

Department of Chemistry

PROGRAMME OUTCOME

Programme in chemistry is designed to

- Provide broad and balanced knowledge in basic and applied chemistry by understanding chemicals concepts, related to principles and theories
- Develop student's ability to acquire expertise over detecting and solving problems related theories and practical.
- Provide knowledge and skills that support self employment and service to the nation.

PROGRAMME SPECIFIC OUTCOME

Programme is specified to

- Provide sound knowledge on the fundamentals and applications of chemicals and related theories.
- Interdisciplinary approach of Science and Technology is related to Chemistry.
- Easy assesses to the properties of all elements discovered.
- Application of appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories and in industries.
- Provide broad knowledge on different branches of and social application of chemistry
- Understanding the causes of environmental pollution, Contribution of chemistry towards pollution and its solution.
- Acquire the ability to synthesise, separate and characterize compounds using laboratory and instrumentation techniques.

COURSE OUTCOMES, CHEMISTRY, UG

The core courses are the main strength of this framework, whereas discipline specific electives and generic electives are there for academic excellence in the subject together with multi-dimensional and multidisciplinary approach. The core papers are designed to provide an in-depth knowledge on chemistry. The discipline specific electives are introduced in the course to provide additional knowledge about applied aspects of the program as well as its applicability in both academia and industrial fields. Generic electives are introduced to integrate various interdisciplinary courses.

The course pattern of core papers mainly covers theories and practical under sections like Inorganic Chemistry, Organic Chemistry, Physical Chemistry and Analytical Chemistry.

Inorganic Chemistry:

This part is designed to provide broad and in-depth knowledge on composition, structure and properties of different matters, Periodicity in properties of elements and their deviations, Characterization of bonding in simple and complex molecules, Chemistry of main block elements transition and inner transition elements.

Inorganic Chemistry Practical includes Quantitative analysis, Qualitative analysis and synthesis of salts, complex compounds and polymers.

Organic Chemistry:

This part is designed to provide fundamental knowledge on composition, structure, properties and synthesis of organic compounds, Study of reaction paths, including formation and characterization of attacking reagents, reaction intermediates and products, Structure and synthesis of various natural products.

Organic Chemistry Practical covers Purification of organic compounds, Chromatography, Identification of organic compounds by elements (N, S, and halogen) detection, and Functional group detection, derivative preparation and Synthesis of organic compounds

Physical Chemistry

This part includes study of different theories and laws related to composition properties and structural aspects of different elements and compounds. Phase rule, phase diagrams of one component, two component and three component systems, Kinetic and thermodynamic studies of different physical and chemical process, Electro chemical process and related theories.

Physical chemistry Practical includes, study of kinetics of reaction, surface tension, viscosity, conductometry, pH metry, Spectrophotometry,

Analytical Chemistry (Molecular Spectroscopy & Photochemistry)

On completion of this course, the students will be able to understand the basic principles and application of various spectroscopic methods, Basics of electro-analytical techniques and its applications, Understanding principles of separation technology (chromatography) and its use in advanced instrumentations.

Laboratory experiments include application of various instruments for qualitative and quantitative application.

Discipline Specific Elective

Discipline specific electives are there to introduce academic excellence in the subject together with multi-dimensional and multidisciplinary approach. The discipline specific electives are introduced in the course to provide additional knowledge about applied aspects of the program as well as its applicability in academia, industry and social fields. Discipline specific elective covers Green chemistry, polymer chemistry and industrial chemistry including their environmental impact. Green Chemistry is introduced for Understanding green chemistry and its principles, Understanding and

designing of green synthesis. Polymer Chemistry is introduced for skill development in synthesis, characterization of polymers used in society. Industrial chemistry includes chemical application for industrial purpose and its hazardous effect on environment.

COURSE OUTCOMES CHEMISTRY PG

The PG courses in chemistry are designed to develop human resources with ability for diagnosis and solution of chemistry related problems in our society. The courses are designed to provide an advance, up to date, in-depth knowledge on chemistry as well as its applicability in both academia and industrial fields. The main strength of this framework are theoretical and practical approaches under a number of sections including Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry and spectroscopy.

Inorganic Chemistry:

This part is designed to provide advance and up to date knowledge on stereochemistry and bonding in main group elements, Metal ligands bonding, thermodynamic and kinetic aspects of inorganic reaction and its mechanism, Spectroscopic and magnetic properties of transition metal complex, Metal clusters, organometallic, Bioinorganic and supramolecular chemistry, Enzymes and Enzymatic activities. Inorganic Chemistry Practical includes Quantitative analysis, Qualitative analysis and synthesis of complex compounds and polymers.

Organic Chemistry:

This part is designed to provide advanced knowledge on structure and reactivity in organic molecules, reaction mechanisms in aliphatic and aromatic organic compounds, Pericyclic reactions and photochemical reactions, organic synthesis and synthesis of complex molecules
Organic Chemistry Practical covers Identification of organic compounds by elements (N, S, and halogen) detection, and Functional group detection, derivative preparation and Synthesis of organic compounds

Physical Chemistry

This part includes study of importance and application of quantum mechanics in chemistry, Classical and statistical thermodynamics, Electro chemistry, surface chemistry, Chemical dynamics, Electro chemical techniques used in quantitative and qualitative methodology. Physical chemistry Practical includes, study of kinetics of reaction, surface tension, viscosity, conductometry, pH metry, Spectrophotometry,


Analytical Chemistry

Nimapara Autonomous College, Nimapara, Puri.

On completion of this course, the students will have sound theoretical knowledge and be activated with different laboratory techniques like Thermal analysis, Electro analytical methods and spectroscopic methods.

