥିବାରୁ ଏହା ବିଶେଷ ଆଦୃତି ଲାଭ କରିଛି । ବ୍ୟକ୍ତିତ୍ୱର ବିକାଶ ତଥା ସମାଜମଙ୍ଗଳ ଉଦ୍ଦେଶ୍ୟରେ ପ୍ରସ୍ତୁତ ପାଠ୍ୟକ୍ରମଟି ସମୟୋପଯୋଗୀ ହୋଇପାରିଛି ।