Spectroscopy

The courses on spectroscopy is so designed that students can acquire a sound information on theoretical aspects as well as practical application of atomic spectroscopy, Molecular spectroscopy, microwave spectroscopy, NMR spectroscopy, ESR spectroscopy, Raman spectroscopy, Vibration and rotational spectroscopy, Mossbauer spectroscopy.


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Department of Mathematics

Programme Outcome

The programme at U.G level aims to provide a foundation for pursuing research in mathematics as well as to provide essential quantitative skills to those interested in different competitive examinations.

PEO (Programme specific outcome)

On successful completion of the course students will be able to participate in scientific research & industrial activities. Also they can apply their knowledge in different field of science and Engineering.

Department of Mathematics.

Course Outcome.

CP-I Calculus

→ This course is equip the student with necessary analytic and technical skills to handle problems of mathematical nature as well as practical problems -

→ Can explore the different tools for higher order derivatives, to plot the various curves and to solve the problem associated with differentiation and integration of vector field.

After completing the course
Students

1. I nk Mathematics

are able to study, the geometry of various types of functions, evaluate the area, volume using the techniques of integration.

CP-2 : Discrete Mathematics

- This course is equip the students with basic counting principles, set theory and logic, matrix theory and graph theory.
- After ~~the~~ completing the course, students able to study advance courses in Mathematical modelling, computer science, statistics, physics, chemistry etc.

CP-3 : Real Analysis

- The ~~objective~~ course is equip the students have the knowledge on basic properties of the field of real numbers, the sequence and series of real numbers and its convergence.
- can able to handle fundamental properties of real numbers that lead to the formal development of real analysis.
- After completing the course, students will appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

CP-4 : Differential Equation

- The course is equip the students to familiarize the students with various methods of solving differential equations and to have a qualitative applications through models.

Students

Experiment Name :

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Page No. _____
Date _____

- Can able to Model problem in nature using Ordinary differential equation.
- After completing the course, this is prerequisite for studying the course and Model dealing with Partial differential equation.

CP-5: Theory of Real Functions

- The course is equip the students to deal with real functions and understand uniform continuity, mean value theorem.
- Can have knowledge on the concepts and theorem of the elementary calculus of functions of one real variable.
- After completing the course students can use derivatives to analyze and sketch the graph of a function of one variable.

CP-6: Group Theory

- The course is equip to introduce students to basic concepts of group theory and examples of group and their properties.
- Can get the idea of concept and examples of groups and their properties.
- After completing the course, students can opt for courses in ring theory, field theory, commutative algebras, linear classical groups etc.
- Students can apply this knowledge to problems in

Teacher's Signature.....

physics, computer science, economic and engineering.

CP-7: Partial differential equation & System of ODE

- This course is equip the students to understand basic methods for solving Partial Differential Equation of first order and second order.
- Can learn classification of partial differential equation and systems of ordinary differential equation.
- After completing the course, students able to take more more course on wave equation, heat equation, diffusion equation, gas dynamics, non-linear evolution equation etc.
- Students can use their applications for solving boundary value problems.

CP-8: Numerical methods & Scientific Computing

- This course is equip the students to acquaint with various numerical methods of finding solution of different type of problems.
- Can handle physical problems to find approximate solution, and determine the effect of round off error or loss of significance.
- After completing the course students able to use mathematical software in getting accuracy one need from computer and assess reliability of numerical results.

CP-9: Topology of Metric spaces

- This course is equip the students to impart knowledge on open sets, closed set, continuous functions, connectedness & compactness in metric spaces.
- After completing the course students will learn to work with abstract topological spaces.

Experiment Name :

CP-10: Ring Theory

- This course is equip the students with basic of ring theory.
- After completing the course, students continue more courses on advanced Ring theory modules, Ideals, Groups.

CP-11: Multivariate Calculus

- This course is equip the student to introduce functions of several variable.
- Can understand double and triple integrals along with line integrals which are fundamental to all streams where calculus can be used.
- After completing the course, students able to do numerical computations involving several variables.

CP-12: Linear Algebra

- This course is equip the students in finding real life applications.
- Can introduce the basics of linear algebra and some of its application.
- After completing the course students use their applications in computer science, finance mathematics, industrial mathematics, bio mathematics etc.

Teacher's Signature.....

CP-13: Complex Analysis

- This course is equip the students in finding real life application.
- Can introduce to the theories of functions of a complex variable.
- After completing the course students will be able to handle certain integrals and know a technique for counting the zeros of polynomials.

DSE-I (Linear Programming)

- This course is equip to the students to familiarize industrial problem with various method of solving Linear Programming Problems.
- Can apply the Linear programming method in Game theory.
- After completing the course, students can study advance courses in Nonlinear programming problems, Inventory Control problem & Queuing Theory etc.

DSE-II (Probability & Statistics)

- This course is expertise the student to the extensive role of statistics in everyday life and computer.
- The students shall learn probability and statistics for various random variables, multivariate distribution, correlations & regressions.


DSE-III Differential geometry

- The course is equip to the students the geometry of curves and surfaces which provides a student using tools for calculus to derive the intrinsic problems.
- Students will learn relation between tangent, normal & binormal ideas on various curvatures etc.

DEPARTMENT OF PHYSICS

PROGRAMME OUTCOME.

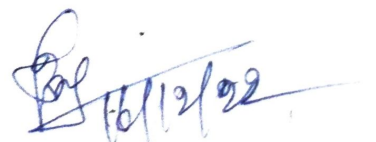
→ To develop the ability of the students in understanding the basic concepts of Physics, carrying out skills on experimental Physics that will foster them for further higher studies and by the by day to day research programmes which ultimately enable them to be the assets for the nation building programmes in the challenging global scenario.

 16/12/22

DEPARTMENT OF PHYSICS

PROGRAMME SPECIFIC OUT COMES

- To enable the students' academic abilities particularly on the major branches of Basic Science, Physics.
- To motivate the students to pursue P.G. courses in reputed institutions; viz, IITs, NISERS, ISERS, NITS, MCA, etc.
- To provide a hands on learning experiences on branches of Physics; viz, Mechanics, Optics, Electricity, Magnetism, Thermodynamics, electronics, Modern Physics, Statistical Physics, Solid state Physics, Particle Physics, Nano Physics, Quantum Mechanics, Mathematical Physics and with equal importance on experimental skills.
- To develop the activities like Periodic Seminars, Wall magazines, poster presentation, study tour and national level examinations etc.
- To foster the students to acquire skills on solving real time problems and provide themselves to be good and responsible Technical experts in the emerging World.


16/12/22

COURSE OUTCOMES:-

MECHANICS:-

This course provides the basic concepts related to the motion of physical objects around us in our daily life. The course comprises of the study of vectors, laws of motion, momentum, energy, rotational motion, gravitation, fluids, elasticity & special relativity.

ELECTRICITY AND MAGNETISM:-

It gives an opportunity for students to learn about one of the fundamental interactions of electricity and magnetism, both as separate phenomena and as a singular electromagnetic force. The course contains vector analysis, electrostatics, magnetism, electromagnetic induction and Maxwell's equations.

THERMAL PHYSICS AND STATISTICAL MECHANICS:-

This course makes the students able to understand the basic physics about heat & temperature, and their relation with energy, work, radiation, and matter. The course consists of the laws of thermodynamics, thermodynamic description of systems, thermodynamic potentials, kinetic theory of gases, theory of radiation and statistical mechanics.

WAVE & OPTICS:-

The course comprises of the study of superposition of harmonic oscillations, wave motion, oscillators, sound, wave optics, interference, diffraction, polarization. This course helps students to make their in various branches of science, especially in the field of photonics.

MATHEMATICAL PHYSICS:-

This topic covers various mathematical tools/methods to solve the various problems in physics. The course includes the calculus of functions, Fourier transform, Laplace transform, special functions & special integrals, partial differential equations, complex analysis and variables.

QUANTUM MECHANICS:-

Quantum mechanics provides a platform for physicists to describe the behaviour of matter and energy at atomic and subatomic level. The course plays a fundamental role in explaining how things happen beyond our normal observations. The topic includes the study of Schrödinger equations, particle in one dimension potential, quantum theory of Hydrogen and Hydrogen like atoms.

Elements of Modern physics:-

This course covers the basic principles in the development of Modern physics. The topic build up foundation for under graduate student to study the advance



branches: Quantum mechanics, Nuclear physics, particle physics and High energy physics.

The course contains the study of the Planck's hypothesis, photoelectric effect, Compton effect, matter waves, atomic models, Schrödinger wave equations, and brief idea of nuclear physics.

SOLID STATE PHYSICS :-

The course comprises of the study of crystal structures, elementary lattice dynamics, magnetic properties of matter, Dielectric properties of materials, lasers, elementary band theory, Superconductivity. The course build a theoretical basis of experimental material science & technology.

STATISTICAL PHYSICS :-

The course includes the classical statistics, quantum statistics, and radiation. The course is helpful for students to understand the dynamics of the bulk material in macroscopic as well as microscopic levels. This course makes students to understand how statistics of the microscopic world can be.

NUCLEAR AND PARTICLE PHYSICS :-

The topic includes the general properties of nuclei, Radioactive decays, Nuclear models, Detector for nuclear radiation, particle accelerators, Basics of particle physics, Symmetries and conservation laws. This course is important for students to learn about ^{the} most fundamental building blocks of matter and radiation.

16/11

DEPARTMENT SANSKRIT

PROGRAM OUTCOME

संस्कृतम् इण्डो-यूरोपीयभाषासमूहस्य अतीव समृद्धा भाषा अस्ति। एषा भाषा प्राचीनभारतीय-इतिहासस्य, संस्कृतेः, धर्मस्य, सामाजिकजीवनस्य विषये स्वग्रन्थद्वारा ज्ञातुं माध्यमभूता अस्ति। अनिर्णयिता तथा जैनेरिक-ऐच्छिक-पाठ्यक्रमयोः शैक्षणिककार्यक्रमः न केवलं व्यावसायिककौशलपरिकल्पितः अपि तु विभिन्नसंस्कृतग्रन्थानां माध्यमेन भारतस्य सर्वविधां समुन्नतिं कारयति तथा गतिशीलप्रचलितपरिदृश्यस्य च गहनबोधं विकासयति।

SYLLABUS OUTCOME

संस्कृतभाषायां पाठ्यक्रमः एतादृशरीत्या परिकल्पितः यत् छात्राणां सामग्रीकविकासरूपं लक्ष्यं प्राप्तुमयं सक्षमो भवति। प्रारम्भिकचरणे संस्कृतव्याकरणस्य सूक्ष्मतां विशिष्टतां च ज्ञातुं छात्राणां कृते संस्कृतभाषायाः मूलभूतज्ञानं प्रदत्तं भवति। तेषु उच्चमनोबलस्य निर्माणं तत् परिपूर्णाः निर्दिष्टकथाः पाठ्यन्ते। तदतिरिच्य प्राचीनभारतीयनाटकस्य, अनुप्रयुक्तनाट्यशास्त्रस्य च मौलिकसिद्धान्ताः संस्कृतसाहित्यस्य इतिहासेन सह अस्य उपमहाद्वीपस्य सांस्कृतिकपरम्परा-सम्पर्कविषयाः सन्नद्धाः सन्ति। तेन च छात्राणां शैक्षिकी प्रगतिः सम्भवति। यतो हि संस्कृतभाषा अनेकविधैः सुगभीरजीवनदर्शनपरिपूर्णेः चिन्तनैः प्रफुल्लिता अस्ति, तस्मात् छात्राणां स्वरूपपरिचितिनिमित्तं गीतिकाव्यं, मिश्रकाव्यं, गद्यसाहित्यं, काथासाहित्यं, काव्यशास्त्रं, शृङ्गारशास्त्रम् इत्यादिकम् अभिज्ञैः प्राज्ञैः सन्निवेशितम्।

अनुवादः बाह्यजगति स्वदेशीयज्ञानस्य प्रसारणार्थं महत्त्वपूर्णं साधनं मन्यते। तत्र संस्कृतस्य छात्राणां कृते अनुवादस्य युक्त्यः पाठ्यन्ते, येन संस्कृतस्य समृद्धः निधिः अन्यभाषासु प्रसारितो भवति। भारतीयसभ्यता विश्वस्य प्राचीनतमसभ्यतासु अन्यतमत्वेन विश्वस्य इतिहासं संस्कृतिं च अत्यन्तं निष्ठापूर्वकं संरक्षितवती अस्ति। सर्वज्ञानमयवेदोपनिषदादिग्रन्थाः प्राचीनभारतीयसंस्कृतेः मूलाधारभूताः। एतेषामध्ययनेन पुद्गानुपुद्गविश्लेषणेन च जीवनदर्शनजिज्ञासुनां छात्राणां सर्वविधसमुन्नतिः अनायासेन सम्भवतीति पाठ्यक्रमस्यास्य प्रमुखमुद्देश्यम्।

प्राचीनभारतीयानां चिकित्साशास्त्रे, वनस्पतिविज्ञाने, वास्तुशास्त्रे, समाजशास्त्रे, ज्योतिषशास्त्रे, खगोलशास्त्रे, गृहमन्दिरवास्तुकलायां च वैज्ञानिक-दृष्टिभङ्गी, मूलतत्त्वान्वेषणतापरेण, वैश्विकीदृष्टिः सम्यक्तया प्रतिफलिता दृश्यते। एतेन अस्याः प्राचीनतमभाषायाः समाजकल्याणं प्रति महत्त्वपूर्णं योगदानमस्ति इति निश्चीयते। सम्पादन-प्रूफरडिङ्-लेखन-कौशलयोः प्रशिक्षणमपि संस्कृतभाषायाः पाठ्यक्रमस्य प्रमुखः पक्षः अस्ति। एतेन सम्बद्धेषु आधुनिकक्षेत्रेषु मार्गेषु च कार्यावसरस्य चयनं कर्तुं शिक्षिकाणां क्षमता दक्षता च वर्धते।

भविष्यत्संशोधनार्थं छात्राणां कृते प्रारम्भिकप्रशिक्षणं प्रदातुं घोषितलक्ष्यैः सह परियोजनानिर्माणार्थं विशेषतया एकं शोधपत्रं समर्पितमस्ति। एतेन छात्राणामेषां शोधमानसिकता, विश्लेषणात्मिका प्रवृत्तिः, लेखनकौशलं च सुनिश्चितं भवति। एवं वर्षत्रयस्य कालखण्डे छात्राणां कृते प्राचीन-आधुनिक-शिक्षा-व्यवस्थानां सामग्रीकपरिचयः सुदृढ-देशीय-आधारेण सह प्रदीयते।

Department of Education

Programme
Outcome

Developing appropriate attitude, Professional abilities, skills in teaching, Pedagogical knowledge and effective quality about I good citizenship.

Programme specie
outcome

On successful completion of the Programme the students will be able to acquire skills & efficiency in different content and Pedagogy. They acquire all the skills & abilities to be Perspective teachers, education officers, counsellors, planners & Policy maker.

Department of Education

Programme (U.G) Course outcome.

CP-1 Educational Philosophy

- Co-Students understand the meaning, nature, scope aims of education and form own concept on education.
- Describe the essence of different formal philosophies and draw educational implications.
- Describe the essence of different Indian school of philosophy & draw educational implications.

CP-2 Educational Psychology

- Co-students explain the concept of educational psychology & its relationship with psychology.
- Understand different method of educational psychology.
- Describe the theoretical perspectives of educational oral psychology.
- Explain the concepts of growth and development of child and adolescence and underlined general principle of growth and development.
- Specify the context and factors influencing development.
- Explain the theory of cognitive development & its educational implications.
- State the different forms and characteristics of individual differences and the ways of meeting the classroom issues arising out of the differences.

CP-3 Educational Sociology

- Co-Students acquire details knowledge about sociological foundation of education and related the theories to real life. They also learn about social agencies, social change & role of education in modernization and globalization. They also describe the function of education to ensure equality and equity & inclusion.

CP-4 Changing Pedagogical Perspective

- Co-Students explain the concept of pedagogy.
- They can differentiate pedagogy from other allied concept.
- Prepare lesson plan following different design such as Herbert ion, 5E& ICON.

CP-5 Educational Assessment and Evaluation

- Co- The student acquires the knowledge of purpose & type of educational assessment and evaluation.
- Develop & use different types of tool & techniques for continuous & comprehensive assessment of learning in the school situation.

- Explain the importance of assessment for learning and its processes for enhancing the quality of learning and teaching.

CP-6 Educational Research

- Co- The student explain the nature, scope and limitation of educational research.
- Understand different types and methods of educational research.
- Explain source from where knowledge could be obtained.
- Describe the process of research in education.
- Analyze research design in education.
- Illustrate procedure of collecting & analyzing data.
- Prepare the research report.

CP-7 Statistic in Education

- Co- Students understand the meaning, nature, scope & importance of statics.
- Complete & use various & bi-variate distribution of average, variation & bi-variate distribution to in analysis and interpretation of educational data.

CP-8 History of Education in India

- Co- student acquires details knowledge about development of education in India during ancient period, medieval period & Pre-independence period.

CP-9 Curriculum Development

- Co-Student develop an understanding of the basic concepts of curriculum studies, relation among curriculum, Pedagogy and assessment, National curriculum framework 2005,(NCF 2005)

CP-10 Guidance & Counselling

- Co- Learners gain the basic knowledge about guidance and counselling its meaning, definition function, type, techniques and types of counselling and basic data necessary for guidance.
- Explain the qualities and role of a counsellor.

CP-11 Development of Education in Odisha

- Co- Learners develop knowledge about the structure of educational system of Odisha.
- Schemes of central as well as state govt. being implemented in the state of Odisha.
- Analyze the scenario of higher and technical education of Odisha.
- Establish linkage between higher education & development of the state.

CP-12 Information & Communication Technology in Education

- Co- The student will explain the concept, nature and scope of ICT in education.
- Demonstrate the use of various application software in education.

CP-13 Contemporary Trends and Issues in Indian Education

- Co- The student will understand the importance of pre-school and elementary school education. Analyze various problem and issue for ensuring quality education.

CP-14 Educational Management & Leadership

- Co- The student will describe the concept, types and importance of educational management.
- Analyze the concept, principle and structures of total quality management approach in education.

D.S.E-3

Policy and Practical in Higher education

- Co- The student shall analyze various policies on education for higher education in India.

D.S.E-4

Research Project

- Co- Get practical exposure and Knowledge which will equip student in research work.

Dept. of English

factors of classicism. Besides that, some works of great poets like W. Wordsworth, S.T. Coleridge, J. Keats, P.B. Shelley, Thomas Gray are taught to them in Cone V. In Cone VI students learn about the major socio-political developments that took place in the 19th Century England. The gradual emergence of industrialisation, technological advancements associated with it, the large scale migration of people from the rural areas to urban areas and the changing life-style of people are taught in this paper. Literary works of great poets like Lord Tennyson, Robert Browning, Matthew Arnold, Jane Austen and Charles Dickens are taught to them. In Cone VII, the students learn about the social, political and economic developments which led to the First World War and its impact on the lives of people. Karl Marx's concept of class struggle, S. Freud's theory of the unconscious and Darwin's theory of human evolution and its great impact on the minds of people are taught to them in detail. They also read some poets' works, novels and piece of literary criticism in this paper. Great twentieth century poets like T.S. Eliot, W.B. Yeats, W. Owen, S. Sassoon are prescribed for them.

IV the Sem. syllabus consists of Cone VIII, Cone IX and Cone X.

Cone VIII: (American Literature)
It provides an overview of canonical authors from American Literature in the established genres.

- It deals with genesis and evolution and the defining myths of American Literature
- Concepts like city on a hill, the frontier spirit, the American Dream, manifest destiny, e pluribus unum are taught
- The origin and growth of American Literature is prescribed for the students
- Students get a fair idea about the origin of creation of America as a nation and its social, economic, literary development

Cone IX (European Classical Literature)

- Students are introduced to European Classical Literature
- The study period covered ranges from 8th Century BC in ancient Greece to the decline of Roman Empire in the 5th Century AD.
- Students learn about cultural history of the Greco-Roman world which centered around the Mediterranean Sea
- They learn about some great classical writers like Homer, Sophocles and Aristotle

Cone X (Women's Writing)

- This paper gives the students an idea about the works of women writers from different countries

- It helps them to learn and critically appreciate the works of women authors from different perspective
- They become aware of the struggle of women authors in a patriarchal society, gender related issues, and other obstacles they face
- How the women authors try to maintain relations of desire and power in a male dominated world

In the Vth Sem. they have C-XI, C-XII, DSE I, DSE II.

C-XI (Modern European Drama)

- This paper introduces the students to the best of experimental and innovative dramatic literature of modern Europe.
- They learn about the politics and social changes which influenced the stage and dramatic performances
- The growth and development of European Drama
- The element of realism and its influence on European Drama
- Concept of Modern European Drama in relation to Tragedy and Heroism.
- Emergence of the Theatre of the Absurd

Cone XII (Indian Classical Literature)

- This paper aims to create awareness among the students of the rich, diverse literary and ^{aesthetic} culture of ancient India
- It introduces students to the history and genesis of Indian Classical literature.
- Students learn about the origin and development of Sanskrit drama since ancient time
- They read certain texts of Sanskrit dramatists which are available in English translation
- The students are also taught the ancient Sanskrit Literature like Sanskrit Kavya and Sanskrit narrative Literature.

DSE - I (Literary Theory)

- This paper exposes the students to the basic premises and issues of major theoretical approaches to literary texts
- Students are taught some important literary theories in detail like New Criticism, Marxist Criticism, Feminist Criticism and Structuralism

DSE - II (World Literature)

- This paper introduces the students to the study of world literature through a representative selection of texts from around the world.
- The students get an idea to read beyond the classic European canon.

- The paper deals with literary texts chosen from other regions/countries except the USA, and were originally written in languages other than English. The students read the English translation of the texts.
- The course covers books written by German playwright A. Camus; Caribbean novelist V. S. Naipaul; Canadian Short Fiction of A. Munro and Latin American Poetry of Pablo Neruda

The Programme Outcome:

- After successful completion of 03 year Hons. Course, the students get a clear idea about origin and development of English Literature.
- Starting from 14th Century, the course covers authors and literary theories of late 20th century
- After completing Hons. course, some students pursue their study in P.G. course
- Some other students study journalism and mass communication
- A few students join computer training courses
- Some prepare themselves for state level eligibility test meant for School Teachers and other competitive exams.

Objectives of English Subject

- To enable the students acquire fluency in communication.
- To enhance the linguistic and vocabulary skills
- To develop command over the subject through various competitions (like debate and essay comp.)
- To create an awareness among them about the changing trends in English language (both written and spoken)
- To develop intellectual, personal and professional abilities.

English (Hons. Course)

This college offers 03 (Three Year) Hons. course for UG students. The syllabus followed is based upon CBCS pattern and is prescribed by Utkal University because this institute is affiliated to Utkal University, Bhubaneswar. The students are expected to study 14 Core Papers and 04 Discipline Specific Papers during these three years. The whole course is divided into 06 semesters. In the 1st Semester, they read Core-1 (British Poetry and Drama: 14th to 17th Centuries) and Core-2 (British Poetry and Drama: 17th and 18th Century). After reading these two papers, they are able to get an idea about the origin and development of Modern English Literature. These two papers give an insight into the formation and growth of modern English language and literature.

In the 2nd Semester they read Core III (British Prose: 18th Century) and Core IV (Indian Writing in English). Core III deals with the development of English prose as a major area of literature. Before that, mostly Poems and Dramas were written. Prose as a form of literature got its recognition in 18th Century. The other Core Paper helps the students to become familiar with the works of some great Indian authors, poets and playwrights. They are also taught the background development of Indian writing in English which included points like the arrival of East India Company in India, Macaulay's 1835 Minutes of Education, India's first war of independence and the establishment of colleges in India to promote Western education and the evolution of Indian Writing.

In the 3rd Semester the students read Core V (British Romantic Literature), Core VI (British Literature 19th Century) and Core VII (British Literature: Early 20th Century). In these papers they get an idea about The Romantic Revival, The Age of Revolution, its link with French Revolution of 1789. They also learn about the organic relationship between man and Nature, importance of individual liberty and human desire to break free from imposing

Course Outcome

Course Objectives and Programme Outcomes

Bachelor of Arts (+3 Arts)

+3 Arts course is offered to Under Graduate students pursuing their study in Arts stream. This course provides education in a broad spectrum. Its aim is to acquaint students with a wide range of educational background and make them future-ready to deal with their career goals and personal life. This course is designed in such a manner that it offers a rich variety of subjects and help them understand the cultural, historical, political, educational, linguistic, ethical and environmental factors which have helped in the shaping of the modern world. The students also learn about the role of individual contribution in the development of society and the role of successful communication in this context. A variety of modes of learning and teaching is adopted for this purpose.

English (Compulsory Course)

Outcome of English Subject

English is the most important international language of communication. In this time of globalisation, the value of learning this language has increased manifold. Even in India English has become the second most spoken language. In comparison to other international languages, English is easy to learn. Even for mastering greater technical knowledge and skill for successful operation of computer related activity, for the use of internet, carrying out any sort of official communication, knowledge of English language plays an important role. The course pattern is designed in such manner that after completion of this course, the students will be able to -

- Understand how the English language has changed over time from its origin to the present day
- Read and interpret texts from various types of writing
- To learn to communicate and successfully present the ideas and use the sources accurately and effectively.
- Keeping an eye on the need of the hour, the present course material has been planned to make the students successful communicators
- Learning the language will help them increase their self-confidence

Core Course-5 ବିଜ୍ଞାନ ୨୯

ଓଡ଼ିଆ ଭାଷାରେ ଗପୁଡ଼ି, ଜଣାଣ କ୍ରମ, ଏବଂ ପୁରା ଓଡ଼ିଆ ଭାଷାରେ
ସୂଚି ଓ କ୍ରମ ଜଣାଣ, ଅପରାଧର ପରିଚ୍ଛନ୍ନ ବିଧିଧାରା । ଓଡ଼ିଆ ଭାଷାରେ
ଉପରୋକ୍ତ କ୍ରମର ଲିପିଲେଖନ, ପଞ୍ଜୀକରଣ ଓ ପ୍ରମାଣ ପଦ୍ଧତିର ଓଡ଼ିଆ
ପୁସ୍ତକ, ମାଧ୍ୟମିକ ମହାବିଦ୍ୟାଳୟର ପ୍ରମାଣ ବିଧିଧାରା ।

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Core Course-6 କବିତା ୨୯

ଭାଷାରେ ଶିକ୍ଷା, ସୂଚନା, ଉପଲବ୍ଧି, କଳାକାର, ପ୍ରକାର ଓ
ଓଡ଼ିଆ ଭାଷାରେ କବିତା ଓଡ଼ିଆ ପ୍ରକାର ଓ ପଦ୍ଧତିର ବିଧିଧାରା ।
ଓଡ଼ିଆ ଭାଷାରେ କବିତା ମହାବିଦ୍ୟାଳୟର ପଦ୍ଧତିର କବିତା
କବିତା ଲେଖନର ଲେଖନାବଳୀ ।

Core Course-7 ସଂସ୍କୃତ ୨୯

ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ପଞ୍ଜୀକରଣ ଓଡ଼ିଆ ଭାଷାରେ
କବିତାରେ ପ୍ରକାର ଓଡ଼ିଆ ଭାଷାରେ । ଓଡ଼ିଆ ଭାଷାରେ ଲିପିଲେଖନ
ଓଡ଼ିଆ ଭାଷାରେ ଲିପିଲେଖନ ବିଧିଧାରା ।

Core Course-8 ପଞ୍ଜୀକରଣ ୨୯

ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ କବିତା ଲେଖନର
ପଦ୍ଧତିର ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ବିଧିଧାରା । ଓଡ଼ିଆ
କବିତା, ଓଡ଼ିଆ ଭାଷାରେ, ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ପଞ୍ଜୀକରଣ, ଓଡ଼ିଆ ଭାଷାରେ, ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ।

Course-9 ବିଜ୍ଞାନ ୨୯

ପ୍ରାକୃତ ଓ ପାଶ୍ଚାତ୍ୟ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ

Core Course-10 କବିତା ୨୯

ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ

Core Course-11 କବିତା ୨୯

ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ

Core Course-12 ପଞ୍ଜୀକରଣ ୨୯

ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ
ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ ଓଡ଼ିଆ ଭାଷାରେ

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Core course - 13 - ଏକମ ପଢ଼

ଭୂମିକା ଏବଂ ଅନ୍ୟ କିଛି ମାଧ୍ୟମର ଦାୟିତ୍ୱ ଲିଖିତ ପଢ଼ାବହି, ଡିଏନ ଇତ୍ୟାଦି କମ୍ପ୍ୟୁଟର କାର୍ଯ୍ୟର ପଢ଼ାବହି ବିଶିଷ୍ଟ । ଦେଖିବାକୁ କିଛି ଆଗାମୀର ସମସ୍ତ ଧାରଣା ସୂଚୀ ଦେଖାଯାଏ ।

Core course - 14 ଏକମ ପଢ଼

ଭୂମିକା ଦାୟିତ୍ୱ କାର୍ଯ୍ୟର ପଢ଼ାବହି ମଧ୍ୟ ଲିଖିତ, ଉପର ଲୋକମାନଙ୍କ ପ୍ରତି, ଏବଂ କାର୍ଯ୍ୟର ପଢ଼ାବହି, ସମସ୍ତଙ୍କ ସମ୍ପର୍କ, କଥା କହିବାକୁ ଲିଖିତ ପଢ଼ାବହି ସୂଚୀ ଦେଖାଯାଏ ।

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Nimapara Autonomous College
Department of Botany
Programme: B.Sc. Botany

Programme Outcomes (PO)

- PO 1: Application of Botany in agriculture through study of Economic botany and plant pathology.
- PO 2: Paleo botany to trace the evolution of plants.
- PO 3: To assess the diversity of plants.
- PO 4: The role of plants in the proper functioning of the global ecosystem.
- PO 5: To apply analytical techniques for Biochemical estimation in Molecular Biology, Biochemistry, Biotechnology, Plant Tissue culture experiments.
- PO 6: Application of Statistics to interpret the biological data.

Programme Specific Outcomes (PSO)

Students will be specifically able to:

- PSO 1: Identify, classify and naming the plants by using the important characters.
- PSO 2: To do artificial propagation of plants via tissue culture techniques.
- PSO 3: To relate and distinguish the features of lower and higher groups of plants.
- PSO 4: Gain knowledge through experiments will generate skilled personnel in various priority areas such as genetics, cell and molecular biology, plant systematics and biotechnology.
- PSO 5: Know the importance of natural resources and environment.

Course Outcome (CO)

Core Paper I

MICROBIOLOGY AND PHYCOLOGY

- CO 1- To know the world of microorganisms and algae.
- CO 2- To know the adaptive approaches of microbes and algae.
- CO 3- To study the economic importance of algae, bacteria and viruses.
- CO 4- To know the application of algae in agriculture.
- CO 5- To study the evolutionary significance of green algae as ancestors of land plants.

Core Paper II

BIOMOLECULES AND CELL BIOLOGY

- CO 1- To know the biochemical nature and composition of cell.
- CO 2- To know the properties and chemical nature of biomolecules.
- CO 3- To know the economic importance of enzymes in industry.
- CO 4- To know the properties and chemical nature of an enzymes.

CO 5- To know the importance of pH, buffers in catabolic and anabolic reactions of the cell.

Core Paper III MYCOLOGY AND PHYTOPATHOLOGY

CO 1- To understand the world of fungi.

CO 2- To know the symptoms of several plants diseases and their by undertake different control measures to protect plants or crops from disaster.

CO 3- Knowledge on the different disease management and usage of various control agent's against various pathogens.

Core Paper IV ARCHEGONIATE

CO 1- To know the habits and habitats of archegoniate.

CO 2- To appreciate the importance of Paleobotany and its applications.

CO 3- To understand the evolutionary trends in Bryophytes, Pteridophytes and Gymnosperms.

Core Paper V ANATOMY OF ANGIOSPERMS

CO 1- To understand the various components of stem and wood during its secondary growth.

CO 2- To know the age of the plants through dendrochronology.

Core Paper VI ECONOMIC BOTANY

CO 1- To know the importance plants in human welfare.

CO 2- To Know importance of plants & plant products.

CO 3- To evaluate the chemical contents of the plant products.

CO 4- To Know about the utility of plant resources.

Core Paper VII GENETICS

CO 1- To know the basic principles of genetics and several mechanism of inheritance of characters from generation to generation.

CO 2- To gain a clear outlook of the mechanism of heredity.

CO 3- To know the basic processes of plant breeding and crop improvement using different breeding techniques.

Core Paper VIII

MOLECULAR BIOLOGY

- CO 1- To understand the ultra-structure and functioning of cell in the sub-microscopic and molecular level.
- CO 2- To understand the process of central dogma.
- CO 3- Learn the scope and importance of molecular biology.

Core Paper IX PLANT ECOLOGY AND PHYTOGEOGRAPHY

- CO 1- Understand plant communities and ecological adaptations in plants learn about biodiversity and its conservation.
- CO 2- Study botanical regions of India and different vegetation types.
- CO 3- Understand bioremediation, global warming and climate change.

Core Paper X PLANT SYSTEMATICS

- CO 1- Study plant morphology.
- CO 2- Identification of genus and species of locally available wild plants.
- CO3- Preparation of botanical keys at generic level by locating key Characters

Core Paper XI REPRODUCTIVE BIOLOGY OF ANGIOSPERMS

- CO 1- To know the importance of palynology and its aspects and prospects.
- CO 2- To know the process of fertilization, endosperm and embryogeny.
- CO 3- Understand the process of development of micro and mega spores and its involvement in the process of plant development

Core Paper XII and XIII PLANT PHYSIOLOGY

- CO 1- To understand the relationship of plant with water.
- CO 2- To understand the importance of photosynthesis and respiration in higher plants.
- CO 3- To know the application of phytohormones in horticulture.
- CO 4- To know the mechanism of translocation of food from source to sink or sink to source.

Core Paper XIV PLANT BIOTECHNOLOGY

- CO 1- To understand scope of plant biotechnology in India.
- CO 2- To Know influence of plant biotechnology on socioeconomic aspects of

Life.

CO 3- To understand the importance of interdisciplinary and industrial approaches of Biotechnology.

CO 4- To know the plant tissue culture.

CO 5- To know about Somatic embryogenesis, protoplast isolation, regeneration of protoplasts and protoplasts fusion, Synthetic seeds, generation of cybrid and hybrids, Cryopreservation technique, Recombinant DNA technology, Gene cloning, Vectors, Role of Agrobacterium and Gene cloning techniques.

**Head of the Department Botany
Nimapara Autonomous College**

①
DEPARTMENT OF ECONOMICS

① Programme outcome

Developing in-depth knowledge of students in frontier areas of economic theory and methods, so that they are able to use the knowledge to study real world economic problems.

② Programme specific outcome

→ On successful completion of the programme, the students will be able to understand economic theories and functioning of basic microeconomic and macroeconomic systems. They will acquire statistical and mathematical skills such as collection, organization, tabulation and analysis of empirical data.

Besides, this will help the students to pursue career in financial consultant, pricing analyst, statistician, insurer, business manager, auditor, etc.

Nimapara, Puri.

DEPARTMENT OF ECONOMICS

COURSE OUTCOME

SEMESTER - I

① CORE PAPER I (INTRODUCTORY MICROECONOMICS)

This course is designed to expose the students to the basic principles of micro-economic theory. It will illustrate how micro-economic concepts can be applied to analyze real life situation.

CORE PAPER II (MATHEMATICAL METHODS FOR ECONOMICS)

The course is designed to transmit the body of basic mathematics that enables the study of economic theory specifically microeconomic theory, macroeconomic theory, statistics, econometrics set out in the syllabus. to illustrate the method of applying mathematical techniques to economic theory in general.

SEMESTER - II

CORE PAPER III (INTRODUCTORY MACROECONOMICS)

This course aims to introduce the students to the basic concepts of macroeconomics, and measurements of macroeconomic variables like- saving, investment, GDP, money, inflation, BOP etc.

①

① CORE PAPER IV (MATHEMATICAL METHODS FOR ECONOMICS II)

This course aims to improve mathematical skills necessary to study economics such as derivative, integration, linear models, optimization, etc.

SEMESTER III① CORE PAPER V (MICROECONOMICS I)

This course is designed to provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents such as consumers, producers and behaviour of the competitive firms.

② CORE PAPER VI (MACROECONOMICS II)

This course introduces the students to formal modelling of a market economy in terms of analytical tools. It also discusses various alternative theories of output and employment determination and various issues related to an open economy.

③ CORE PAPER VII (STATISTICAL METHODS FOR ECONOMICS)

This course introduces some basic concepts and terminologies that are fundamental to statistical analysis followed by measure of relationship between variables. This is further followed by index number, time series, probability and theoretical distribution etc.

SEMESTER - IV

CORE PAPER VIII (MICROECONOMICS II)

This course will give conceptual clarity to the students coupled with the mathematical tool and reasoning. It covers market, general equilibrium, welfare, imperfect markets and topics under information economics.

CORE PAPER IX (MACROECONOMICS II)

In this course, the students are introduced to the long-run dynamic issues like growth and technical progress. It also provides the micro foundations to the various aggregate concepts.

③ CORE PAPER X (RESEARCH METHODOLOGY)

This course is to develop a research orientation among the students and to acquaint them with fundamentals of research methods. Specifically, the course aims at introducing them to the basic concepts used in research and their approach. It also includes discussions on sampling technique, research design and techniques of analysis.

SEMESTER V

CORE PAPER XI (INDIAN ECONOMY I)

This course reviews major trends in economic indicators and policy debates in India in the post-independence period, with particular emphasis on paradigm shifts and turning points.

② CORE PAPER XII (DEVELOPMENT ECONOMICS I)

This course begins with a discussion of alternative concepts of development and their justification. It then proceeds to aggregate model of growth, measures of inequality, poverty. The course ends by linking political institutions to growth i.e. role of state in economic development.

SEMESTER VI

① CORE PAPER XIII (INDIAN ECONOMY II)

This course examines sector specific policies and their impact in shaping trends in key economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence.

CORE PAPER XIV (DEVELOPMENT ECONOMICS II)

It begins with the basic demographic concepts and their evolution during the process of development. The structure of markets is linked with problems of enforcement experienced in poor countries. The governance of communities is linked to question of sustainable development. The course ends with role of globalization and increased international dependence on the process of development.

③ DSE 3 (ENVIRONMENT ECONOMICS)

This course introduces the students to the basics of environmental economics to understand the fundamentals of environmental concern and develop insights into valuation of environment.

④ DSE - 4 (DISSERTATION)

It provides practical exposure and knowledge which will help students in research work.